European Journal of Medical Research

Official Organ »Deutsche AIDS-Gesellschaft«
»German Competence Network for HIV/AIDS«

VOLUME 15 / SUPPLEMENT I OCTOBER 13, 2010

Abstract Book

21ST European Students´Conference

PROMISING MEDICAL SCIENTISTS WILLING TO LOOK BEYOND

Charité – Universitätsmedizin Berlin

13th October – 17th October 2010

Eur J Med Res 15(Supplement I): I-XXII, 1-240(2010) ISSN 0949-2321 **Recent Impact Factor 1.130**

Indexed in: ***Index Medicus* and MEDLINE**
Indexed in: **SciSearch® (Science Citation Index-Expanded), ISI Alerting Services (incl. Research Alert®), Current Contents®/Clinical Medicine**
Indexed in: **Chemical Abstracts**

Medical Scientific Publications I. Holzapfel Munich Germany

European Journal of Medical Research

Medical Scientific Publications I. Holzapfel Munich Germany

Contents

Anaesthesiology / Emergency Medicine

Comparison of different preconcentration techniques in breath analysis under real life clinical conditions
Sabel B, Schubert J, Miekisch W, Fuchs P, Kischkel S, Mieth M 1

Pattern of injuries sustained in suicidal bomb blast attacks during 2000-08 in Karachi, Pakistan: A retrospective study
Khaliqdina SAJ, Khaliqdina SJ, Surani AA, Surani A, Zahid S 1

Comparative blood gas analysis in critically ill patients with / without sepsis
Usturoi I 2

Correlation between chronic musculoskeletal pain and depression
Gluhovic M, Vasiljevic, Pjevic, Boskovic 2

Post dural puncture headache- A comparison between median and paramedian approaches in orthopaedic patients
Daftari Besheli L, Mosaffa F, Karimi K, Eajazi A 2

The comparison of analgesic effects of acetaminophen and metamizole on pediatric orthopaedic surgical patients
Smiljanic M, Simic D 3

The use of bispectral index (bis) in Intrasurgical Monitoring of Awareness during the General Endotracheal Anaesthesia
Kovacevich F, Kocich M, Popovich N 3

High volume continuous veno-venous hemofiltration and its effect on proinflammatory cytokines concentrations in septic shock patients plasma, treated in Intensive Care Unit - A preliminary study
Kedzierawska S, Baran B, Dabrowski W, Nestorowicz A, Rolinski J, Tabarkiewicz J 3

Pre- and postconditioning with isoflurane and the effects on glycogen synthase kinase 3-beta expression in the in vivo rat heart
David A, Gheorghiu G, Hensia C, Ordodi V, Bedreag O, Papurica M, Muntean D, Sandesc D 4

The relationship between central venous oxygen saturation (Scvo2) and oxygen debt in normovolaemic anaemia
Kocsi S, Demeter G, Soós K, Nagy E, Érces D, Kaszaki J, Molnár Z 4

Assessment of midazolam and propofol sedative effect on the quality of upper gastrointestinal endoscope
Soltanpour N, Mirzaei V 5

Anatomy

Development of cajal cells in the duodenum of human embryo and fetus
Jovanovic M, Stojanov A, Majcan M 5

Some histological and morphological peculiarities of uterine tubes in human fetuses
Marchuk V, Piatnytska T, Tymchuk T 5

Morphometric and stereological analyzing of ganglion structures of myenterical nervous plexus in frontal wall of rectum and sigmoid colon
Andrijasevic V, Mandic P 6

Cajal-like cells in blood vessels of gastrointestinal tract of human fetus
Jovanovic M, Stojanov A, Jevtic M 6

Immunocytochemical study of NOS in the peri-aqueductal gray: Effects of neuropeptides Tyr-W-MIF-1 and Tyr-K-MIF-1 after immobilization stress in rats
Astasidi L, Bocheva A, Bozhilova-Pastirova A, Ovtsharoff V 6

Bankart repair implications - Anatomic and histologic study of the glenoid labrum
Bezna MC, Melinte PR 7

The development and formation of the vertebral column topography during the early Period of human onto-genesis
Kryvetskyi I, Kryvetskyi V 7

Centella asiatica leaf extract treatment in stress-induced rats: Enhancement of spatial memory and increasing of the thickness of hippocampal CA1 Pyramidal Layer
Sattwika PD, Sari DCR, Aswin S, Suharmi S 7

The analysis of the possibility of lowering the nerve tissue damage caused by ishaemic attacks on animal models, and its potential use on humans
Bojovic O, Zekovic A 8

Biochemistry

Parameters of oxidative stress in blood of patients with rheumatoid arthritis
Stojiljkovic M, Zdraljevic N, Randjelovic M 8

Nitric oxide and nitrosative stress as markers of endothelial dysfunction in juvenile type i diabetes
Stojanovic M, Nikolic N, Stankovic P 9

The impact of various therapeutic protocols on calcium and phosphorus metabolism in patients on hemodialysis
Randjelovic M, Zdraljevic N, Stojiljkovic M 9

TNFR type I and II polymorphism in lymphoproliferative diseases in Serbian population
Markovic DZ, Markovic-Zivkovic B, Stojanovic M, Jevtovic- Stoimenov T 10

Incorporation of ManNAc analogues into sialic acids depending on UDP-GlcNAc 2-epimerase/ManNAc kinase (GNE) expression: a semiquantitative study
Boehrsch V, Moeller H, Hackenberger CPR, Hinderlich S 10

Comparative in vitro study of cytoprotective effects of proanthocyanidins in two mitomycin C-treated cell lines
Tomic M, Litricin S, Stankov K, Kojic V 11

A functional role for Protein Phosphatase 2A in the mammalian circadian clock
Wendt S, Schlosser A, Wallach T, Maier B, Kramer A 11

The effect of knocking-down dexamethasone upregulated genes on phagocytic capacity of human macrophages
Kristof E K, Zahuczky G, Fesues L 11

The effect of folic acid therapy on the dynamic of rnase activity in human colostrum and mature milk
Nikolic N, Stojanovic M, Nikolic M, Kocic G 12

The effect of fruit and vegetable juices on acid-base statues of a body
Anashkina E, Alipov A, Astapovich E 12

Involvement of cGMP signalling pathway in the regulation of cell viability in the breast cancer cell lines, MCF-7 and MDA-MB468
Fallahian F, Karami-Tehrani F, Aghaei M 13

Diazoxide and Cyclosporine A effects on oxidative phosphorylation in mitochondria isolated from ischemic rat hearts
Mitica S, Mirica N, Duicu O, Lazarescu A, Raducan A, Fira-Mladinescu O, Muntean D 13

Biochemistry / Physiology – Poster

Markers of DNA fragmentation and oxidative stress in mononuclears of patients with acute myelogenous leukemia
Miljevic J, Rangelov T, Ciric K 13

In vitro testing of reductive activation and cytotoxicity of mitomycin C
Sklenarova Z 14

Leptin involvement on airways reactivity
Necula A, Cojocaru E, Petrescu BC, Dumitriu IL, Gurzu B, Slatineanu SM 14

Influence of autophagy on cell damage caused by UV radiation in L929 and B16 cell culture
Ivkovic I, Prica M, Ivetic J, Trajkovic V 14

Years-long piano playing and reaction times
Hlozan V, Ivetic V 15

The importance of research of lactate dehydrogenase isoenzyme profiles in diagnosig myeloblastic leukemia
Belic J, Bajin-Katic K 16

An electrophysiological approach to cranial neoplasms: The assesment of visual evoked potentials on patients with optic gliomas
Ser OS, Ustun B 16

Cardioprotective effects of magnesium orotate against ischemia-reperfusion injury: An experimental study in langendorff perfused rat hearts and isolated mitochondria
Luculescu MD, Mirica SN, Duicu O, Raducan A, Sturza A, Fira-Mladinescu O, Muntean D 16

Thiopyrano[2,3-d]thiazol-2-ones as precursors of new drugs. synthesis and antineoplastic activity of new derivatives
Atamanyuk V, Atamanyuk D 17

Comparison of optical techniques for measuring cortical blood flow in newborn piglets: The use of laser-speckle contrast analysis (LASCA)
Olah O, Zoléi D, Toth-Szuki V, Bari F, Smausz T, Domoki F . .17

Modulation of myocardial PPAR-alpha gene expression regulation with a high-calorie diet in a experimental model of heart failure
Vasques-Novoa F, Figueiredo-Pinto D, Lourenco AP, Leite-Moreira AF 18

Cardiovascular physiology misconceptions: effect of usual teaching on relief it
Tahere nejad MR, Jand A, Palizvan MR 18

Cardiology 1

Impact of Beta1-Adrenoceptor Polymorphism on Antiarrhythmic Action of Flecainide in Patients with Atrial Fibrillation
Nia A M, Zimmermann T, Caglayan E, Gassanov N, Dahlem K M, Ederer S, Aghajanzadeh D, Er F 19

A comparison of percutaneus coronary intervention utilizing first and second generation drug eluting stents in patients with acute coronary syndromes
Jelonek M, Buszman PP, Poplicha D, Skowron W, Krajciewicz A, Gorycki B, Prokopczuk J, Kondys M, Trznadel S, Buszman PE 19

Multiple stents implantation in infarct-related artery during primary PCI for STEMI
Skowronek J, Ranosz P, Siudak Z, Dudek D 19

Mathematical modeling of a rotary blood pump in a pulsatile flow environment
Pirbodaghi T, Vandenberghe S 20

Establishment of an individual human cell bank consisting of umbilical cord cells for the tissue engineering of heart valves under good manufacturing practice (GMP) conditions
Polchow B, Hetzer R, Lueders C 20

The influence of pre-hospital delay on early and late outcomes after percutaneous coronary intervention in patients with non-ST-segment elevation myocardial infarction
Duda D, Trela B, Rybnicka M, Buszman P 21

The prognostic significance of anemia development and drop in hemoglobin concentration and their relation with admission platelet parameters in patients after invasive treatment of acute myocardial infarction
Francuz P, Swoboda R 21

A registry of biodegradable versus durable polymer paclitaxel eluting stents
Orlik B, Kozlowski M, Pruski M, Buszman PP 22

A controlled reperfusion with intra coronary downstream abciximab and peripheral anticoagulation with bivalirudin in the porcine model of myocardial infarction
Buszman PP, Jelonek M, Orlik B, Trela B 22

A high-calorie diet improves survival and myocardial function, preventing cardiac cachexia and apoptosis in monocrotaline-induced pulmonary hypertension and heart failure
Oliveira-Pinto J, Figueiredo-Pinto D, Lourenso A P 22

Long axis m-mode Amplitude as a Predictor of Mortality in Medically Treated Patients with Congestive Heart Failure Due to Reduced Systolic Function
Ibrahimi P, Jashari F, Ahmeti A, Haliti E, Rexhepaj N, Elezi Sh, Jashari H, Bajraktari G 23

Mechanistic study of adriamycin induced apoptosis in endocardial and vascular endothelial cell lines
Nair V, Sathish KM, Kumar TRS, Kartha CC 23

Myocardial response stretch - the unexplored diastolic side of the Frank-Starling mechanism and Anrep effect and its modulation by ischemia
Ferreira RC, Neves JS, Ladeiras-Lopes R, Pintalhão M, Carvalho R, Leite-Moreira A 24

Cardiology 2

Level of NT-pro BNP and its prognostic significance in patients with acute coronary syndrome
Maksimovic I, Jonovic S, Zdravkovic V, Bankovic D 24

Myocardial tissue doppler velocities and functional properties of erythrocytes in different remodeling patterns of left ventricle
Mikhaliev K, Kolomoiets M, Chursina T, Tkach I, Kaushanska O, Kvasnytska 25

Involvement of KATP channel in protective role of Simvastatin on AV node during experimental AF in rabbits
Aminolsharieh S, Alizadeh F, Khori V 25
The role of endogenous nitric oxide on protective effects of Simvastatin on dynamic extracellular field potential of atrioventricular node(AV-Node) in isolated rabbit model of experimental atrial fibrillation(AF)
Alizadeh F, Aminosharie N S, Khori V 25

Comparative analysis of radiofrequency and cryo- energy destructive impact to myocardium
Peckauskas A, Rackauskas A, Mickevicius T, Veikutis V . . .26

Construction of a new bioreactor system combining dynamic cell seeding and in vitro conditioning for tissue engineering of heart valves: first standards in cardiovascular tissue engineering
Reichardt A, Hetzer R, Lueders C 26

Lack of electrophysiological remodeling of atrioventricular-node in isolated perfused cirrhotic rat during simulated atrial fibrilation
Moheimani H 27

Post-operative vascular models using simulation based medical planning system
Totorean AF, Vinatu VF, Bernad SI, Susan-Resigna RF 27

Cancer cachexia induced heart failure
Tschirner A, Springer J, Palus S, Grzesiak A, Kaschina E, Argiles J, von Haehling S, Anker SD 28

Prognostic value of the Selvester Score in patients with the acute coronary syndrome and low left ventricular ejection fraction after the invasive myocardial revascularization
Konkolewska M, Buszman P, Janas A, Czarnecka K 28

Does Postconditioning Potentiate Ischemic Preconditoning in Rat Hearts?
Buja A, Ordodi V, Gheorghiu G, Hentia C, David A, Mirica N, Duicu O, Raducan A, Dobreanu D, Muntean D . .28

Micronutrient Status in Coronary Artery Disease and Diabetes mellitus
Kaur G, Kalra K, Prakash A, Gurtoo A, Toteja GS 29

Cardiology – Poster

NT-proBNP and troponin levels and significance of their correlation in patients with acute myocardial infarction: STEMI vs. NSTEMI
Jonovic S, Mladenovic V, Zdravkovic V 29

Does haemoglobin level on admission influence short-term and 6-month mortality in patients treated with percutaneous coronary intervention for Non-ST elevation myocardial infarction?
Jablonska D, Gierlaszynska K, Stolarz M 30

Carvedilol influence on the ultrastructure of myocardium of spontaneous hypertensive rats
Zagorodnyy M, Kuftireva T, Stechenko L, Svintsitskiy A . . .30

Assessment of right ventricular function in patients with permanent septal pacing versus apical right ventricular pacing
Nouriankafshgari S, Amjad G, Abdous N, Nikmanesh P . . .30

Three dimensional echocardiography in surgical management of mitral regurgitation
Thakur N, Preunca B, Parikh H, Mosteoru S, Ilie R, Bobilca V, Ionac A 31

Impact of drug eluting stents (DES) implantation on long-term clinical outcome in patients treated with primary PCI for STEMI
Ranosz P, Skowronek J, Siudak Z, Dudek D 31

Cardiovascular causes of death in an east african country: Autopsy study
Ogeng'o JA, Maina PG, Olabu BO 32
Transradial Percutaneous Coronary Intervention: Consummation and safety in Pakistani population
Valliani A, Khan M, Ahmed B 32

Influence of selected laboratory and echocardiographic parameters on the effectiveness of cardioversion of atrial fibrillation
Oleszak T, Sabela J 32

The difference of ankle-brachial index between smoker and non smoker
Sumirat R, Setiabudi E, Pinandojo D 33

Does coronary artery disease (CAD) in history influence prognosis in patients with acute myocardial infarction treated by PCI?
Halak T, Kurek A, Prudel B, Okoniewski M 33

Can clinical TIMI risk score predict angiography in patients with ST-elevation myocardial infarction?
Golabchi A, Sadeghi M, Sanei H, Akhbari MR 33

The additive value of torsion to global longitudinal left ventricular strain in patients with systolic dysfunction. A pilot study
Bobilca V, Thakur N, Parikh H, Mosteoru S, Preunca B, Ilie R, Mornos C 34

Lipid profile and iron content in serum of rabbits with experimental atherosclerosis
Colic J, Sljivancanin T, Vucevic D 34

Hemodynamic parameter of the anastomosis model for the coronary artery bypass
Vinatu V F, Totorean A F, Bernad S I, Susan-Resiga R F 35

Dentistry – Poster

Correlation between ischemic stroke and teeth
Farkashdi SH Yakovlev M, Ibrohimov SH Prosvetov R, Milkinsky M, Sokov P, Sokov E 35

The effect of bovine demineralized bone matrix on regeneration of rabbit parietal bone defect
Aghazadeh S, Azimi H 36

About some precancerous forms of oral mucosa
Kuritsyna M 36

The application of low level laser for managing oral mucositis
Chiniforush N, Shahabi S, Johari M, Bassir S H 37

The determination of the optimal dose of triamcinolone acetonide injection in treatment of temporomandibular joint arthritis in rat
Peimani A, Foroozia M 37

A comparisson of the efficacy of potassium nitrate and gluma desensitizer in the reduction of hypersensitivity in teeth with full-crown preparations
Eyvaz ziaee A, Jalalian E 37

Comparative evaluation of the oral cavity state and Candida occurence in Polish and foreign dentistry students with no systemic diseases
Krawiecka E, Jankowski M, Krýs J, Lackowska M, Piotrowska I, Smoczyńska-Marczak M 38

Comparing the histopathologic outcomes of transplanting a new deproteined bovine bone preparation against Bio-Oss for parietal bone defects in rabbits
Alai AAC, Riazi H, Shalileh K, Azimi Lisar HR 38

Kinetic and microbiological approach to the problems of tooth decay
Shestopalov M, Savenok A 38
Efficiency of low strenght lasers in treatment of mouth burning syndrome
Vostinic V, Garic N, Spasic M 39

Dermatology

Clinical forms and epidermiological features of rosacea
Thurkkaram I 39

Analysis of sentinel lymph node biopsy results in malignant melanoma (2002-2006)
Kurgyis Zs, Varga E, Korom I, Kemeny L, Olah J 40

The early diagnosis of skin malignant melanoma
Dimitrijevic S, Bojana P, Tijana J 40

Ultrasonographic assessment of the skin ageing process
Crisan D, Crisan M 40

Epithelial-mesenchymal interaction in vitro
Szabo P 41

Validity assessment of clinical diagnosis by store and forward method of teledermatology
Andjelkovic M, Apostolovic B 41

Platelet-rich plasma therapy used in/for dermal abrasions: Case report
Stevanovic A, Sarenac M, Markovic N 42

Effects of isotretinoin treatment in patients with nodulocystic acne
Lalosevic J, Latinovic J, Skiljevic D 42

Effects of oral metronidazole in treatment of lichen planus
Khazanehdari S , Behzadi AH , Barbati ME 42

Actinic keratosis as a precancerous condition of skin
Trofymets D 42

Endocrinology / Gastroenterology

Identification and functional analysis of target genes of the metastasis-inducing gene MACC1
Schmid F, Smith J, Wang Q, Andrade M, Huska M, Schlag P M, Stein U 43

Immunohistochemical demonstration of peptide hormones in endometrial adenocarcinomas
Jancic N, Rancic I, Bojanic N 44

Interferon-gamma with interferon-alpha and ribavirin for hepatitis C non-responders
Raza S, Abbas Z, Jafri W, Hameed S 44

Usefulness of salivary cortisol measurements in the diagnostics of adrenal insufficiency
Kriks A, Kaczmarska D 44

Thyroid antibodies in patients with diabetes mellitus type 1
Stojanovic M, Najdanovic J 45

Diabetic gastropathy: morphologic and functional changes of the stomach, peculiarities of treatment
Nechipay Z, Khukhlina O 45

HPA axis alterations on ADN and its receptors expression in adrenal gland and SAT
Zemleduch T, Paschke L 46

Cardio-vascular alterations in patients with liver cirrhosis
Prysyazhnyuk V, Prysyazhnyuk I, Gyluk R 46

The axon guidance molecule Slit2 regulates the motility of neuroendocrine cancer cells
Göhrig A, Schröder M, Welzel M, Detjen K, Hilfenhaus G, Wiedenmann B, Fischer C 47

The level of TGF-β1 and TIMP-1 in patients with liver cirrhosis
Shapoval O 47

Expression of proinflammatory factors in subcutaneous adipose tissue and peripheral monocytes of patients with obesity and type 2 diabetes mellitus: The effect of very-low-calorie-diet
Mraz M, Lacinova Z, Drapalova J, Haluzikova D, Matoulek M, Horinek A, Trachta P, Kavalkova P, Svacina S, Haluzik M 48

Hormonal and metabolics characteristics of adrenal incidentalomas
Nicolic A 48

ENT / Dentistry

The restoration of endodontically treated teeth by fiber-glass reinforced composite posts and cast posts and core
Mladenovic I 49

Investigation of the composition of microbiological flora according to depth of the periodontal pocket of diabetic patients type I-II
Minic I, Milojevic I, Kesic L 49

The influence of anthropometric characteristics of children to eruption time of the first permanent molars
Nikolic M 50

A pilot study to evaluate feasibility, performance and validity of an internet-based audiovisual disability test in healthy volunteer children (aged 4-11 years)
Beckett K 50

Quantification of Bcl-2-immunopositive cells in different types of chronic tonsillitis
Stankovic P 50

Universal newborn hearing screening in Clinical Center Nis
Stojanov A, Arandjelovic J, Zabar K, Jovanovic M, Bojanovic M 51

Evaluation of nitric oxide synthesis and oxidative stress in vocal polyps and nodules
Cosgarea I, Parvu E, Chirila M 51

Effect of diet control in the management of food-induced allergic rhinitis
Liang ZC, Kok YO, Yeoh KH, Wang DY 51

Clinical application of tissue-engineered replacement for ear ossicles: PORP & TORP-shaped (hydroxyapatite based scaffolds) cultured with human mesenchymal stromal cells
Mojtahed M, Mojtahed A, Mahboubi H, Saedi B, Karimi A, Soleimani M 52

Evaluatin of the morphologic and visual indices of the mandibular cortex to compare with subtle measurement of the mandibular cortex on panoramic radiographs to identify postmenopausal women with low bone mineral density
Sayahpour S, Shokri Mojdehi M, Tofangchiha M 52

ENT / Dentistry – Poster

Correlation between teeth development and weight of human fetuses
Pjevac S, Lalosevic D 52

Screening of low risk populations of oral premalignant and cancer with VELscope
Rai B, Kaur J, Anand SC 53

Analysis of water sorption of dental luting cements
Nedetjkovic S, Darko G 53

Facial features and adolescence. Facial morphometry of children and juvenile
Lyko D Kruczek A, Urbaniak M, Zielinska M, Dyduch A, Wojtas A 53

Analysing of enamel microhardness after application of fluoride containing and fluoride free bleaching agents
Garic N, Vostinic V, Spasic M 53

Epidemiology / Social Medicine – Poster

Knowledge and skill of last-year-medical-students on cervical cancer prevention
Nasution K, Brohet K, Kekalih A, Budiningsih S, Ocviyanti D 54

Influence of socio-economic status on cancer risk factors and prevention patterns in Pomerania region
Budynko L, Kleister A, Mieszkowski M, Klasa L, Sadowska A, Drucis K 54

Parental knowledge about children allergy - screening questionnaire
Kaczmarska D, Chudowolska M 55

Pattern of physical activity and its differences among school girls and boys in Pakistan
Khawaja S, Khoja AA, otwani K, Khuwaj AK 55

The quality of death certificates
Gjeorgjievski M, Gjorgova S 55

Lifestyle variables and stressful life events as breast cancer risk factors
Jovanovic T 56

Knowledge and attitudes towards pain and the use of opioid analgesics among a portuguese university hospital centre's health care providers
Cardoso AL, Campelos J, Costa N, Gama C, Martins J, Moreira S, Ribeiro N, Silva N, Sotto Mayor J, Tavares S, Valongo A Dores G 56

Clinical outcome of lung cancer in elderly patients in Belarus
Petrovitch O, Averkin YU 57

Pharmacoepidemiological and pharmacoeconomical aspects of treatment of arterial hypertension in patients with type II diabetes mellitus in outpatient and inpatient department
Anosov I, Gushina Y 57

A/H1N1 influenza - facts, opinions, attitudes and knowledge. Research and evaluation
Gajzlerska W, Urbanski B, Majewski M, Surowiecka A, Andrasik M 58

From myalgia to cancer: a case of neuroendocrine tumor and the range of differential diagnosis for back pain
Roach EC, Gezgen G, Atilla Uslu A 58

The effects of treatment on sexual life of breast cancer patients
Jurca M, Besic N 58

Gastroenterology

MACC1 induces colon cancer metastasis via controlling the HGF/Met pathway: Impact of Met mutations
Klockmeier K, Schmid F, Schlag PM, Stein U 59

The clinical application of the test on numerical sequences in the therapy of patients with hepatic and hypertensive encephalopathy
Baltabayev A, Ernazarov U 59

Clinicopathological characteristics of colonic carcinoma in relation to localization and histologic type
Skakic A, Djordjevic I, Mitic A, Tatic M 60

Is eradication of helicobacter pylori sufficient for stomach cancer prophylaxis in peptic ulcer disease?
Mazur D, Semen K 60

Prevalence of Helicobacter pylori in patients with Gastric Precancerous lesions in Ilam, Iran
Abdolkarimi A, Alizadeh S, Cheraghi M, Soheili F, Yousefi A, Ehsanbakhsh S, Soroush S, Taherikalani M, Jaafarihaidarlo A 61

Expression of bcl-2 oncoprotein in patients with alcoholic liver cirrhosis after autologous stem cell transplantation
Burganova G, Abdulkhakov S, Gumerova A, Gazizov I, Titova T, Odintcova A, Kiassov A 61

Parallel analysis of endoscopic findings and patho-histological findings at chronic gastritis
Hulali M, Vlajankov A, Popovic D, Pesic T, Hadnadjev L . . .61

Serum leptin level in patients with gastric ulcer
Assefi M, Mina M, Behzad S, Saeed Gh, Lida M 62

The effect of human umbilical cord blood stem cells on fibrosis in mice
Elshaarawy O, Joe S, Mohamed F 62

Apoptosis rate after selective thermolysis of hepatocarcinoma cell lines treated with bovine serum albumin conjugated carbon nanotubes
Iorga O, Fustos T, Cozar O, Mocan L, Iancu C 62

Comparison of abdominal paracentesis and diuretics in terms of overall efficiency in ascites therapy
Mavija S, Vukadinovic G, Kremenovic M 63

Low dose ribavirin for treatment of thalassemia major patients with HCV infection; New indications for combination therapy
Tabatabaei SV, Mahboobi N, Khazane Dari S 63

The value of video-endoscopic capsule in the small bowel Crohn`s disease diagnosis
Navala L I, Nechita A N, Muresan E M, Nedelcut D-S 64

Gastroenterology / Endocrinology – Poster

Non-alcoholic fat liver disease in obese and prediabetic patients
Petrovic H, Stojanovic M, Stamenkovic A, Sreckovic-Dimitrijevic V 64

The role of history, physical examination and the evaluation of fecal calprotectin in the diagnosis of irritable bowel syndrome
Nakov R, Tsekova R, Nakov V 64

Long term insulin therapy in patients with type 2 Diabetes Mellitus induces an important weight gain
Khaja Roman S, Joseph DJ 65

In vivo molecular imaging of vegf in gastrointestinal cancer using confocal laser endomicroscopy
Foersch S, Kiesslich R, Waldner MJ, Galle PR, Neurath MF, Goetz M 65

TPO antibodies during graves-basedow disease therapy
Ostojic M, Romana M 66

Analysis of the facts that have influence on the eradication of Helicobacter pylori infection
Stulic M, Stefanovic M, Suvajac J, Culafic DJ 66

Differentiation of benign from malignant induced ascites by measuring gall bladder wall thickness
Behmagham E, Mohamadi A, Mohammadifar M, Behrozian R, Sadredini M, Ghasemi-rad M, Mirzaie A 67

Experimental approach of pancreatic cancer cell lines using biofunctionalized single wall carbon nanotubes
Fustos T, Iorga O, Cozar O, Mocan L, Iancu C 67

GATA6 regulates colonic cell proliferation and differentiation
Tran LMD, Beuling E, Krasinski SD 67

Influence of intracerebroventricular application of ghrelin on inflammation in blood and heart in the rat models of obesity and malnutrition
Prica M, Ivkovic I, Prijovic B, Stojanovic M, Trajkovic V . .68

Correlation of thyroid autoantibodies and sonographical image in pregnant and non-pregnant women with history of spontaneous abortion
Bartakova J, Jiskra J, Potlukova E 68

Role of yoga-asanas and pranayama on BMI in type II diabetes
Munish K, Sachdeva M, Kyizom T, Singh K P, Singh S 69

Assessment of gastrointestinal disorders in renal transplantation reciepients
Hassani R,Bahrami A,Nejat A 69

Genetics

Y chromosome microdeletions in infertile men with azoospermia
Radakovic D, Repac S 69

Synthetic phytoestrogens and the native flax plant extract from Linum usitatissimum effect human bone cells in vitro
Buegel V, Mueller P, Abarzua S, Nebe B 70

Selecting of the research object for experimental models of cerebrovascular diseases in terms of bioinformatics
Chubukova T 70

BCL3 gene importance in non-syndromal orofacial clefts' development
Martinkevich O, Prane I, Krumina A, Akota I, Barkane B, Klovins J, Lace B 71

Games: A new tool for genomic annotation of next generation sequencing data
Sana M E, Iascone M, Marchetti D, Galasso M, Volinia S . .71

G20210A protrombin gene polymorphism in women with spontaneous miscarriage
Stojkovic T 71

New evidence for the fetal insulin hypothesis: fetal angiotensinogen M235T polymorphism is associated with birth weight and elevated fetal total glycated hemoglobin at birth
Schlemm L, Haumann HM, Ziegner M, Stirnberg B, Sohn A, Alter M, Pfab T, Kalache KD, Guthmann F, Hocher B 72

The effect of folic acid supplementation on the expression of genes involved in pluripotency
Dormandy L, Burdge G, Lillycrop K 72

Association between TP53 gene ARG72PRO polymorphism and gastric cancer in Ardabil province, Iran
Akhavan H, Barzegar A, Nickmanesh M, Yazdanbod A, Mazani M, Pourfarzi F, Didevar R, Nobakht H, Bashiri J, Malekzadeh R, Hosseini-Asl SS 73

Study of extracellular DNA associated with erythrocytes in healthy peoples and with chronic pyelonephritis
Kapoor R , Tankibayeva NU 73

Apert syndrome
Onofrei A, Onutu R 73

Gynaecology / Obstetrics

Use of hormonal contraception in italian university students
Grandi G, Generali M, Volpe A, Cagnacci A 74

Synchronous primary carcinomas of the endometrium and ovary
Djordjevic I, Skakic A, Misic J 74

Fetal blood flow in the presence of the IUGR - three dimensional assessment using CFD
Brisan C, Albulescu VI, Bernad SI, Bernad ES 74

Role of sFas-mediated apoptosis by hyperplasia endometrium in the combination with android obesity
Gradil O, Kachaylo I, Muryzina I 75

Pro-apoptotic B-cell lymphoma oncoprotein 2 -associated X protein expression changes in endometrial carcinoma
Sisovsky V, Palkovic M, Kopani M, Gasparovicova N, Hudecova I, Danihel L 75

Development of low grade cervical lesions in fonction of age and HPV(human papillomavirus) status, utility of early Pap test
Remesova T 76

Serum adenosine deaminase activity in gestational diabetes mellitus and normal pregnancy
Mokhtari M, Hashemi M, Yaghmaei M, Molashahi F, Shikhzadeh A, Niazi A, Ghavami S 76

The local treatment of human papillomavirus associated cervix uteri diseases with celandine lead to decrease infection recurrence rate
Kalashnikov A S, Voronkova O V, Emelianov V U 77

Hepcidin levels and characteristics of iron homeostasis in preeclampsia
Toldi G, Stenczer B 77

The usefulness of anti-mullerian hormone in in-vitro fertilisation therapy
Ellwood A 77

Helicobacter pylori infection and its association with implantation rates and early pregnancy loss after intracytoplasmic sperm injection
Hajishafiha M, Ghasemi-rad M, Memari A, Naji S, Mladkova N, Ghareaghaji R, Saeedi V 78

Role of fetal magnetic resonance imaging in antenatal cerebral malformations diagnosis
Ciocanea CI, Delorme B, El Rai S, Boussion F, Loisel D . .78

In Utero - fetoscopic - minimal invasive management of gastroschisis. A feasibility study in sheep
Paetzel J, Krebs T, Schroeder B, Andreas T, Hecher K, Bergholz R 79

Gynaecology – Poster

Optimization and treatment of patients with external forms of genital endometriosis as the cause of infertility
Davidyan LU, Ponomarev VV 79

Profile of female genital tract tumours at Bahawalpur-Pakistan
Alam MI, Ullah E, Abbas R, Rasool BMZ 80

Quality of life in women with urinary incontinence
Vujanic T, Vlajankov A, Mladenovic-Segedi L 80
The advent of pcos in young epileptics on antiepileptic drug therapy
Ohri S, Kedia R 80

Diagnostic reliability of biopsy in the early discovery of precancerous and cancerous lesions on the cervix
Dikic M 81

Ovarian reserve in smoking patients
Mitrovic A, Mihailovic A, Babic M, Garalejic E 81

Polymorphism A2 in platelet glycoprotein IIb/IIIa among patients with pulmonary embolism and deep venous thrombosis
Sachdeva M, Ivanov P, Komsa-Penkova R, Ivanov Y, Beshev I 81

A longitudinal audit of the treatment of (pre-) cancerous lesions of the cervix
Knegt Y 82

The pathology of the umbilical cord in fetal distress
Albulescu VI, Brisan C, Bernad ES, Bernad SI, Muntean I .82

The dynamics of HPV infection at pregnant and latelyconfined women
Marinas M, Marinas A, Tanase F, Enache A, Vilcea A 83

The association between gestational diabetes mellitus and body mass index in pregnancy
Zekovic A, Bojovic O 83

Risk factors for placental abruption in singleton pregnancies
Janjic T, Ivanisevic I, Stankovic I, Isakovic A, Gusic N 83

Haematology / Oncology 1

Evaluating the Role of Sirtuins in Breast Cancer
Curle J, McGlynn LM, Zino S, Edwards J, Shiels PG 84

The role of mTOR activation in apoptosis in myeloid cell lines
Lojek M, Sajjad EA, Hutnik L, Wlodarski P, Mlynarczuk-Bialy I 84

Loss of therapy-induced senescence in myc-driven lymphomas compromises treatment outcome in vivo
Doerr JR, Yu Y, Loddenkemper C, Keller U, Buck AK, Doerken B, Schmitt CA 85

Gene expression analysis of p53 target genes in cellular senescence
Gerhardt A, Doerr J, Lee S, Doerken B, Schmitt CA 85

Prognostic relevance of dysregulations of mitochondrial apoptosis and mTOR signaling in acute myeloid leukemia
Egervari G, Hampel M, Bernhard J, Daniel PT 86

MDR1 expression serves as a pharmacogenetic marker for the prediction of molecular, cytogenetic and clinical outcome on 2nd line nilotinib therapy in imatinib-resistant CML patients
Agrawal M, Erben P, Hanfstein B, Popa J, Hofmann WK, Leitner A, Hochhaus A, Müller MC 86

Status of estrogen, progesterone and HER-2/neu receptors in breast cancer
Lumturije G, Kushtrim SH, Rame A, Adriatik K, Esat B, Ardita K 87

Targeted supression of leukemia-related oncogene c-kit by RNA-interference
Nikitenko NA, Rulina AV, Spirin PV, Orlova NN, Stocking C, Prassolov VS 87

Hereditary antithrombin III deficiency: correlation between genetic analysis and thrombotic tendency
Selmeczi A 87

Low doses of ionizing radiation promote tumor growth and metastasis by enhancing angiogenesis
Vala I S, Nunes R J, Rocha A, Rino J, Rueegg C, Grillo I M, Mareel M, Santos S C R 88

Polymorphisms of GST-genes in patients with diffuse large B-cell lymphoma
Booij H, Oliveira-Souza P, Bydlowski S, Levy P, Maciel F, Pereira J 88

Haematology / Oncology 2

Driving partial to fully epithelial mesenchymal transition: Drug resistance comes to play
Yeo YH Yu MC, Huang MC, Wang JK 89

The functional link between Autophagy And Senescence during oncogene-induced stress
Reimann M, Maroldt J, Rosenfeldt M, Loddenkemper C, Schmitt CA 89

Characterisation of the interactome of PAX3/FKHR
Heinz C B, Wachtel M, Schaefer B W 90

Reduction of erythrocyte functionality under radiation therapy
Tishko T, Titar V 90

Influence of AKT1, AKT2 and FRAP1 polymorphisms on response and survival in head and neck cancer (SCCHN) patients treated with Docetaxel and Cetuximab
Pfisterer K, Fusi A, Klinghammer K, Knoedler M, Nonnenmacher A, Keilholz U 90

Effect of family tumor history on survival of patients with triple negative breast cancer
Ozgan AY, Turna ZH, Biricik FS, Ozturk MA, Tural D, Ozgurluoglu M, Mandel N, Serdengecti S 91

The presence of cavity in lunc cancer as a prognostic indicator
Pouli D, Pappa Irene, Gkiozos I 91

Effect of RANK-RANKL signalling pathway on MMP1, OPG and PTHrP gene expression of breast and prostate cancer cell lines in vitro
Ribeiro S, Casimiro S, Costa L, Moniz E 91

Some hematological profile of HIV seropositive asymptomatic patients in Owerri West, Imo state
Alagboso C, Adepoju P 92

The Involvement of hepatitis viruses on ethiopathology of lymphoproliferative disorders - A retrospective analysis
Ion IM, Delcea C, Nistor SI, Iliescu MC, Ciufu C, Vladareanu AM 92

Retinoic acid receptor beta2 hypermethylation in fibroadenoma and breast carcinoma
Erlangga Z, Krisna H, Dewajani P 93

A preliminary study of paraoxonase i gene polymorphisms with the risk and severity of non-small cell lung cancer (NSCLC) in Turkish patients
Ahsam F, Mehmet T, Onur R, Asuman S 93

Haematology / Oncology – Poster

Systematic bilateral lymphadenectomy patients with 3a-3b stage non-small-cells lung cancer
Alekseenko TS, Porhanov VA, Polyakov IS, Porhanov VA . .94

Immunohistochemical assessment and clinical characterization of acute myeloid leukemia bearing cytoplasmic nucleophosmin (NPMc+)
Bedekovics J, Mehes G 94

Morphological and immunohistochemical profiles of nodal B cell non-Hodgkin lymphomas
Cosma ML, Nicolae A, Aschie M, Poinareanu I, Nicolau AA, Mitroi AF, Dobre A, Iliesiu A, Gheorghe E 94

Imatib in chronic myelogenous leukemia: Hematologic and cytogenetic responses
Zarei M, Razavi SM 95

Inhibitory effects of BEZ-235 and LCL161 on glioblastoma multiforme stem cell proliferation
Veldhuijzen van Zanten S 95

The effect of lycopene on the growth of fibrosarcoma cells in Balb/c mice
Azizi E, Shirzad H, Kiyani M, Sadeghi Z 96

Pain following breast cancer surgery
Zupan A, Besic N 96

Clinical, biochemical and hematological characteristics as a parameter in predicting the average survival rate and disease severity in patients with Mantle cell non-Hodgkin lymphoma
Milosevic B, Naric M, Todorovic M 97

Hyperthermic intraperitoneal chemiotheraphy (HIPEC) - which patients without signs of peritoneal dissemination should be considered to be treated with this method?
Dobosz L, Sadowska A, Gornowicz K, Klasa L Drucis K . . .97

Castleman' disease - a case of localised form with an excellent outcome with surgical resection
Beleva E, Gryklanov V, Babacheva V, Goranova-Marinova V 97

Detection of RASSF1A hypermethylation of fibroadenoma mammae and breast cancer
Gulo GS 98

External beam radiation therapy with hormone therapy in the treatment of prostate cancer
Georgievska B, Jordanovski D, Jovanoski, A 98

The evaluation of survival and proliferation of lymphocytes in autologous mixed lymphocyte reaction with dendritic cells. The comparison of incorporation of 3H-thymidine and differential gating
Vesela R, Dolezalova L, Pytlik R, Rychtrmocova H, Mareckova H, Trneny M 99

Immunology

Upregulation of vasoactive intestinal polypeptide and synaptophysin expression in stellate ganglia of children with thymus hyperplasia
Sokal A, Rogov Yr, Kuehnel W, Roudenok V 99

Pull down and expansion of naive CMV-specific T-cells covering multiple HLA class I alleles
Raz Y, Hombrink P, Von dem Borne PA, Falkenburg JHF, Heemskerk MHM 99

Antithymocyte globulin (ATG) modulates the humoral immune response via direct action on B cells
Klaus P, Rasche C, Heine G, Worm M 100

Regulation of CD8+CD28- suppressor T cells with toll-like receptors
Bilgin H, Tulunay A, Elbasi M O, Eksioglu-Demiralp E . .100

sgp130Fc inhibits IL-6 trans-signaling depending on local sIL-6R levels and IL6-receptor expression
Thaiss W M, Rose-John S, Scheller J 101

Novel protocol for prime-boost immunization: Combination of salmonella T3SS-mediated antigen delivery and CpG oligonucleotide treatment leads to superior protective immunity
Berchtold C, Panthel K, Jellbauer S, Koehn B, Roider E, Partilla M, Bourquin C, Endres S, Ruessmann H 101

Genetically engineered T cells redirected to target Her2/neu expressing tumor cells and its possible implications for adoptive immunotherapy in ovarian cancer
Kelderman S, Lanitis E, Powell D 101

The features of immunopotentiating acupuncture component
Krotkova O, Ivanova O 102

Induction and function of IL-10 in natural CD4+CD25 - regulatory T-cells (Treg)
Koehler L, Brandenburg S, Janke M, Rutz S, Scheffold A 103

The circadian clock in macrophages
Mazuch J, Eom G, Kramer A, Maier B 103

Factor V Leiden and prothrombin gene mutation G202100A in early pregnancy loss
Ivanov P, Komsa-Penkova R, Konova E, Tanchev TC, Taaran Cariappa Ballachanda Subbaiah 103

IBone defect healing induced by mesenchymal stem cells
Suresh M, FBojin F, Anghel S, Gruia A, Ordodi VL, Tatu C 104

Infectious Diseases

Novel drug targets for mycobacteria
Hasan Z Parish T, Personne Y 104

Results of early antiretroviral therapy and mortality among HIV-infected persons
Krasnov M, Cherkasov A, Kojevnikova I, Velykodanov G 105

Clinical cases of rabies. the re-emerging danger in a modern world
Wakabi K, Zaidan H, Krasnov M 105

Radiation of light-emitting diode photon matrices in complex therapy of community - acquired pneumonia complicating influenza A (H1N1) California - 2009
AlAali A, Tooq S 105

Influenza A (H1N1) California - 2009, community acquired pneumonia and acute respiratory distress syndrome: analysis clinical and morphological research
Abdulrasool M, Radhi M, Gradil G 106

Clinical characteristics and flow of treatment in the group of patients with infections of the skin and soft tissue (erysipelas and cellulitis)
Nikolic Z, Perisic M, Colic 107

Possibility of immunological reconstitution in HIV+ patients who develop virological-immunological dissociation while receiving HAART
Kusic J, Jevtovic D J 107

Indicators of lipid metabolism and their prognostic importance in patients suffering from acute viral hepatitis B and its relapses
Patyey P, Vinokurova O 107

Potential role of CD133/CD117 positive stem cells in liver fibrosis caused by schistosoma Mansoni infections
Verhoeven S, Draelants C, Chatterjee S, Van Marck E, Pauwels P, Ponsaerts P 108

The assessment histological lesions in liver by FIBROACTI TESTS in patients with Chronic Hepatitis C genotypes 1b with normal or abnormal ALT
Koltsova L, Bondar A 108

The association of hypertension and Chlamydia pneumoniae, Helicobacter pylori, cytomegalovirus and herpes simplex virus type 1: The Persian Gulf Healthy Heart Study
Bolkheir A, Nabipour I, Vahdat K 109

Infectious Diseases – Poster

Seroepidemiological study on Canine Visceral Leishmaniasis and determination of parasite in Yasuj district, south of Iran during 2009-2010
Barati V, Moshfe A , Mohebali M, Afshoon E, Abidi H, Joukar S, Zarei Z, Akhoundi B 110

Risk factors for extensively drug-resistant tuberculosis: A systematic review
Lima BF, Tavares M, Barros H 110

Resistance to penicillin of streptococcus pneumoniae and its influence to the treatment, course and outcome of the purulent meningitis
Dumic I, Dulovic O 110

Influence of bifiform on microflora of the large intestinal cavity in patients with lacunar tonsillitis
Marusyk H, Moskaliuk V, Sorokhan V, Jakovets K 111

Some clinical, epidemiological and laboratory aspects in patients with botulism after 40 years in Moldova
Ciudin T, Ciudin V 111

Conservative treatment of spinal infections - Progress and results
Sipovac D, Subic M, Vlajankov A, Sevic S 112

Study of bacterial infection of hydatid cysts in slaughtered animals of west of Iran, Hamadan, and, bacterial exotoxins effect on cyst sterilization in vitro
Fallah N, Fallah M, Kavand A, Yousefi Mashouf R 112

Quality of life before and after hepatitis C antiviral therapy in hemophilia and thalassemic patients
Teimoori M, Alavian SM, Hoseinzade A, Behnava B, Keshvari M Noorani M, Tavalaei A Bagheri Lankarani K, Foster GR 113

Fever of unknown origin
Dabbas D, Matavulj, Stevanovic G 113

Sex and HPV- do I know the possible prevention of HPV infection? - The assessment of knowledge about HPV infection and vaccination among students
Sztylc J, Kowalik A, Morcinek A, Kasperska-Zajac A 114

I am not at risk of HPV infection … or maybe I am? – the assessment of knowledge about HPV infection and related with it cervical cancer among students
Kowalik A, Sztylc J , Morcinek A, Kasperska-Zajac A 114

The correlation of microbiological, serological tests on brucellosis with clinical picture and the success of therapy
Obradovic J, Dizdarevic I 114

Study on arthritis with reference to lymphatic filariasis
Garg A, Das BK 115

Evaluation of the sensitivity of burn isolates of Pseudomonas aeruginosa to Cefepime
Babazadeh H , Hosseini Jazani N, Zartoshti M, Sabahi Z . .115

Microbiology and Hygiene / Infectious Disease

A study of antimicrobial effects from the smoke of burnt peganum harmala seeds in delivery room
Mohammadi Z, Sanagoo A, Jouybari LM , Seyfi A, Qaemi E 116

Influence municipal the occurrence of psychological noise interference
Djurovic S, Vasiljevic M 116

Bacterial species isolated from medical device and their antibiotic susceptibility
Kryeziu M, Rrahmani F, Kryeziu R 117

Lipid profile and cardiovascular risk of hiv positive patients on antiretroviral therapy
Novakovic M 118

Factors associated with helicobacter pylori infection among inpatients at a tertiary care hospital in the largest city of Pakistan
Ahmed B, Khan F, Valliani A, Khuwaja AK 118

To assess the sero-prevalence of viral Hepatitis B, C and HIV in multi-transfused Thalassemia major patients of Civil Hospital, Karachi, Pakistan
Ullah F, Riaz H, Aziz S, Khan MU, Ejaz A, Hasan M, Pervaiz R, Moiz F, Riaz T 119

Molecular characterization of CTX-M-type extended-spectrum [beta]-lactamases of escherichia coli isolated from a Portuguese university hospital
Frois M, Silva, G 119

Bactericidal activity of argentums nanoparticles against antibioticresistant and susceptible strains
Baitsova N, Tapalski D, Kazlova A, Yarmolenko M, Rogachev A 119

Studying the relationship between previous Chlamydia pneumonia infection with atherosclerotic coronary artery disease
Kazemitabrizi N, Khazanehdari S, Darvishi M, Barbati ME, Zareiy S, Alizade K 120

Study of microbes contaminating computers in hospitals and the effectiveness of spirit in their disinfection to prevent nosocomial infection
Anand T, Asima B 120

Types of Oral Candidial species and influence of ART treatment over it in HIV+ve patients in a Tropical country
Khare A, Adchitre HR 121

Analysis of phosphodiesterase-12- A potential new target for therapeutic inhibtion of hepatitis C virus replication
Sri-Ganeshan M, Sadiq F, Thursz M 121

Nephrology / Urology

Cryotherapy for prostate carcinoma
Ivan C, Suciu M, Hondola R, Grad L, Keresztes A, Sulea C 121

A report on metabolic evaluation of 153 children with urolithiasis
Fallahzadeh MK Fallahzadeh MH, Sedighi V, Basiratnia M 122

The role of gstm1 and gstt1 polymorphism in patients with renal cell carcinoma
Coric V, Suvakov S 122
Short-term stimulation of the thiazide-sensitive Na+-Cl- cotransporter by vasopressin involves phosphorylation and membrane translocation
Mutig K, Saritas S Uchida S, Kahl T, Borowski T, Paliege A, Boehlick A, Bleich M, Shan Q, Bachmann S . . .122

Anti-diabetic, Hypolipidemic and Crosslink breaking properties of ginger (Zingiber Officinale) in streptozocin-induced diabetic rats
Omipidan SA, Nmorsi G, Eze KA 123

The correlation between erectile dysfunction and LUTS
Petrut M-C, Popa M-I, Porav-Hodade D, Coman I, Boja R 123

Cholecalciferol for prevention of chronic allograft nephropathy, kidney repair, and management of cardiorenal syndrome in vitamin D insufficient kidney transplant recipients
Kharlamov AN, Parrish AN, Ivanova EJ, Gabinsky JL, Veselova VS, Novoselova OS 124

The importance of surgical anatomy concepts in the risk decrease of the superior mezenteric artery in case of giant left Wilms tumor at child
Demian A, Dragomir S, Grad D, Retegan M, Viorel D . . .124

Comparison of efficacy and complications of general and spinal anesthesia in adult patients that are candicated for PCNL
Saberinejad A, Mehrabi S, Akbartabar M 125

The prognostic significance of red blood cell distribution width in patients with impaired renal function after invasive treatment of acute myocardial infarction
Swoboda R, Francuz P 125

Sexual function: A comparison between female renal transplant recipients and hemodialysis patients
Barbati M E, Khazanehdari SH, Zamani M 126

Is it possible to reduce the length of hospital stay for surgically treated patients with urogenital congenital anomalies?
Cvetinovic N, Isakovic A, Gusic N, Miroslav LJ Djordjevic 126

Neurology

High prevalence of orthostatic hypotension in vascular and degenerative dementia
Traykova M, Stankova T, Mehrabian S, Duron E, Labouree F, Rollot F, Traykov L, Hanon O 126

Hyperechogenicity of the substantia nigra (SN) in idiopathic Parkinson's disease (IPS) does not correlate with dopaminergic degeneration as shown by I123-FP-CIT SPECT
Schreiner S, Lobsien E, Kupsch A, Plotkin M, Schreiber SJ, Doepp F 127

Elevated levels of chromogranin B in mice with experimental autoimmune encephalomyelitis
Hoang HT, Mo M, Ehrlich BE 127

Preventive vs. therapeutic antibacterial therapy of post stroke infections in experimental stroke: translating an important clinical issue from bed to benchside
Hetze S, Engel O, Meisel A 128

The role of astrocytes in an animal model of multiple sclerosis grey matter demyelination
Bargiela D 128

Reduced brain-derived neurotrophic factor (BDNF) expression & secretion after treatment with advanced glycation endproducts in brain microvascular endothelial cells
Karaca I, Navaratna D, Lo Eng H 129

Study into the T cell response following amyloid beta 42 immunisation in human Alzheimer's disease
Morgan W, Zotova E, Nicoll J A, Boche D 129

Characterisation of microglial activation in an organotypic hippocampal model of a primary brain tumour
Powell M, Gatherer M, Johnston D, Nicoll J, Boche D . . .130

Analysis of ictal semiology in temporal lobe epilepsy
Stanic D, Ristic A, Sokic D, Vojvodic N, Zovic L J 130

Glycine receptor alpha 1 is required for glioma growth in vivo
Foerstera B, Eichler SA, Bernert C, Markovic DS, Synowitz M, Kettenmann H, Glass R, Meier JC 130

Deficiency in Na,K-ATPase alpha isoforms differentially affects the threshold for spreading depolarization in vitro
Reiffurth C, Alam M, Zahedi-Khorasani M, Dreier JP 131

Neurology / Psychiatry – Poster

Stigmatization of persons who visit psychiatrist - Comparation between medical and non-medical students
Zaric N, Zarkovic B, Stojiljkovic D, Maric N 131

Genetic and phenotypic study of patients with DYT 1 dystonia
Stankovic I, Kostic V 132

The clinical and epidemiologocal aspects of geronto-psychiatric disorders in Armenia
Tataryan K 132

Protective role of agmatine on oxidative and nitrossative stress ina brain rats with experimentally autoimmune encephalomielythis
Zabar K 132

A novel psychophysiological mechanism of the effect of alcohol use on academic performance
Welcome MO, Pereverzev VA, Pereverzeva EV 133

Psychiatric comorbidities in patients with pemphigus: An issue to be considered
Arbabi M, Mahdanian A, Ghodsi Z, Noormohammdi N, Shalileh K, Chams C 133

CRP as a prognostic factor in acute ischemic stroke
Vuksanovic M, Matkovic M, Jovanovic D 134

Serum uric acid concentration in multiple sclerosis
Przybek J, Chorazka K, Podlecka-Pietowska A 134

Botulinum toxin treatment of head tremor
Radeka T 134

Spectrum of the prevalence rate and risk factors of peripheral neuropathy in Type 2 diabetes in Stavropol, Russia
Mathur R, Kapoor R 135

Attention-deficit/hyperactivity disorder - Prevalence of symptoms in lower elementary school childern in Serbia
Jovicic M, Jovanovic S, Teovanovic P 135

Prevalence of depressive symptoms in patients with systemic lupus erythematosus
Zakeri Z, Narouie B, Moeini-aghtaei P, Hafani H, Mladkova N, Ghasemi-rad M, Taheri H, Jahrighi B, Dehghan M 136

Neurology – Poster

Chitooligosaccharide protects PC12 cells from oxidative cell injury: the role of Mitogen Activated Protein Kinases and Heat Shock Proteins
Joodi G, Mahdavi S A 136

Effect of GABA-B receptor agonist SKF97541 on hippocampal epileptic afterdischarges
Fabera P 136

Transcranial parenchymal sonography in amyotrophic lateral sclerosis
Kuzmanovic A, Velimirovic M, Ukic S 137

Erythropoietin for acute multiple sclerosis (ERAM study): To study the safety, tolerability and efficacy of treatment with Erythropoietin in patients with Optic neuritis as a first demyelization event, initial report
Mardani S, Borhanihaghighi A, Ghodsi M, Razeghinezhad M 137

Cauda equina paraganglioma with ependymal morphology: A rare case report
Erban T, Erban N, Midi A, Yener N, Çubuk R, Sav A 138

Significance of magnetic resonance in differential diagnosis of nontraumatic brachial plexopathies
Milicev M 138

Voltage-dependent calcium channel and NMDA receptor antagonists augment anticonvulsant effects of lithium chloride on pentylenetetrazole-induced clonic seizures in mice
Ghasemi M, Shafaroodi H, Nazarbeiki S, Meskar H, Dehpour AR 139

Inhibition of NMDA/NO signaling blocked tolerance to the anticonvulsant effect of morphine on pentyl-enetetrazole-induced seizures in mice
Ghasemi M, Shafaroodi H, Meskar H, Nazarbeiki S, Dehpour AR 139

Frequency of restless legs syndrome in patients with chronic renal failure
Moric A 139

Which factors influence the risk of intracerebral haemorrhage onset during warfarin therapy?
Tengryd C, Berntsson J 139

Clinical evaluation of patients with mitochondrial myopathy
Bogicevic A, Milosevic B, Despotovic M, Banjanin N 140

What is the relationship between serum level of vitamin D and multiple sclerosis in Isfahan, Iran?
Golabchi KH, Shaygannejad V 140

Antibodies to Ncore of Morbilli virus in patients with MS and their siblings with trait
Persson L, Longhi S, Andersen O, Lagging M, Johansson M, Enarsson J, Bergstroem T 141

Spinal cord - motor cortex coculture model: A new technique to study neuronal regeneration in vitro
Pohland M, Kiwit J, Glumm J 141

Neurosurgery

Local delivery of darcarbazine prolongs survival in the brainstem glioma model in rats
Kombaka AO, Casalis PA, Zenclussen ML, Thomale UW 141

Expression of coagulation factors and the role of thrombin in human glioma
Kratzsch T, Brodhun M, Hanisch U K, Kalff R, Kuhn S A 142

Analysis of operatively treated patients with meningioma in period 2007-2010 at cantonal hospital Zenica
Pojskic M, Skomorac R 142

Emergency surgical treatment of brain tumors
Spasic S, Djurovic B 143

Does gamma knife radiosurgery stop vestibular schwannoma growth? A prospective study
Varughese JK, Nansdal C, Pedersen P-H, Wentzel-Larsen T, Lund-Johansen M 143

Microglia activation after aneurysmal subarachnoid hemorrhage (aSAH) – Characterization of the cytokine expression profile
Radon AM, Schneider UC, Turkowski K, Ghori A, Brandenburg S, Heppner F, Vajkoczy P 144

Imaging of the vertebral venous plexuses in the context of percutaneous vertebroplasty
Urbanski B, Majewski M, Szlufik S, Zebala M, Popiolek W 144

Computer tomography angiography and digital subtraction angiography as methods in the early diagnosis of intracranial aneurysms - A comparative study
Majewski M, Urbanski B, Szlufik S, Zebala M, Rejman L 145

Surgical treatment of spinal metastases - the role of stabilization compared to decompressive laminectomy. Experience of 100 operated cases
Mihaylova S, Laleva L, Spiriev T, Stratev A, Enchev Y, Ferdinandov D 145

Expression of blood coagulation parameters as a useful tool for defining clinical outcome in patients with posttraumatic intracranial extracerebral hematoma
Anczykowski G, Guzniczak P, Zaborowski M, Woloszyn M 145

Ophthalmology

Changes of optic nerve conduction in alloxan-induced diabetic rats
Ghita M,Parvu D,Giurgiu M,Braga R,Zagrean L 146

The investigation of vitreous' acid-base balance at proliferative retinopathy of prematurity
Amkhanitskaya L I, Nicolaeva G V, Kuznetsova Y D, Sidorenko E I, Sidorenko E E 146

The effect of sub-conjunctival Mitomycin-C on intra ocular pressure in various types of glaucoma
Manzar N Mahar PS, Hassan M Ahmad T 147

Features of correction of coagulant system indexes in the eye vascular pathology
Biletska Polina, Dyomin Yriy, Gapunin Igor 147

Purpose: Increasing the effectiveness of treatment of diabetic retinopathy when treating participants-liquidation of the crash consequences at Chernobyl Nuclear Power Station
Gorbachova EV 147

Correlation between ocular surface disease index (OSDI) and ocularsurface staining in patients with dysfunctional tear syndrome
Pakdel F, Kashkouli MB, Najafpour E, Panahipour S 148

Prevalence of different types of orbital tumors during 1998-2008 Tehran Iran
Salour H, Abrishami Y, Abrishami A 148

The effect of ranibizumab treatment on patients´ vision-related quality of life in neovascular age-related macular degeneration
Hoffmann A, Hirneiss C, Wolf A, Finger RP, Kampik A 148

Orthopedics and Traumatology

Quantification mobility following kyphoplasty measured by an external non invasive measurement tool compared to clinical and radiological outcome parameters
Pirvu T N, Disch A, Schaser K, Melcher I, Haas N, Druschel C 149

A comparison of mobile-bearing versus fixed-bearing total knee arthroplasty
Eajazi A, Kazemi S M, Minaii R, Daftari Besheli L 149

Realistic loading conditions for simulating axial rotation
Dreischarf M, Zander T, Bergmann G, Rohlmann A 150

Can we improve the prediction of vertebral fracture risk in aging spines?
Jayasekera M 150

Evaluation of the outcomes of tibial interlocking intramedullary nailing with limited reaming in the treatment of tibial diaphyseal fractures
Mojtahed A, Mojtahed M, Espandar R, Mortazavi SMJ , Shalileh K, Mahboubi H 151

The influence of cryotherapy combined with other physical therapy methods in patients with knee arthrosis
Janikowska K, Fidut J 151

Alternative manual therapy techniques in managment of "tennis elbow"
Fidut J, Janikowska K 151

Pathology

Reprogramming of miRNA networks in cancer and leukemia
Volinia S, Galasso M, Costinean S, Tagliavini L, Gamberoni G, Drusco A, Marchesini J, Rosenberg A, Croce CM 152

Intervention of certain natural polyphenols in diabetic nephropathy
Branisteanu SC, Bilha A, Bilha S, Ciocoiu M 152

Comparison of EGFR FISH and EGFR SISH in non-small cell lung cancer
Wulf W, Behnke S, Soltermann A, Tischler V 153

Correlation of expression of estrogen and progesterone receptors and HER-2 with the stadium of illness and histological grade in invasive ductal carcinoma of the breast
Stankovic J, Mrdja V, Vukadinovic G 153

Morphological analysis of ovarium carcinom after chemotheraphy
Misic J, Danica A, Aleksandar S, Petar S 154

E-cadherin's immunohistochemical expression in gastric cancer; correlations with clinicopathological factors and patients' survival
Hedesan O, Nitu-Scaueru S, Nitu-Scaueru A, Lazar D 154

Functional activity of morphologically changed kidneys under conditions of pineal hyperfunction
Krokosh I, Bobryk I, Petryshen O 154

Is phosphorylation of the androgen receptor of clinical significance in the development and progression of prostate cancer
Adams C, McCall P, Edwards J 155

Significance of the fine needle aspiration cytology in the diagnosis of thyroid gland nodular lesions
Jelic J 155

Biochemical and histopatological effects of mobile phone exposure on rat hepatocytes and brain
Tatic M, Mitic A, Skakic A 156

Aberrant immunohistochemical expressions in gastric carcinomas
Nitu Scaueru S, Hedesan O , Nitu Scaueru A, Lazar D 156

Thymidilate synthase expression predicts longer survival in stage ii colon cancer patients treated with 5-flurouracil independently from microsatellite instability
Donada M, Bonin S, Nardon E, De Pellegrin A, Decorti G, Stanta G 157

Pathology – Poster

Nephrotoxicity of birthwort (Aristolochia clematitis)
Miljkovic D 157

Features of metastatic ovarian tumors
Jovanovic A, Marija A, Branislav A 157

Mineralization of human globus pallidus
Kopani M, Barcikova A, Sisovsky V, Caplovicova M, Jakubovsky J 158

Histomorphological and immunobiological characteristics of breast cancer in women under age 40
Gajic I 158

Effective stabilisation of mast cell granules by sodium cromoglycate leads to different redistribution of pulmonary toluidin-blue detectable mast cells during a hypoxia and posthypoxic recovery
Novotny T, Krejci J, Svehlik V, Wasserbauer R, Malikova J, Uhlik J, Vajner L 158

Oxidizing modification of albumens in the invasive trophoblast of uteroplacental section at disturbances of gestational change of spiral arteries of the uterus
Zabolotna I, Bukoros T, Davydenko I 159

Correlation between Ki67 labeling index and molecular phenotype of invasive ductal carcinoma of the breast
Gachechiladze M, Gudadze M, Narsia N, Burkadze G 159

Prognostic value of vascular epidermal growth factor receptor expression in lung carcinoma
Bobic V, Keleman N, Josipovic T, Bera J 160

Histopathologic assessment of colonoscopic biopsies in cases of chronic diarrhea
Soudhamini S, Gouri M 160

Immunohistochemical evaluation of p53 expression in oral squamocellular carcinoma
Mohor S, Lazar E, Belengeanu V, Meszaros N, Stoian M 160

Interpretation of dark neurons in experimental model of ischemia, neurointoxication and brain infection
Capo I, Hinic N, Lalosevic D, Sekulic S 161

Diagnostic value of imunohistochemistry in gastrointestinal stromal tumors (GIST) role of CD117
Gyero R, Fulop E, Marcu S, Loghin A, Fulop E, Grozav Marcu D 161

Administration of sodium cromoglycate in early phase of hypoxia restricts remodelling of the pulmonary arterial bed
Svehlik V, Novotny T, Krejci J, Wasserbauer R, Malikova J, Vrablova K, Uhlik J, Vajner L 162

Administration of sodium cromoglycate in early phase of hypoxia enables re-remodelling of the pulmonary arterial bed during the recovery phase
Krejci J, Novotny T, Svehlik V, Wasserbauer R, Malikova J, Vrablova K, Uhlik J, Vajner L 162

Morphological changes in the thyroid gland of rats after neonatal monosodium glutamate teatment
Rancic I, Jancic N, Rancic M 163

Pediatrics

Influence of the dosed out load on physical working capacity at children and teenagers with the inorganic pathology of cardiovascular system
Shchuchko A, Popkova M, Linkevich E 163

The correlation beetwen fetal hemoglobin level and free radical disorders of preterm infants
Stachowicz T, Rusnak K, Wojcik P 164

Efficacy of subcutaneous terbutaline compared with inhaled albuterol for treatment of hyperkalemia in chronic kidney disease
Goudarzi A, Ahmad S H, Zahra B 164

Prevalence of vitamin D receptor gene polymorphisms (FokI and BsmI) in Polish children treated for cancer
Latoch EJ, Panasiuk A 164

Transumbilical laparoscopic assisted appendectomy (TULAA) as alternative to conventional laparoscopic appendectomy - a case control study
Klein I, Wenke K, Krebs T, Bergholz R 165

A newborn rat model for surgical intervention to reduce the progress of disease in experimental necrotizing enterocolitis
Zschiegner M, Ridderbusch I, Roth B, Appel B, Wenke K, Bergholz R 165

Clinical and immunohistochemical predictors of renal survival in children with primary focal segmental glomerulosclerosis (FSGS)
Mozafarpour S, Beigi H, Gheissari A, Samanianpour P, Farajzadegan Z 166

Is transthoracic ultrasound a useful tool for bedside differential diagnosis of respiratory failure in children after cardiac surgery with extracorporeal circulation?
Paczkowski K, Czeczko K, Kosiak W, Haponiuk I, Chojnicki M 166

Assessment of factors affecting lymphocyte activation in the neonate
Kollar S 167

Prevalence of acid-base imbalance and its probable cause in pediatrics with failure to thrive
Mahboobi N, Tabatabaei SV 167

Mechanisms of patent ductus arteriosus after gestational exposure to indomethacin
Branco JM, Campos CF, Corte-Real A, Neves JB, Rodrigues FB, Sousa D, Teixeira L, Diogenes MJ, Vale FM, Rodrigues HL 167

Pediatrics – Poster

Neurosonographic diagnosis of the IVH in premature newborns
Zavgorodnia N 168

Overweight, obesity and metabolic syndrome in children with type 1 diabetes melllitus
Blecharczyk B, Luczynski W, Rembinska M, Recko P, Tercjak M, Lachowska U, Suchon P, Bernatowicz P, Wisniewska K 168

The role of nitric oxide by ulcer disease in children
Andriychuk D, Sorokman T, Ivashchuk H 169

Total antioxidant status in patients with major β-thalassemia
Bazvand F, Shams S, Bodaghabadi M 169

Cutaneous manifestations of hospitalized children with Henoch-Schönlein purpura
Namiranian P, Shahzadi R 169

The study of etiological and demographic characteristics of acute household accidental poisoning in children - a consecutive case series study from Pakistan
Manzar B Manzar N Saad SMA Fatima SS 170

Pre-B-cell acute lymphoblastic leukemia initially presenting with rheumatoid complaints
Dikyol M, Oner A, Akinci N, Arpaozu M, Atalay O, Emre B 170

The diagnosis utility of CD44 and E-cadherine in bladder urothelial carcinomas
Marinas A, Stepan A, Marinas M, Margaritescu C, Simionescu C 170

Survey of mothers experiences premature infants about kangaroo care
Antikchi M, Bakshi F, Javadi S, Dehghan A, Salimi T, Namjou Z, Khodayarian M 171

Kindney transplantation in children - early complications
Ivanisevic I, Kostic M 171

Knowledge of bronchial asthma amongst parents of asthmatic children
Ohud A , Fadia S 171

Pharmacology and Toxicology

Anti-diarrheal activity of Vincetoxicum stocksii is mediated through calcium channel blockade
Ullah H, Sajjad H, Jabbar A, Gillani A 172

The influence of DNA repair inhibitors on the etoposide sensitivity of leukemic cells in vitro
Kristev SM, Tarasova AV 172

Studying of cytotoxic effects of new antihypertensive compound FAR-2118
Chekman I, Kozlovskiy V, Govorukha M 173

Application of chitozan hydrogel and amniotic membrane carriers - impact on structure of epithelial cells cultures
Wowra B 173

Design and development of nanocarrier for efficient drug delivery into the brain in vitro and in vivo
Orthmann A, Zeisig R, Fichtner I 174

Interaction between doxazosin and human serum albumin
Voloshin A, Nebesna T 174

Pro-apoptotic activity of alpha1-adrenergic blockers
Nebesna T, Chekman I 174

Meta-analysis: The effect of ibogaine and 18-methoxycoronaridine on dopamine levels in brain
Pjevalica J 175

Effect of age on rat brain mitochondrial function: expressed as Reactive Oxygen Species (ROS) production in animals exposed to novelty and open space
Bains R, Markham A, Franklin P 176

Characterization of a novel anti-mitotic agent – An approach on multiple cellular levels
Eisenlöffel C, Schmöle A-C, Pews-Davytan A, Beller M, Rolfs A, Frech M 176

The local anesthetic activity of combinations of some local anesthetics with mexidol
Zakharchenko EY 177

Prevention of squamous cell carcinoma in the bronchial epithelium
Zaidan H Khalin I Storozhynko K 177

Cardioprotective effects of angiotensin II receptor antagonists during acute hemodynamic overload in ischemia
Neves JS, Ferreira RC, Ladeiras-Lopes R, Pintalhão M, Carvalho R, Leite-Moreira A 177

Pharmacology and Toxicology – Poster

Pharmacokinetics of paracetamol in patients after gastric resection
Sobiech M, Szatek E, Murawa D, Kamińska A, Potom K, Urbaniak B, Grześkowiak E, Murawa P, Kokot Z 178

Protective effects of Sambucus nigra polyphenols in the diabetic heart
Bejinariu AG, Ciocoiu M 178

Chronopharamacokinetics of acetaminophen in healthy rabbits
Cerbin M, Kaminska A, Bienert A, Grzeskowiak E, Plotek W 179

Chemoprotective effects of zataria multiflora against genotoxicity induced by cyclophosphamide in mice bone marrow cells
Ahmadashrafi S, Hosseinimehr S J, Naghshvar F, Ahmadi A, Ehasnalavi S 179

The study of immunomodulators of different pharmacological groups action on eradication and immunological status
Govinden K, Dugina V 180

Cytotoxicity of methylsulfonylmethane (MSM) on brest cancer (MCF-7) cell line
Jafari N, Bohlooli S H, Shirzad Z 180

The investigation of technological properties of Leonurus, Crataegus and Ginkgo extracts
Petkeviciute Z, Bernatoniene J, Kalveniene Z, Savickas A 180

Hypoglycemic action of the flavonoids fraction of cuminum nigrum seeds
Waseem HM, Ahmad M, Ullah E 181

Synthesis of triazoloquinazolinone derivatives as antiproliferative and antiplatelet aggregation agents and evaluation of their biological effects
Kobarfard F, Safizadeh F, Amidi S, Ghaffari S 181

A new promising hepatoprotector aqgpd with natural origin
Karamalakova Y, Nikoplova G, Gadgeva V, Zheleva A, Sharma RK, Kumar R, Tolekova A 181

Beta blocker for anxiety relief and its effect on problem solving
Masoomi R, Arabzadeh A, Masoomi L 182

Histological features of protective effects of the coprinus comatus mushroom in carbon-tetrachloride induced hepatotoxicity
Hinic N, Capo S, Prosenica T, Lalosevic D 182

Baroreflex stress response in borderline hypertensive rats
Radakovic D 182

Physiology

The role of polyethylene glycol in sciatic nerve recovery after acute crush injury
Raducan A, Mirica N, Duicu O, Ordodi V, Fira-Mladinescu O, Cristescu A, Muntean D 183

Endothelial Connexin 40 expression requires PI3 kinase activity and is specifically enhanced by shear stress
Vorderwuelbecke BJ, Maroski J, Fiedorowicz K, Da Silva-Azevedo L, Pries AR, Zakrzewicz A 183

Physiopathology of infantile pulmonary arterial hypertension induced by monocrotaline
Ferreira-Pinto M, Dias-Neto M, Neves AL, Pinho S, Goncalves N, Eloy C, Lopes JM, Goncalves D, Henriques-Coelho T, Leite-Moreira AF 184

Acute haemodynamic effects of tezosentan in rats with monocrotaline-induced pulmonary hypertension
Figueiredo Pinto D, Silva D, Fontoura D, Pinto J, Vasques-Novoa F, Lourenco AP, Leite-Moreira AF 184

Cardioprotective effects of magnesium orotate on respiration of rat heart mitochondria
Duicu O, Mirica N, Raducan A, Sturza A, Lazarescu A, Fira-Mladinescu O, Muntean D 184

Alterations to feeding behaviour in offspring induced by maternal exposure to a high caloric diet throughout lactation
Wright T M, Voigt J P, Langley-Evans S C 185

Liver oxidative stress as a possible mechanism of hormetic effect of moderate calorie restriction
Tomasevic T, Sljivancanin T, Andrejevic A, Bondzic K 185

Amygdala directly controls information processing in the primary visual, auditory, and gustatory cortices: evidence from infraslow (<0.5 Hz) brain potential recordings
Varentsov V E, Filippov I V, Pugachev K S, Krebs A A . . .186

Adiponectin (ADN) and adiponectin receptors (AdipoR1, AdipoR2) in the rat adrenal gland - description of the system and assessment of its physiological role
Paschke L, Zemleduch T 186

Blood pressure and heart rate variability during selective nNOS inhibition in conscious rats
Popov DM, Iliev B 187

Effects of juniperus communis aerosols on vasomotor responses in aortic rings from rat subjected to passive smoking
Sturza A, Plesa C, Ordodi V, Noveanu L, Mirica N, Fira-Mladinescu O, Lupea AX, Muntean D 187

Angiotensin 1-7 effects on miocardial contractility after hypoxia-reoxygenation
Mendonca L, Pintalhao M, Cerqueira R, Castro Chaves P, Leite Moreira A 188

Psychiatry

Effects of immobilization stress and sertindole on the transcription of Alzheimer's disease associated genes in rat brain
Kalman J Jr, Kalman S, Santha P, Domokos A, Fazekas O, Szucs Sz, Pakaski M, Szabo Gy, Janka Z, Kalman J 188

The role of DCTN1 (Dynactin) in the pathogenesis of schizophrenia
Grabowski, K, Puls I 189

The study of the rate of depression epidemic among medical students of Tabriz state university and Islamic Azad university of Tabriz
Nobahari S , Nobahari Sh 189

High prevalence of depression and anxiety symptoms among hospitalized geriatric medical inpatients of Nepal: A study from a tertiary level hospital of Nepal
Neupane M, Giri S, Timalsina S, Koirala S, Sharma S, Yadav V, Kumar A 190

Could movement disorder in opioid addicts be treated with methadone maintenance treatment?
Ekhtiari H, Safaei H, Parhizgar SE, Sikaroodi H, Mokri A 190

Antidepressant prescribing practice at university clinic
Zarkovic B, Zaric N, Stojiljkovic D, Pavlovic Z, Maric N P 190

9-hydroxy-risperidon (9OHRIS) prevents stress-induced β-actin overexpression in rat hippocampus
Kalman S, Kalman Jr J, Pakaski M, Szucs S, Fazekas O, Domokos A, Szabo; G, Janka Z, Kalman J 191

Cognitive evoked potentials p300 and functional asymmetry of brain
Ivetic O 191

Who did wrong? The error processing system and alcohol use
Pereverzeva EV, Welcome MO, Pereverzev VA 192

Suicide attempts and life events scale
Ilic J 192

Study of emotional intelligence, quality of life and body mass index in adolescents
Gudlavalleti ASV, Sameer M, RM Pandey 192

Public Health

Euthanasia: perceptions and ethical considerations of doctors in Pakstan
Hussain M F A, Naqvi S A A, Siddiqui S E, Shahnawaz S A, Raza S, Nauman F 193

The urgent need to motivate blood donors in Kyrgyzstan
Zeeshan A 193

Genesis of IMAGINE: Canada's first student-initiated three-pillar approach to healthcare of the homeless population
Dugani S, McGuire R 193

Assessing physical exposure to musculoskeletal risks among workers of a rubber factory in Shiraz
Salehi M, Ketabi D, Choobineh A 194

Review of respiratory symptom pattern among machine operators in plastic industry
Maduka A K I, Madusanka K U, Malinda W D S 194

Nominal group technique sessions: screening stage of the development of American-Ukrainian health management training program
Moskalenko V, Hernandes R, Shewchuk R, Hulchiy O, Zakharova N, Rudzsky S, Govorukha M 195

Prevalence of depression and its relationship with intelligent quotient (I.Q.) in school children of Karachi
Kalar M, Jafri F, Ayub S, Ali S, Butool R, Kazmi W 195

A survey on the obstacles to modern contraceptive use among married women in Hamedan, Iran
Moaddab M, Moaddab AH, Shahidi S 196

Nutritional status of south african women between the ages 18 and 22 years
Barnard JE, Grant CC, Wood PS, De Villiers N 196

Japanese cancer screening policy for people affected by the atomic-bombs - Past, present and future
Hamashima Y, Chisato H 197

Public Health – Poster

A Pilot study the socio-economic impact of cancer on patients and their families in a developing country
Zeeshan Y, Muhammad Y, Ahson M 197

Tobacco smoking practices among medical students and their attitude towards teaching about tobacco smoking in Medical Schools: A questionnaire-based survey from a Pakistani Medical School
Shah M, Sreeramareddy C T 198

Dimensions of self-reported aberrant driving behaviours and their relation to accident involvemnt in Iran
Ketabi D, Halvani G 198

Assosiation of physical activity and mental health in elderly
Mortazavi S, Mohamad K, Eftekhar H, Dorali R 198

Prevalence of premenstrual syndrome and its relationship with menstrual status and non-menstrual stress factors in young adult females
Oren B, Demirkyran G, Yurten H, Oduz M, Akar Z A 199

Feasibility of remote medical consultation Implementation in Iran University of Medical Sciences
Khammarnia M, Torani S, Mohamadi R 199

Public health aspects of traditional bonesetting practice in South Eastern Nigeria
Adepoju PO 200

Non-compliance in a large population of elderly patients with cardiovascular disease
Onutu R, Onofrei A 200

Determinants of health -promoting lifestyle among university of medical science students, Yazd, Iran
Hossein shahi D, Motlagh Z, Mazloomy SS, Fazelpour SH 200

Health effects of smoking among young people
Kaadan I, Alnasser A, Heer M 201

High quality, practical emergency medicine training for medical students
Fandler M, Zoidl P 201

Patients seeking health information on Internet
Kuncaite G, Dauksiene J, Radziunas R 202

Improving medical student's communication skill in community settings in Yogyakarta, Indonesia
Wibowo MF, Claramita M, Kharismayekti M, Prabandari YS, Febriyani D 202

Lithuanian patients' attitude to the package leaflet as a source of pharmaceutical information
Brazauskas P, Dauksiene J, Radziunas R 202

Terrorism in the country and its impact on stress levels and education amongst undergraduate students of Karachi, Pakistan
Sajjad H, Kiani R, Latif H, Jawed Y, Zawar I, Ansari H, Khan F, Rashid U, Cheema H, Saleem S 203

Pulmology

Effectiveness of routinely approach towards smoking cessation when lung cancer suspected in current and former smokers
Trofor L, Albu A, Trofor A 203

Sleep quality among medical students in Karachi, Pakistan
Zahid S, Surani A, Khaliqdina S J, Surani A A, *Khaliqdina S A J, Surani S* 204

Su Jok acupuncture in correction of pulmonary ventilation`s abnormalities at patient with chronic bronchitis
Kholodnova M A, Sergeeva E V 204

Chronic obstructive pulmonary diseases, atherosclerosis and chronic inflammation
Rykhlitska K, Tkach E 204

The thyrotropic function of the hypophysis and functional changes of the thyroid gland in chronic obstructive diseases of the lungs in patients of older age
Todoriko L, Todoriko D 205

To assess sleep quality among Pakistani physicians
Surani AA, Khaliqdina SJ, Surani S, Zahid S, Surani A, Khaliqdina SA 205

Prevalence of obstructive sleep apnea (OSA) and its association with Excessive day time sleepiness (EDS) and poor sleep quality (PSQ) among Pakistani physicians
Surani AA, Khaliqdina SJ, Surani S, Zahid S, Surani A, Khaliqdina SA 206

Capillary and arterialized blood gas analysis – an underestimated tool in monitoring respiratory insufficiency
Ryba A, Gillert M, Rogalska Z, Olszok J, Chodorowski L, Chrzanowska K 206

Allergy to fungal allegens in patients with bronchial asthma- study of 336 cases
Ukleja N, Sokolowski L, Gawronska-Ukleja E, Bartuzi Z . .206

The evaluation of Metabolic Syndrome's components influence on clinical-laboratory indices in patients with Bronchial Asthma combined with Metabolic Syndrome
Mygovych V 207

Specific immunotherapy as a method of asthma control achievement
Filonenko K, Gavrylov A, Pobedonna T 208

Connection between the process of cellular metabolism and the immune cells function
Pobedonna T, Chumak Y 208

Functional characterisation of promoter polymorphisms in the asthma associated gene uPAR
Timbrell S, Stewart C, Sayers I 208

Radiology

Diagnostic significance of MRCP in choledocholithiasis
Gusic N, Guduric N, Isakovic A, Cvetinovic N, Ivanisevic I, Maksimovic R 209

Visual, verbal , and auditory tasks to activate working memory network: An fMRI study
Fakhri M, Sikaroodi H, Oghabian M A, Maleki F 209

Model-based and non model-based study of eyes open and closed: A resting state fMRI study
Saadipoor A, Fakhri M, Sikaroodi H, Mahdavi A A, Riyahi A M, Seyedahmadinejad O 209

Pre operative brain mapping with functional MRI in patient with brain tumors
Mahdavi A, Hooshmand S, Mahdavi A, Hadizadeh H 210

In vitro cytotoxicity of Gd2O3 magnetic nanoparticles as contrast agents for magnetic resonance imaging
Riyahi Alam M S, Mahdavi Anari S A, Saadipoor A 210

Relation of nitric oxide and peroxynitrite plasma levels with the volume of the diffusion weighted image lesion after stroke
Meshkat Razavi G, Daemi Attaran P, Minoo P, Orandi A 210

Assessment of thermography as breast cancer screening technique
Veikutis V, Petrusaite A 211

Detection of inflammatory changes in the abdomen using antigranulocyte antibodies
Stojkovic M, Storebra T, Stojanovic M 211

Evaluation of the association between upper gastrointestinal symptoms and esophageal dilation in CT-scan findings
Ghourchian S, Moosavi S, Raji H 211

Paradigm selection and post-processing in fMRI studies of language lateralization
Toth V, Kozak LR, Rudas G 212

Epicardial halo phenomenon: an old radiology sign that may improve safety of pericardiocentesis
Jokovic Z, Simeunovic D, Kontic K, Maksimovic A, Gvozdenovic R, Seferovic PM, Maisch B, Ristic AD 212

The role of sonographic methods in diagnosing carpal tunnel syndrome
Rahmani M, Ghasemi AR, Kooraki S, Shakiba M, Habibollahi P 213

Rheumatology / Immunology

Prevalence and risk factors for low bone mineral density in systemic sclerosis patients
Zdraljevic N, Randjelovic M, Stojiljkovic M 214

Influence of nicotine on the number of antibody productive cells and eosinophil granulocytes
Vasilic Z, Maslovski B 214

Gammadelta T cells and their role in pregnancy induced improvement of rheumatoid arthritis
Tham M, Mueller C, Portmann-Lanz B, Surbek D, Ostensen M, Villiger PM, Foerger F 215

Comparative study of the prevalence, clinical features, sensitisation profiles and risk factors for Allergic Rhinitis between elderly and young adults in Cova da Beira
Ribeiro ACG, Moreira SM, Lourenco O, Fonseca M, Taborda-Barata LM 215

Comparative study of the prevalence, clinical features, sensitisation profiles and risk factors for Bronchial Asthma between elderly and young adults in Cova da Beira - Portugal
Moreira SM, Ribeiro ACG, Fonseca M, Lourenco O, Taborda-Barata L 216

Immunohistochemical localization of calbindin in rat thymus
Sergeeva V E, Smorodchenko A D 216

Tumor-associated fibroblasts: key players in cancer development
Preunca B, Thakur N, Ilie R, Bobilca V, Parikh H, Mosteoru S, Paunescu V, Bojin F, Tatu C, Gavriliuc O . . .217

Detection of folate receptor-beta; positive macrophages in rheumatoid arthritis
N Teteloshvili, Westra J, Bijl M 217

Hepatoprotective properties of artichoke (Cynara scolymus L.) in patients with gout and hepatobiliary system pathology
Arych H, Pishak O 218

Allergy to car and dog in patients with allergic diseases - study of 375 cases
Sokolowski L, Ukleja N, Gawronska-Ukleja E, Bartuzi Z 218

Differences in the activity of systemic sclerosis with patients with and without digital ulcers
Cvijovic A, Brankovic M, Damjanov N 218

Transcriptional profiling of peripheral monocytes in systemic sclerosis
Weiss G, Biesen R, Becker MO, Guenther J, Gruen J, Haeupl T, Kill A, Hanke K, Gruettner H, Loewy K, Burmester GR, Radbruch A, Gruetzkau A, Riemekasten G 219

Surgery 1

Biological feedback method in rehabilitation children with anorectal pathology
Tarasik A, Dzehtsiarou Y 219

Technique of treatment of patients with gastroduodenal ulcer bleeding
Sadovnikova E, Milovanova E, Mendoza Udin A 220

The role of abdominal compartment syndrome in patients with severe acute pancreatitis
Sotirovic V, Bajec A, Ilic N, Bajec D, Radenkovic D 220

A study of 63 cases evaluating risk factors involved in the survival rate after resection of liver metastasis from colorectal adenocarcinoma
Cozar O, Fustos T, Iorga O 221

Amniotic membrane as a biological dressing in split thickness skin graft donor sites in burn patients: A within-patient controlled study
Moaddab AH, Eskandarlou M, Azimee M, Rabiee S, Seifrabiei MA, Akbari M 221

Invastigation of Kv1.3 potassium channels as targets for immunosupression in rat limb allotransplantation
Krapf C, Hautz T, Grahammer J, Hickethier T, Zelger B, Seger C, Pfisterer H, Brandacher G, Öllinger R, Lee WPA, Margreiter R, Pratschke J, Glossmann H, Schneeberger S 222

Surgical treatment of type A acute aortic dissection in Octogenarians
Farina P, Glieca F, Possati GF 222

Paliative surgically treatment of unresectable pancreatic head cancer
Dabetic I, Zivkovic I 223

The efficacy of intraoperative cell salvage during coronary artery bypass grafting
Matkovic M, Vuksanovic M, Putnik S 223

Surgical treatment, prognostic factors and survival in patients with extrahepatic bile duct tumors
Zivkovic I, Dabetic I 223

The role of endothelial nitric oxide synthase in ischemia reperfusion injury in a murine pancreas transplantation model
Cardini B, Oberhuber R, Watschinger K, Hermann M, Obrist P, Werner-Felmayer G, Pratschke J, Brandacher G, Werner ER, Maglione M 224

GRP78 activity in prostate cancer is associated with HSP70 client proteins and upregulated in castrate-resistant, AR expressing tumours
Tan SSY, Benett HL, Ahmad I, Singh L, Nixon C, Orange C, Seywright M, Edwards J, Leung HY 224

Surgery 2

Integra versus matriderm in burn reconstruction: Consecutive Analysis Of A Single Surgeon's Experience
Ravishankar Aa, Wong V, Ravishankar Ai, Hemington-Gorse S, Dziewulski P 225

Breast cancer surgery - evaluation of minimal invasive procedures in lymphatic staging
Sadowska A, Klasa L, Mieszkowski M, Budynko L, Mysiorski M, Drucis K 226

The proliferation behaviour of human vascular umbilical cord cells for cardiovascular tissue engineering under static and dynamic conditions
Doehnert N, Lueders C, Hetzer R 226

The pteridines ABH4/BH4 modulate cellular responses to stress
Santer P, Ratschiller T, Hermann M, Maglione M, Drasche A, Burtscher T, Sucher R, Werner-Felmayer G, Werner ER, Brandacher G, Margreiter R 227

The analysis of factors which affects therapeutical options in treatment of femoropopliteal occlusive disease
Mitrovic G, Ilic D 227

Evaluation of clinical efficacy of endoscopic treatment of upper gastrointestinal bleeding
Sabela J, Dudek J, Jurczak M, Mrowczynski M 227

SVideomicrosurgery versus conventional microsurgery - A comparative study
Ilie R, Thakur N, Preunca B, Parikh H, Mosteoru S, Bobilca V, Alexandru B 228

A single institutional experience of factors affecting successful evaluation of sentinel lymph nodes in breast cancer patients
Erban N, Erban T, Midi A, Yener N, Deveci U, Manukyan M 228

New minimally invasive surgical technique in varicose disease - endovenous laser therapy
Bengulescu I, Pantea S, Pantea C, Sargan I, Stanciu P, Papurica M 228

Evaluation of Forearm X-ray radiography as a useful method to determine arterial calcification before arteriovenous fistula creation
Ganji M, Shirvani A, Zarei M, Rikhtehgar M 229

Cardiac surgery with extracorporeal circulation in paediatric population- another factor of the gallbladder oedema?
Czeczko K, Paczkowski K, Kosiak W, Chojnicki M, Haponiuk I 229

Surgery – Poster

Ascending aortic aneurysm, surgical indication and technique - Timisoara heart center experience
Mosteoru S, Parikh H, Thakur N, Preunca B, Bobilca V, Ilie R, Gaspar M, Dumitrasciuc G 230

Usefulness of pyloromyotomy with THE in improving gastric emptying
Dashti A, Mahmudlou R, Badpa NM,Ghasemi-rad M, Mousavi M 230

EXIT to Separation of two sets of conjoined twins
Al-Hammad FA, Al-rabeeah A, El-Gammal M, Al-Jadaan S, Al-Namshan M, Al-Zugaibi M, Al-Dahan D, Al-Zamakhshary M 230

Gallstone Ileus due to a jejunal gallstone inclavation - Report of a case
Tirziu R, Mazilu, O, Iliescu D, Sima L, Hut F, Blidisel A, Nicolau M, Gaje P, Ragobete C, Cretu O 231

Study on upper limb segment replantations - surgical treatment and assessment of morpho-functional results
Niagu RS, Chircu RN, Zamfirescu D 231

Videothoracoscopic thymecyomy as a new way in surgical treatment of generalized myastenia gravis
Osadchinskiy A 231

Early prediction of severity of acute pancreatitis using heamtocrit level on admission
Bajec A, Nikola I, Darko B, Vuk S 231

Follicular thyroid carcinoma with tracheal invasion: Case report
Rondic M, Filipovic A 232

A comparison of pedicle TRAM flap breast reconstruction using Laser Doppler with a common operation technique
Pajeda A, Astrauskas T 232

Sleeve gastrectomy as a new and safety bariatric operation for morbid obese patients: a retrospective study
Kayan O E, Tel C 233

The effect of ischemic and chemical preconditioning on ischemic-reperfusion injury of small intestine
Gajdos J, Bujdos M, Maretta M, Pomfy M, Varga J, Stasko P 233

Aorto-bifemoral bypass- particulair situation
Toma C, Marc E, Mreuta O 233

Medical case of localization of melanoma in a parotid gland
Vlasenko YE, Grygorov S, Rak A, Dontsova D 234

Session: Anaesthesiology / Emergency Medicine

Comparison of different preconcentration techniques in breath analysis under real life clinical conditions

ESC-ID: 506
Authors: Sabel B, Schubert J, Miekisch W, Fuchs P, Kischkel S, Mieth M
Country: Germany
University: University of Rostock, Department: Department of Anesthesiology

Introduction: Oxygenated compounds such as aldehydes and ketones in breath have been described as biomarkers of metabolism, oxidative stress and cancer. Conventional analysis of these compounds in the low parts per billion (ppb) range is hampered by their reactivity and poor stability. Sampling and preconcentration of volatile substances are crucial issues in breath analysis. Thus, reliable and easy to use techniques are mandatory for clinical application. Micro-extraction techniques such as Needle Trap Devices (NTDs), Solid Phase Micro Extraction (SPME) and Solid Phase Micro Extraction with On Fiber Derivatization (SPME-OFD) have recently been proposed for this purpose.
Aim: This study was intended to evaluate different methods of sample preparation and preconcentration with respect to applicability of breath analysis under real life clinical conditions.
Methods: After approval by the local ethics committee, 10 patients planned to undergo cardiac surgery with extracorporeal circulation (ECC) were enrolled into the study. Alveolar breath samples were taken on the day of surgery after induction of anaesthesia, after sternotomy, at end of ECC and 30, 60, 90, 120 and 150 minutes after end of surgery. Preconcentration and sample preparation was done by means of handmade multi-bed Needle Trap Devices (Tenax/Carbopack X/Carboxen 1000), SPME (Carboxen/ PDMS) and SPME-OFD (PDMS/DVB) using PFBHA. Volatile substances were separated by means of gas chromatography (GC) or heart-cut GC (HC-GC), respectively, identified and quantified by means of mass spectrometry.
Results: There was good correlation between NTD-HC-GC-MS, SPME-GC-MS and SPME-OFD-GC-MS for acetone (r=0.85) and hexane (r=0.96). Concentrations of volatile organic compounds varied considerably during the perioperative course of the patients under cardiac surgery. Exhaled acetone concentrations increased markedly after the end of ECC and alkane concentrations increased markedly after sternotomy (NTD-HC-GC-MS, SPME-GC-MS). Aldehyde concentrations increased after sternotomy and after surgery (NTD-HC-GC-MS, SPME-OFD-GC-MS). NTD-HC-GC-MS as a fairly new method proved to work excellently in the clinical environment and was highly compatible with alveolar sampling. Aldehydes showed improved stability on the NTDs; results were not affected even if excess amounts of volatile anaesthetics (sevoflurane) were present. Detection limits and sensitivity of this method can be improved if sampling volumes are increased. NTD combines advantages concerning quality and quantity in high performance analysis and is well suited for clinical application. In combination with hyphenated chromatographic techniques NTD can thus be used to provide well-tailored solutions for complex problems occurring in clinical breath analysis.

Pattern of Injuries Sustained in Suicidal Bomb Blast Attacks During 2000-08 in Karachi, Pakistan: A Retrospective study

ESC-ID: 543
Authors: Khaliqdina SAJ, Khaliqdina SJ, Surani AA, Surani A, Zahid S
Country: Pakistan
University: Dow University Of Health Sciences, Department: Physiology

Background: Suicidal bomb blasts have become an increasingly common form of terrorist violence. Numerous gatherings, public places and political processions have become targets of such acts. Data regarding injury pattern of suicidal bomb blast attacks in Pakistan is limited. In this paper we present the type, description and anatomical distribution of various physical injuries sustained during such attacks.
Methods: Data of major suicidal bomb blasts of 18th Oct 07, 11th Apr 06, 31st May 04 and 07th May 04 was included in this study. Available medicolegal documentation was reviewed on 287 survivors who were taken to the 3 major public sector hospitals. Analysis was performed using SPSS 17. The findings obtained were compared with documented blast injuries from all around the world.
Results: Mean age of victims who were predominantly males (98%) was 29.94 years (±11.079). The total gross physical injuries with an average of 1.92 injuries per patient were 552 of which 235 (42.5%) were lacerated wounds with an average length of 2 cms. 158 (28.6%) were punctured wounds with an average diameter of 1cm. 67 injuries (12.1%) were abrasions while 62 (11.2%) were burns, of which 1/3rd were deep burns. Commonly injured anatomical regions include lower extremities 244 injuries (44.7%); followed by upper extremities 105 (19.2%), head 81 (14.8%), thorax 40 (7.3%) and abdomen 38 (6.9%). The injury pattern varied significantly among the 4 blasts. Burns on the extremities were more commonly seen in 7th May and 31st May blast, 35% and 70% of all injuries respectively. However, lower extremities were the most commonly injured region in 7th May blast, 58% of a total of 31 injuries while head was much commonly injured in 31st May blast, 29% of a total of 58 injuries. In the 11th April and 18th October blast lacerations were the dominant type of injuries 50% and 46% of the total injuries respectively. Punctured wounds were also common in 11th April and 18th October blast 13% and 39% of injuries respectively. Head was most commonly injured region in 11th April blast 32% of a total of 112 injuries while lower extremities were most commonly injured in 18th October blast 54% of a total of 353 injuries.
Conclusion: In Pakistan males are predominantly affected by suicidal bomb blast attacks. Lacerated and punctured wounds were predominant type of injuries sustained in 11th April and 18th October blast while burns were more common in 7th May and 31st May blast; this could be attributed to the different types of explosive materials used in each blast. Extremities and head represent the most common region injured in these suicidal blasts. Comparing the findings with other data from the literature, puncture wounds were seen here to be much more prevalent in this setting and specifically in 11th April and

18th October blast. This could be attributed to the specific use of pellets and bearings in both of these blasts.

Comparative blood gas analysis in critically ill patients with / without sepsis

ESC-ID: 554
Authors: Usturoi I
Country: Moldova
University: State Medical and Pharmaceutical University "Nicolae Testemitanu", Department: Pathophysiology

Introduction. The aim of the present study is to understand the interrelations of main metabolic parameters in critically ill patients with / without sepsis and to define the algorithm of evaluation the patient's status for optimal treatment using the arterial blood gases analysis data. A retrospective study was carried out in the intensive care unit (ICU) of a tertiary hospital.

Materials and methods: Forty patients, divided into two groups (group I - critically ill patients without sepsis and group II - critically ill patients with sepsis) participated. The study involved the analysis of changes in arterial blood gases and statistical comparison between the two groups. We measured pH, PaCO2, PaO2, SaO2, HCO3-, Base Excess, Hematocrit and Lactate.

Results: There are significant differences in blood gas analysis results in critical ill patients with and without sepsis. Intensive care unit patients with sepsis had a mild acidemia (mean pH 7.33 ± 0.04) secondary to metabolic acidosis with a mean base excess of -5 ± 2.9 mEq/l. The low PaO2 (mean PaO2 70 ± 2.31, index of hypoxemia) and significant increase of lactate levels (Lactate 2.30 ± 2.17) as well as other parameters revealed multiple metabolic acid-base processes, occurring in sepsis.

Conclusions: As a result of the study, we confirmed that already in the 2nd day of sepsis takes place serious alteration of the blood gases status, which is accompanied by hypoxia and biological oxidation disorders. ABG data may be useful for evaluating the critically ill patients and can help make the right decision about treatment. Daily analysis of blood gas status, every 3 hours, should complete the diagnostic criteria in early septic complications in critically ill patients.

Correlation between chronic musculoskeletal pain and depression

ESC-ID: 735
Authors: Gluhovic I, Vasiljevic I, Pjevic I, Boscovic I
Country: Serbia
University: University of Novi Sad, Medical Faculty, Department: Anaesthesiology

Introduction: Number of patients with chronic pain(CP) in the world is increasing and it represents one of the main reasons of morbidity in the world. The occurrence of depression in some patients with CP contributes to the severity of the pain and makes therapy more difficult and expensive. Objective: Determine the existence and prevalence of depression in the group of patients with chronic musculoskeletal pain(CMP), as well as the impact of inefective analgesic treatment on the degree of depression.

Material and Methods: A prospective study of 84 patients, 42 patients of the Clinic for medical rehabilitation with a history of CMP and 42 healthy subjects, without history of CMP or depression. A Brief pain inventory-BPI, and Beck depression inventory-BDI,were used for evaluation of pain and degree of depression. For the evaluation of the analgesic treatment we used Pain management index-PMI. Data were analysed by Fisher test, Student T test, Spearman correlation in program (SPSS 14.0). A p-value <0.05 was considered statistically significant.

Results: A statistically significant difference in the prevalence of depression between examined and control group was established. Moderately strong and strong pain had 83.4% of patients, 75.3% took medications from neopioid group and in 51.3% the pain was not effectively regulated according to PMI. A correlation between the negative PMI and the degree of depression of patients was established.

*Conclusion:*The study determined the significant prevalence of depression in the observed series of patients. Patients with a negative PMI are in the greater risk of developing depression than those with a positive PMI or PMI equals zero. There is a need for the introduction of a permanent evaluation of pain and periodic evaluation of depression as integral part of management of CP and better knowledge of both health workers and patients about the proper and timely treatment of CP.

Post Dural Puncture Headache- A comparison between median and paramedian approaches in orthopaedic patients

ESC-ID: 1012
Authors: Daftari Besheli L, Mosaffa F, Karimi K, Eajazi A
Country: Iran
University: Tehran University of Medical Sciences, Department: Anesthesiology

Background: Postdural puncture headache (PDPH) is an iatrogenic complication of spinal anesthesia. Reported Causes are: sex, age, pregnancy, needle tip shape and size, bevel orientation, approach and etc. There is little study regarding the effect of different approaches on the incidence of PDPH. In this study we aimed to compare the median and paramdian approaches regarding the incidence of PDPH in patients undergoing spinal anaesthesia for the orthopaedic operations.

Methods: In a double blinded randomized controlled trial the patients, who were scheduled for some orthopaedic surgeries under spinal anesthesia between 2007 and 2008, were studied. The patients were randomized to receive spinal anesthesia by either a median (n=75) or paramedian (n=75) approach through a 25-gauge Crawford needle. No premedication was given and 30 minutes prior to surgery, all patients received normal saline 500 ml i.v and 4 ml 0.5% isobaric Marcaine in both approaches.

Results: Fifteen patients (10%) developed PDPH. Comparing both groups, 7 (9.3%) patients in the Median group versus 8 (10.7%) in the Paramedian group had typical PDPH which were not different significantly (P=0.875). The PDPH occurred in 6 (6.3%) of males and 9(16.7%) of females. The statistical analysis showed a significant difference between the rate of PDPH in females and males (P=0.041).

Conclusion: There is no difference between median and paramedian approaches regarding PDPH, thus the paramedian approach is recommended especially for older patients with degenerative changes in the spine and inter-

vertebral spaces and those who cannot take the proper position. Moreover the rate of PDPH was significantly higher in females than male.

The comparison of analgesic effects of acetaminophen and metamizole on pediatric orthopaedic surgical patients

ESC-ID: 1051
Authors: Smiljanic M, Simic D
Country: Serbia
University: University of Belgrade, School of Medicine, Department: Surgery and anaestesiology

Aim: Pain is still most common problem for patients in postoperative units. Adequate postoperative analgesia is necessary for faster recovery and better bearing of postoperative course. Acetaminophen and metamizole are drugs that are most frequently used for achieving analgesia with patients undergoing surgical treatments. The purpose of this study is to evaluate analgesic effects of acetaminophen and metmizole on pediatric orthopaedic surgical patients and then comparing those analgesic effects.
Matherial and methods: Patients (n=30) were divided into two groups, fifteen patients in each group. One group received acetaminophen as intravenous solution (PerfalganTM 1,5 ml/kg i.v) while the other received metamizole (0.1 ml/kg i.v). The pain all the patients felt was first evaluated postoperative before the administration of the drug, and the second time two or three hours after the patients received the drug. This was done using the visual analogue scale (VAS) and a scale that evaluates pain considering facial expressions (The Faces Pain Scale, Brieri et al, 1990). Statistical review of the results was done by student's T-test.
Results: It has been proven that there is a significant statistical difference ($p<0.01$) between analgesic effect achieved with metamizole compared to analgesic effect achieved with acetaminophen. Significantly larger analgesic effect was produced by metamizole.
Conclusions: This study has shown the differences between analgesic effects in favour of metamizole. Further examinations of analgetics are necessary, because the large benefit of successful analgesia in postoperative recovery has been proven.

The use of bispectral index (bis) in intrasurgical monitoring of awareness during the general endotracheal anaesthesia

ESC-ID: 1061
Authors: Kovacevich F, Kocich M, Popovich N
Country: Serbia
University: University of Belgrade School of Medicine , Department: Department of Surgery

Aim: Unexpected awareness is a complication of anaesthesia, considerably more frequent with patients with risk factors. A monitoring device has been presented, the one which can help prevent this phenomenon through monitoring electric activity of brain and muscles. The goal of this study is controlling the efficiency and necessity of bispectral index (BIS) in prevention of unexpected awareness during the general endotracheal anaesthesia.
Methods and Materials: The study includes 30 patients (15 male and 15 female) who have been undergone surgical procedures at our clinic. All the patients were given general endotracheal anaesthesia after preoperative preparation and their BIS values were recorded; subsequently, they were divided into two groups. The first one included patients with the BIS value range typical for the general endotracheal anaesthesia (40 - 60), while the other included those with the BIS value above 60. Due to the inquiry into the documentation gathered by anaesthesiologists during the preoperative preparation, selection of data was made in order to detect if risk factors which would influence unexpected awareness were present.
Results: Statistically crucial connection between risk factors and the increase of BIS value was noted. The increase of the BIS value above 60 was noted with 7 patients (23.34%). Five (71.43%) out of these 7 had risk factors, while the other 2 (28.57%) were found increased BIS value without risk factors. One patient (3.33%) out of 30 had risk factors; however, his BIS value was within the typical range.
Conclusions Bispectral index (BIS) can be used with high efficiency in preventing the phenomenon of unexpected awareness. This is especially the case with patients who could possibly be diagnosed high risk factors, frequently difficult to identify during preoperative preparation.

High volume continuous veno-venous hemofiltration and its effect on proinflammatory cytokines concentrations in septic shock patients plasma, treated in Intensive Care Unit - a preliminary study

ESC-ID: 1155
Authors: Kedzierawska S, Baran B, Dabrowski W, Nestorowicz A, Rolinski J, Tabarkiewicz J
Country: Poland
University: Medical University of Lublin, Department: Dept. Anesth. Int. Ther., Dept. Clin. Immunol

Background: One of the most important goals in treatment of patients with septic shock is to reduce the inflammatory response. Proinflammatory cytokines such as interleukin-1beta (IL-1beta), interleukin-6 (IL-6) and tumor necrosis factor-alfa (TNF alfa) are responsible for acute phase response development. The aim of the study was to determine how high volume continuous veno-venous hemofiltration (CVVH) affects concentrations of proinflammatory cytokines in septic shock patients plasma, treated in Intensive Care Unit (ICU).
Material and methods: A cohort of 4 critically ill patients (average age 47,5) with septic shock were studied. They were treated in ICU in 2009. All patients survived. Hemofiltration was performed with regulary changed Prisma Flex M 150 filters (TMP/PTM 450 mm Hg). Proinflammatory cytokines: IL-1beta, IL-6, TNF alfa and blood parameters: white blood cells (WBC), c reactive protein (CRP), procalcytonine (PCT) were considered during the study. They were measured 7 times: before the CVVH procedure and at 6, 12, 24, 48, 72, 96 hours thereafter. The blood flow rate was 75-80 ml/kg weight (high volume CVVH) during the first 6 hours after commencement of CVVH and then it was decreased to 30-35 ml/kg weight (low volume CVVH) and proceeded next 5 days.
Results: IL-1beta (1,71 pg/ml), IL-6 (74,96 pg/ml) and

TNF alfa (23,4 pg/ml) were the average concentrations before commencement of CVVH. After 6 hours of high volume CVVH IL-1beta (0 pg/ml) and TNF alfa (1,69 pg/ml) concentrations decreased and IL-6 (101,48 pg/ml) increased. When CVVH was changed into low volume IL-1beta values raised with time. IL-6 values generally decreased, however we noticed an increase at the third day of treatment. TNF alfa concentration maintained the decrease but similarly to IL-6 we saw a minor raise of its value at the third day of treatment. The average blood parameters concentration prior to the start o CVVH was WBC - 11,53 x 10^3 /microL; CRP - 53,22 mg/l; PCT - 23,38 ng/ml. High volume CVVH caused a raise of WBC concentration (11,75 x 10^3 /microL) and decrease of CRP (0 mg/l) and PCT (22,81 ng/ml) concentrations. During low volume CVVH WBC concentration maintained the increase and on the other hand CPR and PCT concentrations generally decreased with time.
Conclusions Proinflammatory cytokines levels are reduced by high volume continuous veno-venous hemofiltration. In addition, cytokines concentrations have an influence on blood parameters. White blood cells levels increase with time and c reactive protein as well as procalcytonine concentrations are reduced during continuous veno-venous hemofiltration. We believe that future research on a larger group will bring us more information on this subject.

Pre- and postconditioning with isoflurane and the effects on glycogen synthase kinase 3-beta expression in the in vivo rat heart

ESC-ID: 1358
Authors: David A, Gheorghiu G, Hensia C, Ordodi V, Berdreag O, Papurica M, Muntean D, Sandesc D
Country: Romania
University: UMF Timisoara "Victor Babes", Department: Pathophysiology

Aim: Anaesthetic pre- and postconditioning with Isoflurane has been consistently associated with cardioprotection in several experimental models of ischaemia/reperfusion (I/R) injury. The protective effects were related to the phosphorylation and inactivation of glycogen-synthase-kinase-3beta (GSK-3beta), a kinase central to the signal transduction of cardioprotection. The present work was purported to compare the effects of two protocols of anaesthetic pre- and postconditioning with Isoflurane (Iso) on GSK-3beta; expression during the postischaemic reperfusion in rat hearts in vivo.
Materials and method: Anaesthetized rats (n = 5-7/group) subjected to 30 min episode of regional ischaemia followed by either 5 min (5R) or 15 min (15R) of reperfusion were randomized to receive: groups (1) and (2) - no additional intervention (Control-5R, Control-15R); group (3) - a protocol of 3 episodes of preconditioning with Iso in order to assess the direct effect of the protocol on kinase expression (IsoPreC); groups (4), (5) - Iso preconditioning (IsoPreC-5R, IsoPreC-15R); (6),(7) - Iso postconditioning (IsoPost-5R, IsoPost-15R). Total and phosphorylated GSK-3beta; were determined by Western blot analysis.
Results: In group (3) a 1.3-fold increase in the phosphorylated form of GSK-3beta; was observed when compared to the values in Controls, suggesting that the preconditioning protocol per se is able to inhibit the enzyme. In preconditioned groups (4) and (5) the expression of phospho-GSK-3beta was 1.15-fold, 1.20-fold higher vs. the corresponding Controls, respectively. Postconditioning elicited a more important increase of phospho-GSK-3beta (1.54-fold and 1.21-fold in groups (6) and (7) vs. equivalent Controls).
Conclusions In the in vivo rat model of regional ischaemia, anaesthetic pre- and postconditioning with Isoflurane elicited comparable effects on GSK-3beta expression, albeit slightly increased for the postconditioning protocol at 5 min of postischaemic reperfusion.
Research supported by National University Research Council Grant ID 1254/2007.

The relationship between central venous oxygen saturation (scvo2) and oxygen debt in normovolaemic anaemia

ESC-ID: 1397
Authors: Kocsi S, Demeter G, Soós K, Nagy E, Érces D, Kaszaki J, Molnár Z
Country: Hungary
University: University of Szeged, Department: Anaesthesiology and Intensive Therapy

Introduction: In critically ill patients ScvO2 less than 70% and central venous-to-arterial carbon dioxide difference (CO2-gap) more than 5 mmHg may reflect oxygen debt, which can often be caused by anaemia. In current guidelines the transfusion trigger is haemoglobin (Hb) less than 70 g/l, but there is no recommendation for ScvO2. The aim of this study was to investigate the value of ScvO2 in indicating oxygen debt in normovolaemic anaemia and to reveal whether CO2-gap reflects it.
Methods: After splenectomy mini-pigs (n=10, weight range: 18-30 kg) were bled (10% of estimated blood volume/5 min, T0-T5) and blood loss was replaced by the same volume of colloid, after which haemodynamic measurements and blood gas analysis were performed. Data are presented as median [interquartile range], and analysed by Friedman test and Pearson correlation.
Results: The Hb dropped significantly as compared to T0 (T0 = 119[110-130], T5 = 49[43-53] g/l, $p<0.001$), which was accompanied by significant changes in oxygen delivery index (DO2I) and oxygen extraction ratio (VO2/DO2) (T0 = 399[338-448], T5 = 244[217-292] ml/p/m2, $p<0.001$; T0 = 29[26-34], T5 = 44[38-48] %, $p<0.001$, respectively). There was also a significant drop in ScvO2 (T0 = 74[67-80], T5 = 63[58-76] %, $p = 0.007$), which showed significant correlation with DO2I and VO2/DO2 ($r2 = 0.149$, $p = 0.003$; $r2 = 0.469$, $p<0.001$, respectively). The physiological threshold of ScvO2<70% was only achieved at T4: Hb = 58[53-63] g/l and ScvO2 = 67[57-75] %. Moreover CO2-gap increased significantly above 5 mmHg only at T4 (T0=5.0[4.0-9.3], T4 = 8.0[5.8-10.3] mmHg, $p<0.03$).
Conclusions More than 50% drop in Hb resulted in a significant reduction of DO2 and significant increase in O2-extraction (VO2/DO2). This change was well monitored by the ScvO2. The finding that ScvO2 dropped below the physiological threshold of 70% only after the 4th bleeding event and CO2-gap increased at this point, suggests that ScvO2 may be an important physiologic transfusion trigger in normovolaemic anaemia and may additionally be supported by the value of CO2-gap.

Assessment of midazolam and propofol sedative effect on the quality of upper gastrointestinal endoscope

ESC-ID: 1502
Authors: Soltanpour N, Mirzaei V
Country: Iran
University: Rafsanjan University of Medical Sciences , Department: Faculty of Medicine

Introduction: Endoscopy as a therapeutic and diagnostic procedure needs proper sedation. These days, different sedation drugs are used. In this study we determind the effects of midazolam and propofol in the quality of endoscopy.
Material and Methods: This is a three blinded clinical trial study. We studied 120 patients that referred for endoscopy. Patients were selected on excluded criteria and divided in to 4 groups: 1) control group (with out sedation), 2) midazolam group, 3) propofol group, 4) synergism group (midazolam+propofol group) and in every gruop heart rate, o2sat, blood pressure,time of endoscopy, activity and score after sedation were analyzed.
Result: Patients in 4 groups were the same in age, gender,cause of refer, blood pressure, heart rate, underlying disease, history of endoscopy and o2sat before endoscopy. o2sat during endoscopy was the best in control group and in the other groups there weren't any significant difference. Pain and time of endoscopy in 4th group was less than the other groups. Amount of cooperation in group 4 was the best. In this study activity and start of psychomotor activity after endoscopy were significant.
Conclusion: Based on this research if patients didn't have anxiety the best choice is not to use sedation but if we insiste on sedation the best choice is propofol alone. Although using both midazolam+propofol could increase amount of satisfaction and cooperation but they cause decrease in o2sat, level of consciousness and activity after endoscopy.

Session: Anatomy

Development of cajal cells in the duodenum of human embryo and fetus

ESC-ID: 682
Authors: Jovanovic M, Stojanov A, Majcan M
Country: Serbia
University: University of Nis , Department: Medicine

Introduction: Santiago Ramon y Cajal described a new tipe of cells functionaly related to the enteric plexus and also to the smooth muscle cells of the gastrointestinal tract (GIT). Later, Dogiel confirmed this finding and called them interstitial cells of Cajal (ICCs). From the functional point of view, ICCs are considered to be the origin of the slow electric waves of the GIT and to be modulators in enteric neurotransmision. ICC express the gene product of c-kit, a protooncogene that encodes the receptor tyrosine kinase kit. Labeling of kit receptors has provided efficient means of identifying ICC at the light level in a variety of preparations, including human specimens.
The Aim: Defining times of appearance and distribution of ICC populations in the human duodenum, in parallel with differentiation of nerve structures and SMCs.
Materials and Methods: Human duodenum specimens were obtained from 5 embryos and 17 fetuses without gastrointestinal disorders, 7-25 weeks of gestational age. The specimens were exposed to anti-c-kit antibodies to investigate ICC differentiation. Enteric plexuses were immunihistochemically examined by using anti-neuron specific enolase (NSE) and differentiation of smooth muscle cells was studied with anti-desmin antibodies.
Results: C-kit-immunoreactive cells are present in the human duodenum wall at the end of embryonic period of development (8th weeks). C-kit-immunoreactive cells in the region of the myenteric plexus differentiated first, followed by those within the muscle layers. In the human duodenum there are differences in the distribution of C-kit-immunoreactive cells, which are established in the 14th week and maintained during later development.
Conclusions These results may help elucidate the origin of ICC and the etiology and pathogenesis of duodenum motility disorders in neonates an doung children that are assosiated with absence or descraesed number of these cells.

Some histological and morphological peculiarities of uterine tubes in human fetuses

ESC-ID: 827
Authors: Marchuk V, Piatnytska T, Tymchuk T
Country: Ukraine
University: Bukovinian State Medical University , Department: Anatomy and Operative Surgery

Material and methods: The investigation was carried out on 22 fetuses aged 9-10 months with mean of microscopy and morphometry methods. There was established, that mucous membrane was presented with longitudinal ramificated folds that almost closed uterine lumen. The folds were more expressed in ampular part of uterine tubes, their height was different. The most expressed height of folds was in ampules and extremely decreased in uterine isthmus.
Results: Every fold had developed cellular core, built from connective tissue. Folds were predominately covered with cylindrical epithelium, which was situated on basal membrane. Some epithelial cells had got villi, what influence on the movement of ovum in the direction of uterus. There were also revealed secretory cells, which involved secretory granules, but had no villi. Muscular lamina of mucous membrane and submucous layer were not defined in uterine tube. Muscular coat consisted of outer longitudinal and inner circular layers, which were formed by smooth myocytes. In some cases there were observed additional thin inner longitudinal layer of smooth myocytes. Thickness of circular muscular layer considerably predominated above thickness of outer longitudinal layer. Circular muscular layer was thicker than in uterine part of tube and was the thickest in isthmus of uterine tube. The border between outer and circular muscular layer was not distinct in some parts of tube. Uterine tube was covered with peritoneum with typical its build.

Morphometric and stereological analyzing of ganglion structures of myenterical nervous plexus in frontal wall of rectum and sigmoid colon

ESC-ID: 893
Authors: Andrijasevic V, Mandic P
Country: Serbia
University: University of Pristina, Kosovska Mitrovica , Department: Department of Anatomy

Introduction: Myenteric plexus is very important for functioning of gastrointestinal tract. It represents one regulative level of autonomic nervous system which is placed in the wall of the gastrointestinal tract and it is directly exposed to the pathogenic influences from the out side. Main goals: The purpose of this study is to analyze the myenteric plexus as a part of autonomic nervous system in the particular parts of the colon (rectum and sigmoid colon).
Material and methods: In the research were used 30 samples of tissue of the frontal wall of sigmoid colon and rectum. First, it was determined their volume by pycnometer. After that, the samples were elaborated histologically and colored with HE, Cresyl-violet and AgNO3 method. The samples were placed into a shouldered series of cuts (thickness of the cut 7μm and 50μm cut degrease). Stereological analysis was performed by the test system M42, which was calibrated on the objective focus 40X. In the analysis it was determined the absolute volume of the ganglion structures of the myenteric plexus and the absolute number of ganglion cells in the ganglion structure. The analysis of the variance and the t-test were used as statistics methods for this research.
The results and conclusion: The structures of the myenteric plexus were showed as wide, irregular ramified structures, hard edged from the smooth muscles surround. Ganglion cells are large, oval or polygonal characteristic cells. The absolute volume of the ganglion structures and the absolute number of ganglion cells have the tendency of decrease going from rectum to sigmoid colon, but the decrease is not statistically significant. The differences on the level of significant $p<0,05$ are important only if are compared the absolute volume of ganglion structures and the absolute number of ganglion cells of myenteric plexus of ampullary part of rectum and initial part of sigmoid colon. Basically, ganglion cells of the myenteric plexus are the most numbered in the tissue samples from the ampullary part of rectum, and the least numbered are in the tissue samples of the initial part of sigmoid colon.

Cajal-like cells in blood vessels of gastrointestinal tract of human fetus

ESC-ID: 986
Authors: Jovanovic M, Stojanov A, Jevtic M
Country: Serbia
University: University of Nis, Department: Medicine

Introduction: In the last few decades, besides interstitial cells of Cajal in gastrointestinal tract, Cajal-like cells (CLC) in other organs were described as well. CLC are spindle-shaped with varying number of branching cytoplasmic processes, that are interconnected, and in close vicinity to nerves and smooth muscle cells. The presence of CLC is proven with methylene blue and c-kit staining.
Aim: The aim of our study is to identify c-kit positive cells in blood vessels of human GIT organs, during fetal development.
Materials and Methods: The used material consisted of 18 human fetuses, between 15th and 35th week of fetal development. Immunohistochemical research was based on detection of kit-polymer.
Results: Between 15th and 19th week of fetal development, there are no c-kit-IR cells in walls of blood vessels. C-kit-IR cells are present in walls of blood vessels organs of GIT in period from 20th to 35th week of development. These cells are present in blood vessels of submucosa, muscle layer and subserosa.
Conclusion: CLC are spindle-shaped with long thin cytoplasmic processes that are beginning from opposite sides.

Immunocytochemical study of NOS in the periaqueductal gray: Effects of neuropeptides Tyr-W-MIF-1 and Tyr-K-MIF-1 after immobilization stress in rats

ESC-ID: 1182
Authors: Astasidi L, Bocheva A, Bozhilova-Pastirova A, Ovtsharoff V
Country: Bulgaria
University: Sofia Mefical University , Department: anatomy, histology, pathophysiology

Nitric oxide (NO) is a gas formed during the conversion of L-arginine in a NADPH-d dependent reaction by NO synthase (NOS) and acts as an intracellular signaling molecule. NO system affects the secretion of stress hormones and fulfils the criteria of a stress-limiting system in the brain. Also, NO is involved in NO-molecular ways, which affect through auto regulation different signaling molecules such as opioids, endocanabiotics, and others. One of the mechanisms known to play a part in the response of an organism to stress is activation of the endogenous opioid system. Endogenous opioid peptides take part in various functions as hormones or neuromodulators. Family of peptides included MIF-1, Tyr-MIF-1, Tyr-W-MIF-1 and Tyr-K-MIF-1. They are neuropeptides, neuromodulators, which are able to inhibit the expression of some forms of stress. The Tyr-K-MIF-1 showed little activity on opiate binding, while Tyr-W-MIF-1 acted as a mixed Ĭ2-opioid receptor agonist and Ĭ1-opioid receptor antagonist. The aim of our study was to investigate the effects of Tyr-W-MIF-1 and Tyr-K-MIF-1 on NOS expression in periaqueductal gray (PAG) after immobilization stress in rats. Stimulation of opioid receptors within the PAG activates descending inhibitory pathways and suppresses nociception of cortical neurons in rats after immobilization stress and of Tyr-W-MIF-1 and Tyr-K-MIF-1. The experiments were carried out on male Wistar (180-200g). Each group included 3 rats. The animals were placed in a plastic tube with adjustable plaster tape on the outside so that the animals were unable to move 1 hour. There were holes for breathing. The control group was not submitted to 1 hour stress procedure. Tyr-W-MIF-1 and Tyr-K-MIF-1 (at a dose 1 mg/kg) were injected intraperitoneally. Animals were anaesthetized with Thiopental (40 mg/kg, i.p.) and perfused (4% paraformaldehyde in 0.1M phosphate buffer, pH 7, 2). Brains were sectioned by a freezing microtome. Free-floating sections were incubated in a solution of the monoclonal anti-nNOS antibody, with biotinylated anti-

mouse IgG and in a solution of avidin-biotin-peroxidase complex, a solution of 0.05% 3,3-diaminobenzidine for the visualization. All procedures were approved by the Animal Care and Use Committee of the Medical University, Sofia. First, the immunocytochemical localization of NOS was studied to facilitate recognition of morphological details and distribution patterns of these types of neurons. Second, it was found that NOS is a proper marker for quantitative studies. Morphometric analysis was performed using a microanalysis system (and a magnification, 40 x objective). Data were recorded automatically in the computer program CUE-2. Data were compared with the Students t-test. All values are presented as means of standard error of the mean. The present results suggest that expression NOS in PAG was increased after immobilization stress, but Tyr-W-MIF-1 and Tyr-K-MIF-1 can decrease the number of NOS- immunoreactive neurons in the PAG.

Bankart repair implications-Anatomic and histologic study of the glenoid labrum

ESC-ID: 1190
Authors: Bezna MC, Melinte PR
Country: Romania
University: University of Medicine and Pharmacy from Craiova , Department: Faculty of Medicine-Departament of Anatomy

Introduction: The particular anatomy and biomechanics of the glenohumeral joint raise many questions about its implication in the etiology and pathophysiology of shoulder instability. We proposed ourselves to perform an anatomic and histologic study of the nervous endings and receptor structures inside the glenoid labrum emphasizing the anatomic and neurophysiologic importance of treating Bankart lesions.
Materials and methods: We performed minute anatomic dissections and harvested glenoid labrum from 47 fresh cadavers with no lesions of the shoulder; we studied micro anatomic the stereo topography of the nervous endings and receptor structures using the Cajal-Nonidez argentic impregnation staining method and we examined the serried section at a Nikon research microscope. We also made in vivo observations of the labrum morphology during shoulder arthroscopy.
Results and discussions: Our observations revealed: spiral neurofibers and Pacini lamellar corpuscle at the posterior and inferior aspect of the glenoid labrum; grouped neurofibers first described by Rollette at the anterior and superior aspect; encapsulated nervous endings type II (A, B) from Freeman and Wyke classification at the junction area between the labrum and the long biceps tendon. The presence of mechanic receptors inside the glenoid labrum and especially at the insertion of long biceps tendon brings up the idea for the existence of some neuron modulating processes associated to movements with the nervous center at C5-C7 cervical neuromeres.
Conclusions Mechanic receptors presence inside glenoid labrum opens new perspectives in the knowledge of neurocibernetics mechanisms involved in shoulder joint complex motions; it also emphasize the importance of Bankart repair followed by functional therapy in order to restore and to retrain the damaged proprioceptive reflexes.

The development and formation of the vertebral column topography during the early Period of human ontogenesis

ESC-ID: 1250
Authors: Kryvetskyi I, Kryvetskyi V
Country: Ukraine
University: Bukovinian State Medical University , Department: Department of Human Anatomy

Introduction: The actuality and priority of the conducted investigation is conditional upon the importance of data about human intrauterine period for the medical science in general and the absence of complete conception about the regularity of chronologic sequence of the vertebral column development, the dynamics of its shape formation and the peculiarities of topographic-anatomical interrelations with surrounding organs and structures during prenatal period of human ontogenesis.
The aim: The aim was to study the morphogenesis and peculiarities of chronologic sequence of the formation of the vertebral column topography during prenatal period of human ontogenesis.
Materials and methods: The investigation was conducted on 170 corpses of human embryos, prefetuses and fetuses. With the aid of adequate morphologic methods the normalities of chronologic sequence of the vertebral column development, periods of its intensive and delayed growth, its individual and age anatomical variability during the whole prenatal period of human ontogenesis were described.
Results and conclusions: The research is devoted to the questions of development and formation of the vertebral column topography during the early period of human ontogenesis. The topographic-anatomical peculiarities of interrelations of structures of vertebral column region from their conception up to birth, dynamics of their formation and growth with the consideration of the morphology of neighbouring structures were proved. For the first time with the aid of adequate morphology methods the study of morphogenesis and dynamics of spatio-temporal correlation of vertebras of all regions of human vertebral column, their junctions during intrauterine period of development and in new-born was conducted from the topographic-anatomical approach to the problem of embryogenesis point of view. The peculiarities of blood supply and venous outflow of the vertebral column were figured out. The critical periods, morphologic causes and time of probable manifestation of congenital anomalies of vertebral column were established. On the basis of the results received, the problem of prenatal diagnostics of congenital malformations of the vertebral column was solved.

Centella asiatica leaf extract treatment in stress-induced rats: Enhancement of spatial memory and increasing of the thickness of hippocampal CA1 pyramidal layer

ESC-ID: 1417
Authors: Sattwika PD, Sari DCR, Aswin S, Suharmi S
Country: Indonesia
University: Universitas Gadjah Mada , Department: Anatomy

Centella asiatica (CeA) is a creeping herb, growing in moist places in Asian countries. The leaves of CeA are used for memory enhancement as an alternate system of

medicine in some countries. Previous studies have proven the ability of CeA in enhancing memory by mean of its neurotrophic and neuroprotective effects. Chronic stress may cause morphological changes in the hippocampus, one of the brain region concerned with learning and memory, followed by deficit in the hippocampal function including the impairment of spatial memory. The effect of pegagan in enhancing memory then leads to the question whether there is a similar effect on rats after the induction of chronic electrical stress. The aim of this study is to investigate the influence of CeA extract in enhancing spatial memory and increasing of the thickness of hippocampal CA1 pyramidal layer and to investigate the relationship between alteration of spatial memory and the morphological change of the rat (Rattus norvegicus) after induced by the electrical stress. In this study, eight-week male rats (n=21) were divided randomly into three groups, i.e. two treatment groups (KP1 and KP2) and one control group (KN). The rats were induced by 10 minutes electrical stress and given daily 150 mg/kgBW (for KP1) or 300 mg/kgBW (for KP2) of CeA extract per oral for 6 weeks. Control groups received 1 mL aquadest daily for 6 weeks. During 12 days, a test of eight-armed radial maze was conducted for individual rat to test the performance of spatial learning. The performance of rats were assessed by measuring the percentage of correctly-entered arm. After the treatment period, the rats were killed and the brains were removed to make paraffin blocks of CA1 hippocampus then were stained to measure the thickness of hippocampal CA1 pyramidal layer. The result showed that there was an improvement in spatial learning performance and increasing of the thickness of hippocampal CA1 pyramidal layer. Mann-Whitney test showed that there was significant difference of spatial memory and the thickness of hippocampal CA1 pyramidal layer among treatment groups and control group ($p<0,05$). Rat group in KP2 gave a better performance of eight-armed radial maze task and had thicker hippocampal CA1 pyramidal layer. Enhancement of spatial memory had a positive relationship with the increasing thickness of hippocampal CA1 pyramidal layer. These results indicate that treatment with CeA extract on rats enhances memory retention. Treatment with CeA extract is able to enhance spatial memory and increase the thickness of hippocampal CA1 pyramidal layer of the rats after induced by electrical stress. This effect is more prominent in the group with higher administration dossage of CeA extract. We conclude that active substances present in CeA extract has neuronal dendritic growth stimulating property; hence it can be used for enhancing neuronal dendrites in stress and other neurodegenerative and memory disorders.

The analysis of the possibility of lowering the nerve tissue damage caused by ishaemic attacks on animal models, and its potential use on humans

ESC-ID: 1472
Authors: Bojovic O, Zekovic A
Country: Serbia
University: Medical School, University of Belgrade , Department: University of Belgrade, Institute of Anatomy

Introduction: Different stimuli can lead to nerve tissue damage. During the damaging process various protooncogenes become activated. These protooncogenes are scientifically prooven to be neuroprotective agents. These neuroprotective agents can also be activated by other stimuly as the presence on hypoxia, presence of some viruses variation of temperature and others.
Aim: The aim of our study was to show the animal model of nerve tissue damage prevention that can be used as a way of lowering the nerve tissue damage produced on humans during various interventions on the brain or other nerve tissues.
Methods and materials: The formation of neuroprotective proteins such as c-fos protein and neuropeptide Y was evaluated after repeated and non repeated ischemic attacks on brain sections of a group of 32 laboratory rats. The results were analized with the use of the semi- quantitative statistic method and graphically presented. We used the Pulsinelli ischaemic method, where laboratory rats have been treated and divided in three groups: The first (by ligature of four blood vessels i.e. coagulation of vertebral artery, with billateral ligature of carotid arteries), and the second group (by ligature of four blood vessels i.e. coagulation of vertebral artery, with bilateral repeated ligature of carotid arteries). The third group was the control group. The formation of neuroprotective proteins were determined by the use of avidin -biotin peroksidase immunohistochemical method.
Results: On the cross section of the rat brain that was not exposed to the ischemia (control), neuropeptide Y and c-fos protein was not observed. On rats with non-repeated ischemia conducted, the highest expression of neuropeptide Y and c-fos protein could be observed. In the group of rats with a repeated ischaemic attack been done, a small ammount of neuropeptide Y and c-fos protein was observed.
Conclusion: If neuroprotective proteins form in a large ammount, that would indicate that there might be a high level of tissue damage. The group of rats that was treated with two ischaemic attacks, one after another, showed a signifficantly lower neuroprotective protein expression and signifficantly lower nerve tissue damage after the second ischaemic attack. That could indicate that the first ischaemic attack on the nerve tissue of these group of rats has increased their resistance on future ischaemic attacks. If a human nerve tissue was treated with such stimuly that could increase the initial neuroprotective concentration in specific locations of the nerve tissue, and on that way increase the resistance of the nerve tissue, that could potentialy mean that the nerve tissue could have less damage during interventions that would involve ischaemic damage to the tissue.

Session: Biochemistry

Parameters of oxidative stress in blood of patients with rheumatoid arthritis

ESC-ID: 597
Authors: Stojiljkovic M, Zdraljevic N, Randjelovic M
Country: Serbia
University: University of Nis, Department: school of medicine

Introduction: Rheumatoid arthritis (RA) is a systemic autoimmune disease characterized by chronic inflammation of the synovial joints. Oxidative stress can be defined as a process in which the dynamic red-ox balance

between oxidants and antioxidants is intensely shifted towards oxidative potentials. In rheumatoid arthritis, inflammation is caused by mononuclear cells, which are responsible for respiratory burst characterized by an increased consumption of oxygen, anaerobic glycolysis and production of free radicals.
The aim: Our purpose was to investigate the parameters of oxidative stress in RA patients.
Materials and methods: This study was performed on 50 subjects, 35 patients with RA (diagnosed according to the revised set ARA criteria within 6 months from the onset of symptoms) and 15 healthy volunteers. The activity of antioxidative enzymes catalasa (CAT) and superoxide dismutase (SOD), and the product of lipid peroxidation malondialdehide (MDA, TBARS) were measured in plasma RA patients.
Results: The results showed statistically significant increase levels of plasma MDA in patients with RA compared to the control group ($p<0.001$). The activity of catalase was also significantly increased in patients with RA ($p=0.026$), but we didn't find differences between SOD activity in RA patients and in the group of healthy volunteers.
Conclusions In the pathogenesis of rheumatoid arthritis, oxidative stress has a significant role, in terms of increased lipid peroxidation and reduced activities of antioxidant enzymes. The increase of catalase activity in plasma RA patients may be due to the release of catalase from erythrocytes damaged by lipid peroxidation.

Nitric oxide and nitrosative stress as markers of endothelial dysfunction in juvenile type i diabetes

ESC-ID: 602
Authors: Stojanovic M, Nikolic N, Stankovic P
Country: Serbia
University: University of Nis , Department: School of medicine

Introduction: The endothelium is a key regulator of vascular function. Beside providing a mechanical barrier function it is a prolific synthetic organ that secretes a variety of products including-vasoconstrictors, vasodilators, growth modulators, and inflammatory products. Endothelial dysfunction accompanies poor glucose control in patients with type I diabetes mellitus. As a hallmark of endothelial dysfunction is a deficiency in production and/or bioavailability of vascular nitric oxide (NO).
Aim: The aim of the study was to investigate the level of stable end products of nitric oxide, plasma nitrate and nitrite (NOx), the level of carbonyl group (PCO) and nitrotyrosine (NTY) in diabetic children.
Materials and methods: The study included 16 diabetic children and age-matched control healthy children.
Results: Diabetic patients had significantly higher level of plasma nitrates and nitrites (28.98 + 6.67 vs 8.42 + 2.22micromol/l, $p<0.001$), as well as significantly higher level of plasma nitrotyrosine (24.2+4.78 vs 19.38 + 3.56 micromol/g prot, $p<0.05$) and carbonyl groups (10.4 + 3.45 vs 7.45 + 2.87 micromol/g prot, $p<0.05$), compared to control healthy age-matched subjects.
Conclusion: Observed results may suggest that hyperglycaemia and poor metabolic control can be causally linked to abnormality of peroxinitrite production, producing the nitration and oxidation of aromatic rings and hydroxyl groups of plasma proteins, leading do the alteration in NO metabolism. Alterations in NO availability represent the fundamental abnormality in the pathogenesis of atherosclerosis. The determination of NO release by the endothelium may be a useful marker of its health and may provide important ways to investigate vascular dysfunction in diabetes.

The impact of various therapeutic protocols on calcium and phosphorus metabolism in patients on hemodialysis

ESC-ID: 616
Authors: Randjelovic M, Zdraljevic N, Stojiljkovic M
Country: Serbia
University: University of Nis , Department: school of medicine

Introduction: Chronic kidney disease is a complex condition, where the decrease in kidney function is accompanied by numerous metabolic changes and one of the most important is chronic kidney disease-mineral and bone disorder. Given that the course of this disease is crucial to the concentration of minerals and hormones in the blood, treatment is necessary to achieve the values of these parameters be tightly defined borders.
The aim: Examination of different therapeutic protocols on the concentration of calcium, phosphorous, alkaline phosphatase activity and parathyroid hormone (PTH) levels in the blood of patients on hemodialysis.
Materials and methods: This study included 60 patients aged 56 ± 14 years on hemodialysis who were treated with calcium carbonate, alone and in combination with rocartrol or alphacalcidol. The patients were divided in three groups compared to the therapy. First group received only calcium carbonate, second group combination of calcium carbonate and rocartrol and third group combination of calcium carbonate and alphacalcidol. Compared to the PTH levels patients were also divided in three groups. The first group consisted of patients whose PTH concentration was less than 150 pg/ml, the second group of patients whose levels were between 150 and 300 pg/ml and in the third group PTH concentration was above 300 pg/ml. In all investigated groups were determined concentrations of calcium, phosphorus, alkaline phosphatase activity and levels of PTH.
Results: Concentration of calcium was significantly elevated in patients who received a combination of calcium carbonate and rocartrol compared to the group of patients who received only calcium carbonate or a combination of calcium carbonate with alphacalcidol. Patients who received a combination of calcium carbonate and alphacalcidol have significantly higher values of alkaline phosphatase activity compared to the group of patients who received only calcium carbonate or a combination of calcium carbonate and rocartrol. In patients who received calcium carbonate values of PTH were significantly lower compared to the group of patients who received a combination of calcium carbonate with rocartrol or alphacalcidol. The concentration of calcium was significantly elevated in patients with PTH levels greater than 300 pg/ml compared to the groups with PTH values between 150 and 300 pg/ml and lower than 150 pg/ml. In the group of patients with concentrations of PTH lower than 150 pg/ml alkaline phosphatase values were also significantly lower than in the groups with PTH

levels between 150 and 300 pg/ml and higher than 300pg/ml.
Conclusions In our research has found that calcium carbonate effectively suppress the growth of PTH than the combination of calcium carbonate with rocartrol and alphacalcidol. Rocartrol proved to be least effective in maintaining the concentration of calcium. The group that received a calcium carbonate and alphacalcidol shows significantly higher values of alkaline phosphatase activity than the other two groups, which indicates a faster and more intense metabolism in bones. Since the concentrations of calcium and phosphorus in this group were the lowest, use of these analogues has also its advantages so it is necessary the individual access to each patient.

TNFR type I and II polymorphism in lymphoproliferative diseases in Serbian population

ESC-ID: 628
Authors: Markovic DZ, Markovic-Zivkovic B, Stojanovic M, Jevtovic- Stoimenov T
Country: Serbia
University: University in Nis , Department: Department of Biochemistry

Aim: TNF-alpha and LT-alpha are involved in the pathogenesis of established lymphoproliferative diseases. Both molecules bind to TNFRI and TNFRII. TNFRI is the major mediator of the TNF pro-apoptotic and proliferative effects and TNFRII might potentates these effects. TNF receptors I and II are normally present on hematopoietic cells. TNFR II is characteristic only on immune cells, especially on peripheral leukocytes. Neoplastic B cells and activated B lymphocytes have increased expression of surface TNFR I. In this study, we have analyzed polymorphisms in TNFRI gene (TNFRI+36A/G SNP) and polymorphism in TNFRII gene (TNFRII + 676 T/G). All these polymorphisms were studied in patients with chronic lymphocytic leukemia's (CLL), patients with non-Hodgkin's lymphoma (NHL) and in healthy controls. The present study was undertaken to investigate the genetic association of these polymorphisms with lymproproliferative disease development.
Methods and Materials: A total of 68 patients (49-CLL, 19-HNL) were diagnosed by clinical findings and by conventional morphological, cytochemical and immunological tests. Genomic DNA was isolated from isolated lymphocytes by proteinase K/phenol/chloroform method, and genotyped for TNFR I (A36G) and TNFR II (T676G) using the PCR-RFLP method.
Results: No significant differences in allele frequencies of TNFR1 polymorphism were found between the patients with lymphoproliferative disease and healthy individuals. In a group of healthy individuals the study has revealed for the first time significantly higher TNFRI G/G genotype compared to the patients with lymphoproliferative disease (chi2 = 5,66; p = 0,017). Also, we reported the implication of TNFRII T allele in NHL pathogenesis, respectively (chi2 = 10,77; p = 0,001; Mantel-Haenszel: chi2 = 10,64; p = 0,0011). TNFR I polymorphism A36G is silent mutation responsible for mRNA instability, but not for TNFR I function. Our results showed that this polymorphism is predisposing factor for lymphoproliferative diseases, as well as it wasn't the cause of higher expression of this receptor on B leukemic cells and higher concentration of soluble receptors founded in sera of CLL and NHL patients. This polymorphism is often associated with TNFR II T676G polymorphism. T676G TNFR II polymorphism on exon 6 causes lover capability for NF/kB dependent genes induction. Product of those genes has anti/apoptotic and pro/inflammatory effects. Higher frequency of T alleles in group of NHL patients points out disturbance of programmed cell death.
Conclusion: Our data showed that TNFRII T676G polymorphisms have an important role in NHL pathogenesis but not in CLL patients. A/A polymorphism in TNFRI was not associated with CLL and NHL patients in Serbian population. Investigated polymorphismes on TNFR genes in leukemic cells of CLL and NHL patients haven't showed correlation with increased proliferation of B lymphocytes and increased expression of TNF R II on B CLL lymphocytes.

Incorporation of ManNAc analogues into sialic acids depending on UDP-GlcNAc 2-epimerase/ManNAc kinase (GNE) expression: a semiquantitative study

ESC-ID: 699
Authors: Böhrsch V, Müller H, Hackenberger CPR, Hinderlich S
Country: Germany
University: Charité – University medicine Berlin, Department: Medicine

Sialylation of glycoproteins and glycolipids on eukaryotic cell surfaces plays an important role during development, regeneration and in the pathogenesis of diseases. UDP-GlcNAc 2-epimerase/ManNAc kinase (GNE) is a key regulator of sialic acid biosynthesis. The biological importance of GNE is reflected in drastic reduction of cellular sialylation upon loss of enzyme activity, and knockout of the gene in mice is embryonic lethal. Our research focuses on the generation of cell lines as tools for the production of glycoproteins bearing altered sialylation. Here we show that reduction of GNE expression in HEK293 cells by shRNA-based methods results in severely reduced sialic acid content of cell surface glycans as detected by FACS analysis and colorimetric assays. By treatment of these GNE-deficient cell lines with the natural sialic acid precursor ManNAc virtually complete restoration of cell surface protein sialylation can be achieved. In comparison to controls the GNE-deficient cell lines show a strongly increased incorporation of ManNAc analogues, like peracetylated N-azidoacetyl-D-mannosamine (ManNAz), into glycans of cell surface proteins. Selective cleavage and labelling of the sialic acid residues revealed the relative incorporation of ManNAz to ManNAc via flourescence-based HPLC.

Comparative in vitro study of cytoprotective effects of proanthocyanidins in two mitomycin C - treated cell lines

ESC-ID: 731
Authors: Tomic M, Litricin S, Stankov K, Kojic V
Country: Serbia
University: University of Novi Sad, Department: Department of Biochemistry, Medical faculty

Aim: The main aim of our study was the investigation of antioxidant and cytoprotective effects of proanthocyanidins in normal and malignant cells treated with antitumor drug mitomycin C and comparison of their effects with N-acetyl cysteine. Proanthocyanidins are powerful natural polyphenolic antioxidants. They are present in fruit, vegetables, seeds, flowers and bark. Proanthocyanidins are well known for their antibacterial, antiviral, anti-inflammatory, antioxidant and antitumor effects. They also have regulatory effects on numerous enzyme systems. We investigated the antitumor and antioxidative properties of proanthocyanidins and their influence on normal and malignant cells, treated by the antitumor drug mitomycin C.
Material and methods: We used the continuous lines of normal and malignant cells: human erythroleukemia cells K562 and ovarian cells of Chinese hamster CHO-K1, which were cultivated in standard conditions. Cells were treated with mitomycin C, xanthine oxidase, N-acetyl cysteine and proanthocyanidins. We used the MTT assay to determine the concentation of compounds which inhibit cell growth by 50% (IC50) after three and twenty-four hours of cell treatment.
Results: CHO-K1 cells were more sensitive than K562 cells to the cytotoxic effect of mitomycin C and xanthine oxidase. Cytoprotection with N-acetyl cysteine showed a dose dependent effect in both cell lines. Proanthocyanidins reduced mitomycin C and xanthine oxidase cytotoxicity, but their effect was biphasic. At certain concentrations, proanthocyanidins even potentiated cytotoxic effects of mitomycin C and xanthine oxidase in normal but not in malignant cells group.
Conclusion: The protective effect of proanthocyanidins depended on their concentration, the type of cell line, antitumor drug activation by xanthine oxidase and the treatment period.

A functional role for Protein Phosphatase 2A in the mammalian circadian clock

ESC-ID: 818
Authors: Wendt S, Schlosser A, Wallach T, Maier B, Kramer A
Country: Germany
University: Charité – University medicine Berlin , Department: Medizinische Immunologie / AG Chronobiologie

Circadian clocks are endogenous oscillators that drive daily rhythms in physiology, metabolism and behavior. On the molecular level the dynamics of circadian oscillations (i.e. period, amplitude and phase) are regulated by a transcriptional-translational gene-regulatory network. In addition to transcriptional regulation, posttranslational modifications of clock proteins, such as reversible phosphorylation, are essential for the precise timing of an about 24 hour-period. By using a systematic RNAi-based high-throughput approach in oscillating human cells, we have screened for yet unknown phosphatases potentially involved in posttranslational control of the mammalian oscillator. Here we show that mammalian PP2A, which is the most abundant serine-threonine phosphatase that plays a critical role in cellular physiology (e.g. cell cycle regulation, cell proliferation) is essential for circadian rhythm generation. The PP2A core enzyme comprises a scaffold subunit and a catalytic subunit. To gain full activity towards specific substrates, the PP2A core enzyme interacts with a variable regulatory subunit to form a heterotrimeric holoenzyme. We show that simultaneously silencing of the PP2A catalytic subunits (Calpha, Cß) as well as the scaffold subunits (Aalpha, Aß) by RNAi result in an arrhythmic phenotype and largely disrupted mRNA expression profiles of canonical clock genes. As the regulatory subunits confer substrate specificity, activity, and intracellular localization of the PP2A enzyme, we additionally performed knockdowns of all known regulatory PP2A subunits resulting in two candidates (PR72alpha and PR55ß) that lengthened circadian period significantly and thus supporting a specific function for PP2A in the mammalian oscillator. Currently we are using co-immunoprecipitation studies to identify specific PP2A targets among core clock proteins. Furthermore we aim to investigate by a mass-spectrometrical approach, if ectopic expression of PP2A alters the phosphorylation status of its potential target genes within the mammalian clockwork. We anticipate our work to reveal a further essential gear that leads to better understanding on how posttranslational modifications impact a circadian oscillator dynamically.

The effect of knocking-down dexamethasone upregulated genes on phagocytic capacity of human macrophages

ESC-ID: 1000
Authors: Kristof EK, Zahuczky G, Fesus L
Country: Hungary
University: University of Debrecen, Dartment: Dept. of Biochemistry and Molecular Biology

Heading: The daily clearance of about 500 billion physiologically dying cells in the human body is performed safely mainly by the Mononuclear Phagocyte System. Deficiencies in clearing mechanisms can result in recurring inflammations, autoimmune diseases or malignant tumours. The anti-inflammatory and immunosuppressive effect of glucocorticoids is mainly explained by their transcription regulatory role on intracellular receptors. They have a remarkable positive action on the phagocytic capacity of human macrophages, but the underlying molecular mechanisms are not yet known.
Aim: Our Q-PCR based TaqMan Low Density Array (TLDA) measurements predicted the important role of several genes in the regulation of glucocorticoid augmented phagocytosis, since their expression level was highly elevated during the dexamethasone treatment. The goal of our investigations was to knock-down the five genes with the most remarkably enhanced induction (ADORA3, AXL, C1QA, MERTK, THBS1) in human macrophages by RNA interference and analyzing their phagocytic capacity.
Materials and Methods: Monocytes were isolated from human blood and after their differentiation siRNA was transfected into the cells by electroporation. The knock-down effect was controlled by real-time quantitative PCR

at transcriptional level after RNA isolation. To examine the phagocytic capacity of 5 days differentiated macrophages, apoptotic neutrophil granulocytes were isolated from human blood by Histopaque density-gradient centrifugation. The phagocytosis assay was performed using fluorescent labelled cells and the incorporated cell-rate was measured by flow cytometry. To prove the role of MERTK at protein level, macrophages were pre-incubated with blocking antibodies immediately before neutrophils were added before the phagocytosis assay was carried out even in the presence and absence of AB serum.
Results: Powerful knock-down effect was experienced at each of the five investigated genes, but significant decrease in phagocytic capacity ($p<0.01$) was observed only after knocking-down MERTK which could be increased by the simultaneous knock-down of AXL. Significant reduction of phagocytosis ($p<0.005$) was also noticed after macrophages were pre-incubated with MERTK blocking antibodies when AB serum was not present during the assay. In the presence of AB serum the decrease of phagocytic rate did not reach the significant range.
Conclusion: The glucocorticoids can play an important role in the regulation of restitution of inflammatrory processes in the human body. Our study proved that transmembrane tyrosin kinases MERTK and AXL play an essential role in the glucocorticoid augmented phagocytosis of human macrophages engulfing apoptotic cells such as spontaneous apoptotic neutrophil granulocytes.

The effect of folic acid therapy on the dynamic of RNase activity in human colostrum and mature milk

ESC-ID: 1053
Authors: Nikolic N, Stojanovic M, Nikolic M, Kocic G
Country: Serbia
University: University of Nis, Faculty of Medicine, Department: Biochemistry

Aim: The aim of the study was established to determine the set of activities of RNase in colostrum and mature milk during folic acid therapy. The study of the quantitative and qualitative changes involved the determination of total and free RNase activity, together with the determination of the RNase activity by using the double stranded RNA.
Materials and methods: The study included 45 women, who have given birth at our clinic, with normal delivery, without the existence of complications such as diabetes, hypertension or eclampsia, where 27 women received the synthetic preparation of folic acid in doses 400 μg per day, in accordance with international recommendations.
Results: The free RNase activity showed a tendency to increase, compared to the first sample of colostrum, but also in terms of action of folic acid, and the difference was significantly expressed after a month. The increase of free RNase activity was most probably not a consequence of de novo synthesis of enzymes in milk glands, because the total enzyme activity is lower in terms of folic acid treatment (expressed through the amount of inhibitor-tied enzymes, which is significantly lower in conditions of the folic acid treatment). After one month the amount of inhibitor-tied enzymes almost disappeared.
Conclusion: The activity of RNase in conditions of folic acid therapy was reduced when the substrate poly IC was used. The results obtained in our study showed that the activity of RNases varies not only quantitatively but also qualitatively, which favors the existence of different isoformes in human milk.

The effect of fruit and vegetable juices on acid-base statues of a body

ESC-ID: 1116
Authors: Anashkina E, Alipov A, Astapovich E
Country: Belarus
University: Gomel state medical university , Department: Medical

Introduction. Human blood pH is slightly alkaline (7.35 - 7.45). Below or above this range means symptoms and disease. The reason acidosis is more common in our society is mostly due to the typical diet, which is far too high in acid producing animal products like meat, eggs and dairy, and far too low in alkaline producing foods like fresh vegetables, most fruits, peas, beans, lentils, spices, herbs, seeds and nuts. The healthy diet should consist of 60% alkaline forming foods and 40% acid forming foods. Thus nutrition of fruit and vegetable juices is one way to maintain health, but some of them are rather acidic and according to the widely held belief their drinking would lead to ulcers and some other stomach diseases. The aim of our investigation was to check up the effect of fruit and vegetable juices on gastric juice acidity.
Materials and methods: We subdivided examined juices and beverages into five categories: (a) citric juices, (b) apple juices, (c) vegetable juices, (d) vitamins beverages and (e) carbonated beverages. Potentiometric method of investigation was applied to measure pH and buffer capacity of juices and beverages such as Coca-Cola, white-Cola, Darida and Fruit time. The buffer capacities characterize ability of juices and beverages to resist the pH changes after addition of acids and bases. In order to determine the effect of juices and beverages at gastric juice acidity we measured their volumes required to alter the pH of gastric juice by a unit. The obtained data allowed us to calculate the buffer capacity of gastric juice by drinks. We named this parameter a resistivity coefficient of gastric juice. The greater coefficient, the smaller is the effect of drinks on gastric juice acidity.
Discussion: The obtained data revealed that: (a) most acidic were carbonated beverages (pH values in a range 2.7-3.6) and citric juices (pH = 3.2-4.0). But they differed greatly in buffer capacity by acids (29 and 48 mmol/L) and by bases (10 and 35 mmol/L). As to the resistivity coefficient of gastric juice, it took high values for beverages (1.4-6.5 mmol/L) and rather low- for citric juices (0.0063-0.0075 mmol/L). Thus drinks with approximately identical pH values exhibited different activity in affecting acid-base equilibrium in stomach; (b) apple juice acidity was proved to be a bit lower than acidity of citric juices (pH = 3.5-4.5), but its resistivity coefficient of gastric juice was ten times greater in comparison with citric juices and ten times smaller in comparison with carbonated beverages; (c) vegetable juices, except tomato, are nearly neutral (pH = 6.1-6.3), but their effect at the gastric juice acidity is a strongest one: the resistivity coefficient was extremely low (4.7- 4.9), that confirmed the idea that not only pH, but buffer capacity was a parameter that signaled about drink effects on gastric juice activity;(d) for all categories of juices pH relates to resistivity coefficient of

gastric juice according to the equation: coefficient = pHx, where x took the values from -0.7 (apple juice) to -4 (vegetable juice).
Conclusions The experimental data revealed that pH is a powerful but not the only factor effecting acid-base equilibrium in gastric juice. More information about this phenomenon is given by buffer capacity of gastric juice by a beverage.

Involvement of cGMP signalling pathway in the regulation of cell viability in the breast cancer cell lines, MCF-7 and MDA-MB468

ESC-ID: 1136
Authors: Fallahian F, Karami-Tehrani F, Aghaei M
Country: Iran
University: Tarbiat modares university , Department: clinical biochemistry

cGMP is an important second messenger that mediates the action of several hormones, neurotransmitters, and drugs by regulating various physiological functions. Recently, the activation of protein kinase G (PKG) by cGMP has become of considerable interest as a novel molecular mechanism for the induction of apoptosis in cancer cells. Two major forms of PKG have been identified in mammalian cells, PKG I and PKG II. In addition, there are two splice variants of PKG I.This study investigates the involvement of cGMP and PKG in the cell proliferation using breast cancer cell lines MCF-7 and MDA-MB468 . To achieve this, 1-benzyl-3-(5P-droxymethyl-2P-furyl) indazole, YC-1 has been employed to directly activate soluble guanylyl cyclase and increase cGMP. In addition, the expression of PKG isoforms was studied in these cell lines. Furthermore, to assess the involvement of cGMP-dependent pathway in the cell growth inhibition, the effect of Rp-8-pCPT-cGMPS (a selective inhibitor of cGMP dependent protein kinase) was examined on the YC-1-induced cytotoxicity. YC-1 resulted in the cell, time- and dose-dependent, apoptosis which was accompanied by an increase in cGMP in these cell lines. Flow cytometric analysis of apoptosis was performed using AnnexinV staining. Having established that these cells express PKG, the effect of Rp-8-pCPT-cGMPS (a highly selective inhibitor of PKG) on the YC-1-induced cell death was investigated. The loss of viability caused by YC-1 was attenuated by Rp-8-pCPT-cGMPS significantly. Taken together, these results imply that the activation of PKG mediates an apoptotic pathway in these cell lines.

Diazoxide and cyclosporine A effects on oxidative phosphorylation in mitochondria isolated from ischemic rat hearts

ESC-ID: 1175
Authors: Mitica S, Mirica N, Duicu O, Lazarescu A, Raducan A, Fira-Mladinescu O, Muntean D
Country: Romania
University: University of Medicine and Pharmacy "Victor Babes" Timisoara , Department: Pathophysiology

Mitochondria are nowadays considered both target organelles in ischemic insults and putative end-effectors for cardioprotection. The present study was aimed at investigating the effects of diazoxide (Dx), an opener of mitochondrial of the mitochondrial ATP-dependent potassium channels and cyclosporine A (CsA), an desensitizer of the mitochondrial permeability transition pore, on mitochondrial respiration in the settings of experimental ischemia/reperfusion injury. Isolated rat hearts (n=5/group) have been subjected to a 30 min episode of global ischemia + 30 min of reperfusion. At the end of the reperfusion period mitochondria were isolated by means of differential centrifugation and randomized to receive: no other intervention (Controls), Dx (100 μM), CsA (0.2 μM) or their combination (drugs were added to mitochondria suspension). Oxygen consumption was measured at 37C by polarographic oxymetry in the presence of complex I (glutamate and malate) and complex II (succinate + amytal to inhibit complex I) substrates, respectively. Basal (State 2) and ADP-stimulated (State 3) respiratory rates were recorded and expressed as nanoatoms oxygen/min/mg protein. Respiratory control index (RCI) was calculated as the ratio between State 3 and 2 respiratory rates. Our data showed that Dx decreased State 3 respiration rate in mitochondria energized with succinate by 33% (191.4±88 natomO/min/mg with a RCI of 1.78±0.32). CsA but not Dx significantly increased State 2 respiratory rate for complex II dependent respiration ($p<0.05$ vs. Controls) and their association increased this uncoupling effect ($p<0.001$ vs. Dx and Controls). Dx slightly decreased whereas CsA significantly increased State 3 respiration rate in mitochondria energized with succinate, the latter effect being abolished by their association ($p<0.05$ vs. CsA). In isolated postischemic rat heart mitochondria association of diazoxide and cyclosporine A had differential effects on succinate-supported respiration, by increasing State 2 and decreasing State 3 respiratory rates, respectively.

Session: Biochemistry / Physiology – Poster

Markers of DNA fragmentation and oxidative stress in mononuclears of patients with acute myelogenous leukemia

ESC-ID: 612
Authors: Miljevic J, Rangelov T, Ciric K
Country: Serbia
University: University of Nis , Department: Medical Faculty

Introduction: Acute myeloid leukemia (AML) represents a group of clonal hematopoietic stem cell disorders in which both failure to differentiate and overproliferation in the stem cell compartment result in accumulation of non-functional cells termed myeloblasts. Oxidative stress and antioxidant enzyme alterations were one of the main ethiopathogenic factors in AML. Although, increased production of ROS and oxidative stress were non-proteins inducers of mitochondriadependent apoptosis, in acute leukemias disturbance of apoptosis process have been observed, and also leukemic cells resistant against proapoptotic agents.
Patients and methods: We have examined the activities of catalase (CAT), together with the levels of malondialdehyde (MDA) and deoxyribonuclease (DNase I) in mononuclear cells of AML patients and compared them with those of normal subjects of the same age.

Results: The activity of CAT and the level of MDA increased in AML mononuclear cells, while the activity of DNase I, as marker of DNA fragmentation was decreased.
Conclusions The aim of DNA fragmentation and oxidative stress markers in acute myelogenous leukemias, investigation was to contribute to better diagnostics and more efficient therapeutic approach to this diseases. On the basis of the results of this paper, we can conclude that investigation of this parameters could be of interests and that further investigation should focused on apoptosis disturbance.

In vitro testing of reductive activation and cytotoxicity of mitomycin C

ESC-ID: 768
Authors: Sklenarova Z
Country: Serbia
University: University of Novi Sad , Department: Medical Faculty

Aim: Quinone anticancer agents induce the formation of free radical intermediates during their enzymatic activation. Reactive oxygen species generated from mitomycin C may play a critical role in their toxicity to human tumor, but also to normal cells. The application of cytoprotective antioxidants may increase the therapeutic index of cytostatic therapy and to increase its efficacy, together with decrease of its toxicity towards normal cells.
The aim: Comparative analysis of cytoprotective effects of N-acetylcysteine and glutathione in oxidative stres caused by cytostatic drugs, by the analysis of malignant and normal cell lines.
Method: For the analysis of cytotoxicity of enzymatically activated mitomycin C, we used the malignant K562 and normal CHO-K1 cell lines, treated by mitomycin C and enzyme xanthine oxidase, and by antioxidants, N-acetylcysteine and glutathione. Cytotoxicity, indicated by the inhibition of 50% of cells, was evaluated by MTT test.
Results: The comparison of the cytotoxic effect induced by xanthine oxidase with the effect of mitomycin C + xanthine oxidase, showed the statistically significant increase in cytotoxicity ($p < 0.05$), due to the xanthine oxidase reductive activation of mitomycin C. The analysis of results of potential cytoprotective effects of natural thiol antioxidants such as N-acetylcysteine and glutathione, in both cell lines treated with mitomycin C + xanthine oxidase, in all analyzed groups, showed a statistically significant increase in the percentage of viable cells. This cytoprotective effect may be contributed to the activity of both antioxidants in all tested groups, in comparison with cells treated only with mitomycin C + xanthine oxidase, without the antioxidants supplementation.
Conclusion: According to our results, we may conclude that the redox enzymatic activation of mitomycin C by xanthin oxidase, induces statistically significant cytotoxicity, while the treatment by natural thiol antioxidants, N-acetylcysteine and glutathione, induced the statistically significant cytoprotection in both analyzed cell lines.

Leptin involvement on airways reactivity

ESC-ID: 959
Authors: Necula A, Cojocaru E, Petrescu BC, Dumitriu IL, Gurzu B, Slatineanu SM
Country: Romania
University: University of Medicine and Pharmacy „Gr. T. Popa" Iasi (Iasi City - Romania) , Department: Physiology

Literature data sustain the associations of airways reactiviy alteration on obesity and adipokines (proteins produced by adipose tissue). Leptin is an energy-regulating hormone, and serum concentration of leptin increase with obesity. Even if leptin and leptin receptors are expressed by the lung, their role on this level was not precisely established. Our aim was to investigate the effects of leptin on terbutaline-induced bronchodilatation and to what degree, if any, NO mediates the leptin actions. Experiments were performed on main left bronchus rings, precontracted with 10microM ACh, obtained from obese resistant (OR) or obese prone (OP) rats. On OP bronchi the terbutaline dose-response curve was shifted to the right and maximal relaxant effect was decressed up to 20%. Leptin pre-treatment did not significantly modify terbutaline relaxant effect on OR rats, but restored terbutaline effects on OP bronchi. Inhibition of all NO synthases (NOS) with 10microMN(G)-nitro L-arginine methyl ester, blocked the leptin effects. These results suggest that leptin could have protective effects on airway hyperresponsiveness, by stimulation of NO synthesis due to the activation mainly of constitutive NOS (cNOS).

Influence of autophagy on cell damage caused by UV radiation in L929 and B16 cell culture

ESC-ID: 1028
Authors: Ivkovic I, Prica M, Ivetic J, Trajkovic V
Country: Serbia
University: University of Belgrade , Department: Pharmacy

Introduction: Ultraviolet (UV) light is electromagnetic radiation with a wavelength shorter than that of visible light, but longer than x-rays. UV light causes many effects in cell. Autophagy is mechanism of cellular self eating, and it has protective role in extreme conditions, but in some cases it lead cell in programmed cell death type 2. Role of UV radiation in autophagy has not been investigated so far.
Objective: Objective of present study was to examine whether UV light could have some effects on autophagy in L929 and B16 cells in vitro.
Materials and methods: Cell viability was assessed by crystal violet staining. The presence of acidified autophagic vesicles was analyzed by flow cytometry in acridine orange-stained cells. ROS production was measured using DHR to stain cells. Cell death was assessed by measuring the concentration of lactate dehydrogenase supernatants.
Results: Results showed that UV light causes statistically significant and dose dependent decrease of cell viability. Also, it causes statistically significant increase of autophagy in short intervals of radiation, while no statistically significant increase of autophagy is observed longer intervals of radiation. UV light causes statistically significant increase of ROS production. If ROS produc-

tion is blocked, no statistically significant increase of autophagy is observed. Blocking of autophagy in its early stage leads to increase of cell death.
Conclusions Autophagy in UV light treatment is protective response, which protects cell from damage caused by ROS production. These results indicate potential usefulness of combination of UV light therapy and autophagy blocking in treatment of dermal diseases and tumors.

Years-long piano playing and reaction times

ESC-ID: 1035
Authors: Hlozan V, Ivetić
Country: Serbia
University: Medícíuski fakultet, Uníverzitet u Novom Sadu, Department: General medicine

Aim: The objective of this research was to determine whether high-school of music students have shorter simple and choice reaction times than grammar school students. Also the objectives were to link reaction time values to personality type and determine the effect of finger activity just before the measurement of reaction time.
Methods and materials: Subjects were 16 high school of music female piano students (16y 9m ± 11m old) and 17 grammar school female students of the same age (16y 10m ± 15m old). To participate in this research, subjects had to fulfill some prerequisites regarding their daily routine and sports activities. The most important condition was on the subject of playing a musical instrument. In order to take part in the experiment, piano students should have played the instrument for at least 7 years. Condition for grammar school students was that they didn't play any musical instrument for the last 3 years. Measurements of reaction times were done on a computer program Inquisit 3, and personality type was determined using the Eysenck's test. Experiment consisted of 2 acts of reaction time measurement, each of them consisting of 15 simple visual, 15 simple auditory and 15 choice visual stimuli. Responses for stimuli were the SPACE key for simple reaction times, and numbers on the numeric keypad for choice reaction time. In order to test the effect of finger activity on reaction time, there was a break between the two acts of measurement, during which subjects had different tasks. 8 of the piano students played the piano, 9 of grammar school student wrote a predefined text on a PC-keyboard and the rest of them relaxed without any significant finger activity.
Results: Piano students had shorter reaction times on all of the stimuli types. The biggest difference was in reaction to simple auditory stimuli (172,9 to 202,4 ms). They also showed more consistent reaction times. Subjects prone to lying had longer and more variable choice reaction times then the honest ones (486,1 ± 114,3 to 448,3 ± 98,1 ms). Subjects who were characterized as neurotic by the personality test had prolonged and are inconsistent choice reaction time than those judged as stable personalities. (478,1 ± 109,3 to 453,5 ± 101,4 ms). Subjects who had some finger activity during the break reacted faster to simple audio and slower to simple visual stimuli. All of them had a reduction in choice reaction time after the break as a result of practicing the movement necessary to tap the required key on the keyboard. All of the results were tested using T-test, but none of them showed statistical significance, most probably due to relatively small number of test subjects and inconsistency of the measured reaction time values.
Conclusions Experience of playing the piano reduces reaction time and increases its consistency. Neurotic and people prone to lying have longer and more variable choice reaction time. Fatigue prolongs reaction time, and appropriate level of training and arousal shortens it.

Protective role of agmatine on oxidative and nitrossative stress ina brain rats with experimentally autoimmune encephalomielythis

ESC-ID: 1044
Authors: Zabar K
Country: Serbia
University: Medical university of Nis, Department of Biochemistry

Introduction: Experimental autoimmune encephalomyelitis is inflammatory demyelinating CNS disease.
Aim: Investigate of exogenous agmatine influence on NO production and concetration of MDA,GSH, SOD activity in brain of EAE rats.
Material and methods: EAE was induced by subcutaneous injection of myelin basic protein (MBP 50 mg per animal). Wistar rats were divided into five groups: I group-(C) treated by 0.9% rastvor NaCl (i.p.) during experiment course, II group (EAE), III group (CFA)-CFA (0.2 ml subcutaneously), IV group (EAE+Agm) treated by agmatine (75 mg/kg bw i.p.) upon EAE and V group (Agm) received only agmatine in the same dose.The animals were treated every day during experiment from day 0 to 15 and sacrificed on day 16 from MBP application. MDA, GSH, NO2 + NO3 concentrations and SOD activity in cerebellum homogenate of EAE rats were determined.
Results: Increased MDA concentration (26.34 ± 6.49nmol/mg prot.;$p<0.001$) and decreased GSH level (12.36 ± 2.59nmol/mg prot.; $p<0.001$)and SOD activity(0.59 ± 0.09U/mg prot.; $p<0.001$) in cerebellum homogenate of EAE rats related to control values (12.89 ± 3.56;15.48 ± 3.51;0.94 ± 0,14), prove the existance of oxidative stress. The treatment of EAE animals with agmatine decreased MDA concentration and increased levels of GSH and SOD acitivity.NO2+NO3 concentration in EAE rat brain was increased (348.34 ± 30.49 nmol/mg prot.;$p<0.001$) compared to control values (198,89 ± 26,56). Agmatine treatment diminishes NO2+NO3 concentration in EAE animals.
Conclusion: Oxidative and nitrosative stress is the part of inflammatory response to EAE in rats. These changes are successfully supressed by agmatine application, which could be the the new aspect of the mechanisms underlying the neuroprotective effects of agmatine.

The importance of research of lactate dehydrogenase isoenzyme profiles in diagnosig myeloblastic leukemia.

ESC-ID: 1048
Authors: Belic J, Bajin-Katic K
Country: Serbia
University: University of Novi Sad, Faculty of Medicine, Department: Pharmacy

Introduction: Lactate dehydrogenase (LDH) is an enzyme of hydrogen activator, which oxidizes organic compounds by depriving them of hydrogen. LDH catalyses reduction of lactic acide to pyruvate and has a significant role to play in carbohydrates metabolism. The most typical feature of malignant tumors is intensive glycolysis and the activities of glycolitic enzymes in malignant tumors, especially those of LDH. The important fact is that most malignant tumors show isoenzyme profile LDH, which differs from the one in healthy tissues.
Aim: Overwhelm vertical disc-electrophoresis in polycrylamid gel and estimate the possibility of applying this method in detecting isoenzyme expression changes in malignant tissues. Should there be a difference between the profiles of LDH activities in healthy tissue and malignant neoplasma, estimate the possibility of applying this parameter in malignant disease diagnostics.
Material and methods: Blood serum samples were obtained from healthy blood donors and from the patients diagnosed with acute myeloblastic leukemia. Disc electrophoresis was carried out using Brawer and Ashworth methodology with minor modifications. The analysis was done on a device of our own manufacture, constructed according to a draft of „Pleuger“ company. The results were photoed and analysed.
Results: Blood serume of healthy people was dominated by fast isoenzymes. Most LDH izoenzyme activities are found in quick-moving fractions LDH1, LDH2 and LDH3. The most valuable result we obtained is the change to LDH isoenzyme profile which manifests itself in decreasing LDH1 and increasing LDH5 isoenzymes in a malignant disease.
Conclusions Our research undoubtedly confirmed alteration in isoenzyme profiles of LDH5 in blood serum of patients with myeloblastic leukemia. Vertical disc-electrophoresis on polycrylamid gel is an extremely sensitive method which detects subtle changes and has a great segregation power. This difference in LDH activity in healthy people and in those suffering from myeloblastic leukemia represents a significant marker in diagnosing malignant diseases and it can contribute to reaching a more precise diagnosis, applying differential diagnostics.

An electrophysiological approach to cranial neoplasms: The assesment of visual evoked potentials on patients with optic gliomas.

ESC-ID: 1072
Authors: Ser OS, Ustun B
Country: Turkey
University: Istanbul University , Department: Cerrahpasa Medical Faculty English Department

Introduction: Gliomas are tumors that arise from the glial cells of the central nervous system, thus localised in the brain parenchyma. Optic gliomas are the division that affect the single or bilateral optic nerves or the optic chiasm and cause various sysmptoms such as visual loss, uncontrolled eyeball movement and bulging. They are seen almost always in the first or second decade of the life presenting a slow growth pattern with benign behaviour but with an unknown etiology. The optic disfunction is expected to be caused from the overgrowth of the vicinal tissue and pressure on both the nerve itself and the hypoperfusion to the nerve by the compression to the important supporting system.
Aim: The purpose of this research is to obtain elecrophysiological documentation and prove the possible significant delay in the afferent visual innervation of patients with optic gliomas by using VEP records.
Methods: Within the scope of the research, 15 optic glioma cases have been focused on, whose VEP readings had been made in the electrophysiological laboratories of Istanbul University Cerrahpasa Medical Faculty Physiology Department. The standards of the International Committee of Visual Electrophysiology have been extensively provided during the readings. 15 subjects with close intervals of age with the actual patients have been worked on as the control group. Then the results are discussed using the Mann-Whitney U test. Outcomes lesser than 0,05 are admitted to be significant. ($p<0,05$)
Results: VEP results of the patients with optic gliomas are found significantly longer than the results of the control group subjects.
Conclusion: Variety of radiological or invasive tests are performed for the screening, diagnosis and follow-up of patients with optic gliomas. This study is an initiative of an electrophysiological approach to the topic which will provide a precise method for the assesment of the progression of the treatment.

Cardioprotective effects of magnesium orotate against ischemia-reperfusion injury: An experimental study in langendorff perfused rat hearts and isolated mitochondria

ESC-ID: 1173
Authors: Luculescu MD, Mirica SN, Duicu O, Raducan A, Sturza A, Fira-Mladinescu O, Muntean D
Country: Romania
University: University of Medicine and Pharmacy "Victor Babes" Timisoara, Romania , Department: Department of Pathophysiology

Orotic acid and its derivates have been shown to exert protective effects on cardiovascular system in several experimental models of ischemia/reperfusion (I/R) injury but the mechanisms underlying cardioprotection are not completely elucidated. The present study was aimed at investigating the effects of magnesium orotate (Mg-O) in two experimental settings: (i) isolated rat hearts (n=6/group) subjected or not to 30 min global ischemia and 120 minutes of reperfusion for the assessment of contractile function and in (ii) isolated rat heart mitochondria from treated or not treated with Mg-O (n=5/group) for the study of oxygen consumption by respirometry. Post-ischemic functional recovery was assessed by means of the left ventricular developed pressure (LVDP) and the first derivative of left ventricular pressure (± dLVP/dt) expressed as percentage of their pre-ischemic values. Basal (State 2) and

ADP-stimulated (State 3) respiratory rates were recorded and respiratory control index (RCI) was calculated. Mg-O induced a substantial recovery of contractile function (LVDP, 62 ±3% vs. 45± 4% in Control, p<0.01). No differences were found in respiratory rates between treated vs. non-treated animals with complex I-dependent substrates (glutamate and malate). In the presence of complex II-dependent substrate (succinate) respiratory rates significantly increased by 75% in State 2 and by 38% in State 3 ($p < 0.01$) and RCI decreased by 21% ($p < 0.05$). In isolated rat hearts, Mg-O elicited a significant improvement in post-ischemic recovery of contractile function together with a substrate-dependent mitochondrial uncoupling, with the latter effect at least partially contributing to cardioprotection against reperfusion injury. Research supported by : The National Authority for Scientific Research Grant 42-122/2008 and the University Research Contract 8847/2009.

Thiopyrano[2,3-d]thiazol-2-ones as precursors of new drugs. Synthesis and antineoplastic activity of new derivatives

ESC-ID: 1254
Authors: Atamanyuk V, Atamanyuk D
Country: Ukraine
University: Danylo Halytsky Lviv National Medical University, Department: Pharmaceutical, organic and bioorganic chem.

Introduction: Identification of a large group of cell biotargets last decades promoted profound studies and understanding of details of realization of pharmacological agents' activity, and increase of hit and lead compounds discovery. This played a key role in development of pharmacological potential of 4-thiazolidinones, which are synthetic precursors of a wide range of fused heterocycles. Despite sporadic investigations of pharmacological potential of thiopyrano[2,3-d]thiazoles in literature, a wide spectrum of action of this fused heterocycles was discovered, that determines a perspective of thiopyrano[2,3-d]thiazol-2-one derivatives in modern process of drug discovery. Aim of our research was to synthesize new thiopirano[2,3-d]thiazol-2-ones as potential biologically active compounds and to establish biological activity of studied class of compounds.
Methods and materials: Hetero-Diels-Alder reaction was chosen as the basis for synthesis of target compounds. 5-Ethoxymethylidene-4-thioxo-2-thiazolidinone was used as heterodiene, that can be obtained due to reaction of 4-thioxo-2-thiazolidinone and ethyl orthoformate. Structure and purity of synthesized compounds were confirmed by NMR (1' and 13~) and EI-MS methods. Anticancer assays were performed in National Cancer Institute (USA). On the first stage of investigation (in vitro) was studied an effect of 10-5 Í solutions of studied compounds on mitotic activity of cancer cells (60 lines).
Results: Number of reactions was studied with dienophiles like acrolein, crotonic aldehyde, acetylenedicarboxylic acid and its methyl ester, benzoylacrylic acids, 2-norbornene, 5-norbornene-2,3-dicarboxylic acid imides and naphtoquinone with 5-ethoxymethylidene-4-thioxo-2-thiazolidinone, some peculiarities concerning diene properties where observed. One should note, using of 5-ethoxymethylidene-4-thioxo-2-thiazolidone in hetero-Diels-Alder reaction with dienophiles in glacial acetic acid the intermediate of [4+2]-cyclocondensation product undergoes spontaneous elimination of ethanol molecule, forming new endocyclic double bond which was confirmed by EI-MS and NMR spectra. Reaction of 5-ethoxymethylidene-4-thioxo-2-thiazolidone and 1,4-naphtoquinone was accompanied with characteristic oxidation of intermediate by the excess of hydroquinone with formation of additional endocyclic double bonds system to obtain 1,4-dithia-3-aza-cyclopenta[b]anthracene-2,5,10-trione (Les-3377). Eighteen new thiopyrano[2,3-d]thiazol-2-one derivatives were synthesized. Up to date the best results of antiproliferative assays were observed for Les-3377 (cell line: SK-MEL-5 (Melanoma), OVCAR-3 (Ovarian cancer), MDA-MB-435 (Breast cancer); Growth percent: -88.14 %, -47.67 %, -42.55 % respectively at concentration 10-5 Í).
Conclusions Lead-compound Les-3377 with high degree of inhibition of melanoma (SK-MEL-5), ovarian cancer (OVCAR-3) and breast cancer (MDA-MB-435) cell proliferation has been identified that determines the prospect of further modification of leads and investigation of their properties as antineoplastic agents.

Comparison of optical techniques for measuring cortical blood flow in newborn piglets – The use of laser-speckle contrast analysis (LASCA)

ESC-ID: 1320
Authors: Olah O, Zoléi D, Toth-Szuki V, Bari F, Smausz T, Domoki F
Country: Hungary
University: University of Szeged - Faculty of Medicine , Department: artment of Physiology

Introduction: Perinatal asphyxia is the major cause of serious brain damage in newborns. The hypoxic events can provoke the impairment of the neurovascular unit, which is the functional and morphological unit of various cell types serving the metabolic homeostasis of neurons. So far we assessed neurovascular unit function using closed cranial window/intravital videomicroscopy (IV) and laser-Doppler flowmetry (LDF) in newborn piglets. Laser-speckle contrast analysis (LASCA) is a new optical method for semiquantitative analysis of the microcirculation, which probably can combine the two dimensional images of IV with the high temporal resolution of LDF. The connection between speckle contrast (K) and velocity (v) of moving particles is the so called correlation time (t), therefore, the aim of LASCA is to accurately determine $1/t \sim v$. Our previous ex vivo results suggest that may be more accurately determined by plotting the exposure time speckle contrast function.
Aims: This study examined if we can obtain laser-speckle contrast images through the closed cranial window to study the cortical microcirculation in the piglet, and if changes in cortical blood flow (CoBF) determined with LASCA can yield results that correspond with our previous results on pial arteriolar diameter changes obtained with IV.
Materials and methods: Anesthetized, ventilated newborn (<1-day old) piglets were used (n=10). A closed cranial window was inserted over the left parietal cortex. Pial arteriole diameters were measured by IV and speckle image series (laser diode: 200mW, l=808nm; 0,5-100ms exposure times) were taken to determine t. Laser Doppler

probes were fixed above the right frontal and parietal lobes for local CoBF measurement. The following vasoactive stimuli were tested: ventilation with 5-10% CO2, or H2-supplemented room air (2,1% H2; 21% O2; 76,9% N2), and topical application of 1-10μM bradykinin, or 100μM N-methyl-D-aspartate (NMDA). Arterial blood pressure and rectal temperature were monitored continuously, and the blood gas values were regularly determined.
Results: 5-10% CO2 resulted in dose-dependent increases in CoBF determined by LASCA: % increases from baseline were 72 ± 8%* and 130 ± 20%* respectively. Similarly, 1-10μM bradikynin also resulted in concentration-dependent increases in CoBF, the values were 23 ± 10% 68 ± 14%*, respectively (mean ± SEM; *p<0,05). These results show good correlation with our measurements in pial arteriolar diameters and also with the results obtained by other methods presented in the literature. The LASCA analysis appeared to be clearly superior to LDF in detecting CoBF changes in response to local vasodilator stimuli (bradykinin and NMDA application)
Conclusions Our data suggest that LASCA can be successfully applied in our experimental model and even may be more suitable and precise to approximate CoBF changes when studying the neurovascular unit function.

Modulation of myocardial PPAR-alpha gene expression regulation with a high-calorie diet in a experimental model of heart failure

ESC-ID: 1335
Authors: Oliveira Pinto J, Vasques-Novoa F, Figueiredo-Pinto D, Lourenco AP, Leite-Moreira AF
Country: Portugal
University: Faculty of Medicine of University of Porto, Department: Physiology

Background: Heart failure (HF) is a leading cause of death in the developed world. In advanced stages, alterations in myocardial energy substrate metabolism like decreased fatty acid (FA) oxidation and increased glycolysis and glucose oxidation may lead mitochondrial and myocardial dysfunction. PPAR-alpha (PPARa) is one of the heart's metabolic master regulators whose activation seems to be dependent on FA and its function is impaired in HF. Although a western-type diet is an established risk factor for the development of cardiovascular disease, hyperlipidic diet regimens could modulate PPARa activation in advanced HF improving myocardial performance. Our goal was to study the effects a western-type diet on PPARa activation and on the expression of PPARa regulated genes in a experimental model of pulmonary hypertension and HF.
Methods: Male Wistar rats (180-200mg) randomly underwent (i) subcutaneous injection of 60mg.Kg-1 monocrotaline (MCT) or vehicle (Ctrl) and (ii) feeding with either a 5.4 kcal.g-1, 35% simple carbohydrate and 35% animal fat (high-calorie diet, HCD), or a 2.9 Kcal.g-1, 60% complex carbohydrate and 3% vegetable fat (normal diet, ND). Right (RV) and left ventricular (LV) haemodynamics were evaluated 5 weeks later and samples were collected for molecular analysis. PPARa activation was quantified in nuclear extracts and gene expression of PPARa regulated genes (UCP3, PDK4, LCAD, CPT-1b and ACSL1) were quantified by real time RT-PCR a normalized for beta-actin. Groups were compared with two-way ANOVA. Quantitative variables: mean ± SEM. P<0.05 considered significant.
Results: Although MCT groups presented increased RV maximal pressure, and similar degrees of RV hypertrophy, compared with their respective Ctrl groups. MCT HCD showed a significant reduction in RV maximal pressure compared with MCT ND. These changes were accompanied by improved LV myocardial systolic and diastolic function indexes. MCT fed ND showed increased activation of PPARa in RV and decreased activation in LV compared with ND fed Ctrl, whereas MCT fed HCD presented normalization of PPARa activation values. PDK4 and UCP3 gene expression was decreased in the RV of MCT fed ND, while the MCT fed HCD showed no differences from Ctrl ND. As to the gene expression of FA oxidation enzymes (ACSL1, CPT1b and MCAD), normalization was obtained in MCT HCD compared with the respective controls.
Conclusions Contrarily to their effects on the healthy heart's function, western-type diets may have beneficial actions in advanced or end-stage, attenuating the metabolic shift to increased glucose oxidation and improving myocardial perfomance.

Cardiovascular physiology misconceptions: effect of usual teaching on relief it

ESC-ID: 1381
Authors: Tahere nejad MR, Jand A, Palizvan MR
Country: Iran
University: Arak university of medical sciences , Department: physiology

Background: Misconceptions are mental models of phenomena that are at variance with accepted scientific models of these phenomena. The propose of this study was twofold 1) to investigate the prevalence of cardiovascular misconceptions among students and 2) to evaluate the effectiveness of general learning activity for relief of these misconceptions.
Materials and *Methods:* In this study 348 undergraduates in three different faculties were asked to answer to four cardiovascular questions.
Results: 1- the prevalence of misconception about comparison of left and right ventricular out put ranged from 80 to 98%. 2- a misconception about pulse velocity as compare to blood velocity in vessel was found in 79 to 84% of students. 3- between 95 to 96% of answers about the effect of increase resistance on blood flow was incorrect in all groups. 4- between 69 to 73% of student had trouble with parallel resistance and effect of removal of one limb on total peripheral resistance. 5- In the most questions usual teaching had not effect on relief of these misconceptions.
Conclusion: This results indicate that misconceptions persist until the learner confronts these shortcomings and that it is necessary that we change our teaching.

Session: Cardiology 1

Impact of beta1-adrenoceptor polymorphism on antiarrhythmic action of flecainide in patients with atrial fibrillation

ESC-ID: 634
Authors: Nia AM, Zimmermann T, Caglayan E, Gassanov N, Dahlem KM, Ederer S, Aghajanzadeh D, Er F
Country: Germany
University: University of Cologne , Department: Department of Internal Medicine III

Background: The class Ic antiarrhythmic drug flecainide is regularly used for pharmacological cardioversion of patients with atrial fibrillation. In some patients flecainide is not successful in sinus rhythm restoration. The antiarrhythmic effect of flecainide is based on inhibition of rapid sodium channel current. Due to decreased sodium influx myocardial refractory period is prolonged. It is known that beta-1 adrenoceptor (β1-AR) activation induces a sodium channel blockade, too. In the last years a different β1-AR variants with distinct response to catecholamines have been identified. The most important polymorphism is based on a single nucleotide variation at position 389, where arginine is substituted by a glycine. Whether these variants interfere differently with flecainide-induced sodium channel blockade or not is not known. The aim of the present study was to evaluate the predictive role of different β1-AR genotypes on antiarrhythmic action of flecainide in patients with atrial fibrillation.
Methods: In 145 subjects, 87 with atrial fibrillation, genotyping was performed by polymerase chain reaction after isolating DNA from peripheral blood samples. Thereafter individual β1-AR Arg389Gly polymorphisms were identified as which we used southern blotting to detect the variant of β1AR. Resting heart rate during atrial fibrillation and success of flecainide-induced cardioversion were correlated with β1-AR genotype.
Results: Patients with Arg389Arg genotype revealed the highest cardioversion rate of 55.5% (OR 3.30; 95% CI; 1.34-8.13; p = 0.003) compared to patients with Arg389Gly (29.5%; OR 0.44; 95% CI; 0.18-1.06; p = 0.066) and Gly389Gly (14%; OR 0.24; 95% CI 0.03-2.07; p = 0.17) variants. In patients with Arg389Arg genotype heart rate during atrial fibrillation was significantly higher (110 ± 2.7 bpm; p = 0.03 vs. other variants) compared to Arg389Gly (104.8 ± 2.4 bpm) and Gly389Gly (96.9 ± 5.8 bpm) carriers. The allele distribution was similar in patients with and without atrial fibrillation.
Conclusion: The influences of β1-AR polymorphism on antiarrhythmic drug therapy are currently underestimated and might have a pivotal role in antiarrhythmic therapy options. We found that flecainide success in cardioversion is significantly increased in patients with β1-AR Arg389Arg genotype compared to the variant with Gly389. Further studies are needed to prove our hypothesis and to discover whether this observation can be generalized for other sodium or multi-channel blockers.

A comparison of percutaneus coronary intervention utilizing first and second generation drug eluting stents in patients with acute coronary syndromes

ESC-ID: 646
Authors: Jelonek M, Buszman PP, Poplicha D, Skowron W, Krajciewicz A, Gorycki B, Prokopczuk J, Kondys M, Trznadel S, Buszman PE
Country: Poland
University: American Heart of Poland , Department: Cardiology

Introduction: There are no data reporting long term superiority of second generation over first generation drug eluting stents implanted in patients with acute coronary syndromes (ACS).
Method and results: This is a multicenter retrospective „all comers"? registry of 436 patients with ACS, in whom percutaneous coronary intervention (PCI) utilizing drug eluting stents (DES) was performed. One hundred and twenty one sirolimus eluting stents (SES, Cypher), 128 biolimus eluting stenst (BES, Biomatrix), 91 zotarolimus (ZES, Endeavor Resolute) and 97 everolimus (EES, Xience) were implanted. SES were defined as first (DES1, n = 121), while ZES, EES and BES as second generation DES (DES2, n = 315). The study groups were comparable with regard to baseline demographic clinical and procedural characteristics, however there were more incidents of ST elevation myocardial infarctions (STEMI) in DES2 group (27,8% vs. 18,1%; p = 0,03)
Results: There were no differences in mortality and major adverse cardiovascular and cerebrall events (MACCE) in the periprocedural period between the groups. At one year follow up the incidence of MACCE (7.6 vs. 15.7% p = 0.01) and any cause mortality (5 vs. 1.6% p = 0.04) were lower in the DES 2 group when compared with DES 1. There was also a trend toward lower cardiac mortality (4.4 vs. 0.8% p = 0.05) and the rate of repeated revascularization (10 vs. 5.4% p = 0.09) in favor of DES 2 group. The estimated long term survival, freedom from MACCE and repeated revascularization was higher in the DES 2 group. Implantation of the II nd. generation DES was the only independent factor decreasing the risk of long term MACCE (RR:0.5 95% CI:0,3-0,9)
Conclusions: Despite higher number of STEMI in DES 2 group, the one year mortality was lower in this group when compared with DES1. Large randomized trial is needed to confirm this hypothesis generating registry.

Multiple stents implantation in infarct-related artery during primary PCI for STEMI

ESC-ID: 800
Authors: Skowronek J, Ranosz P, Siudak Z, Dudek D
Country: Poland
University: Jagiellonian University
Department: 2nd department of cardiology

Background: Primary PCI (PPCI) of culprit lesion only in infarct-related artery (IRA), in non-shock patients is the preferred method of treatment.
Aim: The aim of the study was to seek if multiple (2 or more) stents implantation within IRA to cover all lesions

in the acute phase of STEMI is associated with better outcome.
Methods: Consecutive data on 1650 STEMI patients transferred for PPCI were gathered. Patients were allocated into 2 study groups: only 1 stent in IRA during PPCI (OS) and 2 or more stents in IRA during PPCI (MS).
Results: There were 1428 patients with stent implantation (86.5%) in the registry. One stent in IRA was implanted in 1122 patients (OS group) and 2 or more stents in 306 patients (MS group). Patients in both groups did not differ in baseline demographic characteristics and time delays in receiving reperfusion treatment. Also TIMI flow in IRA before PCI was similar. There were more patients with multivessel disease (62% vs 48%, p<0.001) and more treated with DES stents (39% vs 23%, p<0.001) in MS group. Difference in angiographic outcome in both groups was observed: No-reflow (2% vs 7%, p<0,001), TIMI 3 flow after PCI (93% vs 90%, p=0,004), ST resolution>50% after PCI (80% vs 73%, p=0,007).
Conclusions: Primary PCI with 2 or more stents in IRA is associated with worse immediate angiographic outcome and impaired reperfusion parameters. However, no differences in long-term clinical follow-up were observed in comparison to patients with one stent only.

Mathematical modeling of a rotary blood pump in a pulsatile flow environment

ESC-ID: 957
Authors: Pirbodaghi T, Vandenberghe S
Country: Switzerland
University: Bern , Department: ARTORG Center

Mechanical support of the heart with blood pumps is becoming a promising option for the treatment of end-stage heart failure. The newer generation devices are all based on turbodynamic pumps (rotary blood pumps, RBPs) because of their smaller size, efficient operation, and easy control. To develop a reliable control algorithm for RBPs and to investigate their interaction with the heart, mathematical simulations are a fast and cheap tool. For such simulations, it is necessary to have a model representing the dynamic function of RBPs. The goal of this study is to derive such a model for a clinically available VAD (CentriMag, Levitronix GmbH, Zurich, Switzerland). The proposed mathematical pump model contains terms for the effects of angular velocity and angular acceleration, pressure head, flow and flow acceleration. The in vitro setup used for deriving model parameters contains a piston pump, a compliance chamber, a peripheral resistor, a venous overflow reservoir, and the CentriMag RBP. 40% glycerin-water mixture was used as a blood analog fluid. First, sinusoidal flow was generated by the piston pump while the RBP was running under a combination of different speed waveforms (sine wave, chirp wave, step function and constant speed) to completely capture the dynamic behavior of the RBP. All variables from the model were physically measured and digitally acquired. Then, an identification algorithm based on least square fitting was used to derive the model parameters. After that, the completed model was validated with a totally different set of in vitro data covering a wide range of clinical operating conditions. Final verification was performed with in vivo data obtained from a CentriMag implant in sheep. The range of identification data was: flow 0:220 ml/sec, flow derivative -600:600 ml/sec2 , pressure head 0:150 mmHg, RBP speed 100:360 rad/sec and RBP acceleration -1000:1000 rad/sec2. After successful converging of the identification algorithm, the model was used to estimate pump flow from measured pressure head and vice versa. For all the validation data good agreement was found between estimated and real variables (RMSE 3.2 ml/s for flow and 7.3 mmHg for pressure head).
In conclusion, the derived model can reproduce the relationship between pressure head, flow and angular speed of the RBP accurately under a wide range of steady and pulsatile conditions. Therefore, this model is suitable for use in simulations and as a non-invasive pressure estimation for clinical use.

Establishment of an individual human cell bank consisting of umbilical cord cells for the tissue engineering of heart valves under good manufacturing practice (GMP) conditions

ESC-ID: 1161
Authors: Polchow B, Hetzer R, Lueders C
Country: Germany
University: Deutsches Herzzentrum Berlin , Department: Laboratory for Tissue Engineering

Aim: Fabricated tissue-engineered autologous heart valves that are able to integrate, to grow and to regenerate are a promising alternative to conventional heart valve prostheses, especially for pediatric patients. The basis for tissue engineering of heart valves are amongst others a biodegradable carrier material and an adequate cell source. Vascular cells from the human umbilical cord are a potential cell source for tissue engineering of heart valves. These cells from umbilical cords of pediatric patients can be directly isolated after birth and can be cryopreserved until needed for tissue engineering. Currently no cell bank with human vascular cells is available. Therefore it is necessary to establish a cell bank consisting of umbilical cord cells under GMP conditions.
Methods and Materials: The first fundamental step was to adapt research and development conventional agents to agents conforming to GMP for the cell isolation, cell cultivation and cryopreservation process. Human umbilical vein endothelial cells (HUVEC) and myofibroblasts were isolated from vessels of fresh cords by enzymatic digestion and mechanically. Confluent cells were cryopreserved in different freezing media to obtain optimal cell viability and growth kinetics after thawing. Cultivation of fresh and cryopreserved cells was accomplished over several passages with respect to comparative analysis of morphology and growth potential. During cultivation, cells were characterized by FACS analysis and immunofluorescence staining to detect cell-specific markers.
Results: Satisfactory amounts of cells from cord vessels were isolated with GMP agents. Cryopreservation media tests for myofibroblasts demonstrated that cells cryopreserved in medium consisting of 90% human serum and 10% cryoprotectant were more viable (72% viability) than cells frozen in medium with 90% growth medium and 10% cryoprotectant (59% viability). HUVEC frozen in medium with 90% human serum and 10% cryoprotectant achieved viability of 65-72%. Growth potential of both cell types after thawing was comparable with that of fresh cultivated cells. Maximum growth potential was detected in Passage 3 with an 8- fold increase for myofibroblasts

and 7- fold increase for HUVEC. Furthermore a marker profile for myofibroblasts was established successfully by using FACS analysis. Fresh cultivated myofibroblasts were positive for the cellular markers alpha- smooth muscle actin, CD105, CD90, CD73, CD146 and fresh HUVEC expressed CD31, CD146, CD105 and CD144. First immunofluorescence stainings for HUVEC showed that the cells expressed CD31 and von Willebrand-factor.
Conclusion: Adaptation of cell isolation, cell cultivation and cryopreservation to GMP conditions is successful. Based on these positive results a GMP conform validation of the whole process and consequently the establishment of a cell bank is feasible. Therefore standard operating procedures have to be created and subsequently a concept for validation has to be constructed for the whole process. Validation experiments for this purpose have to be performed in special GMP laboratories.

The influence of pre-hospital delay on early and late outcomes after percutaneous coronary intervention in patients with non-ST-segment elevation myocardial infarction

ESC-ID: 1204
Authors: Duda D, Bpazej Trela, Rybnicka M, Buszman P
Country: Poland
University: Medical University of Silesia , Department: Medicine

Objectives: The aim of the study was to evaluate the influence of pre-hospital delay on early and late outcomes after percutaneous coronary intervention (PCI) in patients with NSTEMI.
Methods: This is a retrospective registry of 1019 patients with NSTEMI enrolled between 2005 and 2008 in two centers. Patients with cardiogenic shock, referred for other intervention than PCI and pre-hospital cardiac arrest were excluded. The population was divided into two groups, with pre hospital, pain to balloon (p-2-b) delay of less than 12 hours and more than 12 h. The follow up was obtained at 30 days and one year.
Results: There were 781 patients in the <12h group and 238 in the >12h group. There were no significant differences in accordance to basic demographic data except hypercholesterolemia and diabetes, which occurred more often in the >12h group (18,8% vs 29,4%; p = 0,005 and 25,6% vs 33,2%; p = 0,01). Moreover in patients in >12 h group when compared with <12 h group more often BMS was used (92% vs 86%; p = 0,02) , the administration of insulin before PCI was higher (9,2% vs 4,4% p = 0,004) and TIMI risk score was higher (3,1 ± 1,2 vs 3,4 ± 1,4; p = 0,008). At 30 day follow up there was no difference in mortality between >12h and <12h group (1,8% vs 0,8%; p = 0,301). There was also no difference in any cause mortality at one year observation (5% vs 2,4%; p = 0,156).
Conclusions: In NSTEMI patients with stable hymodynamic and electrical profile (no cardiac failre, nor malignant arrhytmia) immediate PCI may be not related with favorable outcome, despite the fact that left ventricle function was less impaired and clinical risk was lower in patients in which PCI was performed in less than 12 hours from symptom onset.

The prognostic significance of anemia development and drop in hemoglobin concentration and their relation with admission platelet parameters in patients after invasive treatment of acute myocardial infarction

ESC-ID: 1233
Authors: Francuz P, Swoboda R
Country: Poland
University: Medical University of Silesia , Department: Zabrze

Background: Acute myocardial infarction (AMI) treatment with antiplatelet agents and percutaneous coronary intervention (PCI) increase the risk of bleeding complications associated with adverse outcomes. Platelets play crucial role in hemostasis, therefore platelet count (PC) and platelet volume indices (PVI) may be related to blood loss in the course of AMI treatment. Aims: To evaluate the impact of in-hospital anemia development and drop in hemoglobin concentration (Hbc) on prognosis and assess their relation with admission platelet parameters in patients with AMI treated invasively.
Methods: Single-center study evaluated 607 consecutive AMI patients treated with PCI. Among total study population, subjects without anemia on admission were selected (n = 532) and divided with respect to anemic status at discharge into anemic (n = 128, 24.1%) and non-anemic group (n = 404, 75.9%). Anemia was defined as Hbc lower than 13 g/dL in men and 12 g/dL in women, in accordance with the World Health Organization criteria. In addition, patients from the total study population were divided with respect to the significant Hbc decrease of 3 g/dL at discharge into decrease group (n = 28, 4.6%) and non-decrease group (n = 579, 95.4%).
Results: Comparative analyses performed between groups revealed that anemic patients were older, more frequently male, more often presented with cardiogenic shock on admission, diabetes mellitus, baseline kidney dysfunction, ejection fraction <35%, multivessel coronary artery disease, lack of Thrombolysis in Myocardial Infarction flow grade 3 after PCI. Lower Hbc on admission and at discharge were observed in anemics. GP IIb/IIIa inhibitor administration was more frequent in subjects developing anemia, however statistically only trend was observed (21.0% vs. 14.6%, p = 0.087). The 30-day, 1-year and remote mortality rates were significantly higher (all P<0.05) in anemic patients. No differences neither in PC nor PVI were observed between compared groups. Comparative analysis between patients with and without significant drop in Hbc showed higher Hbc on admission but lower at discharge in subjects with decrease in Hbc. Moreover, in those patients, the administration of GP IIb/IIIa inhibitor was more frequent (42.3% vs. 15.4%, p<0.001). The 30-day, 1-year and remote mortality rates were significantly higher (all P<0.05) in patients with in-hospital drop in Hbc. No differences neither in PC nor PVI were observed between analyzed groups.
Conclusions: Anemia development and significant drop in hemoglobin concentration are associated with increased mortality. However, this study does not show the usefulness of admission platelet parameters in predicting bleeding complications.

A registry of biodegradable versus durable polymer paclitaxel eluting stents

ESC-ID: 1276
Authors: Orlik B, Kozlowski M, Pruski M, Buszman PP
Country: Poland
University: Medical University of Silesia, Katowice. Poland , Department: School of medicine in Katowice

Background: A novel biodegradable platform of drug eluting stents showed promising preliminary results, therefore the aim of this study was to compare paclitaxel eluting stents from biodegradable (LUC Chopin, Balton, Poland) and durable (Taxus, Boston Scietific, USA) platform.
Methods: This is a multicenter retrospective registry of 393 consecutive patients with coronary artery disease who underwent PCI between June 2006 and September 2008. We included patients with stable angina or non ST elevation acute coronary syndrome and at least one significant lesion (>50% diameter stenosis) in the native coronary arteries. Two hundred and six patients recieved LUC Chopin stent, (LUC group) while 187 Taxus (Taxus group). There were no significant differnces with regard to basic demographic and clinical data between LUC and Taxus groups except higher number of non ST-elevation myocardial Infarct (11,2% vs 6,1%, p = 0,05) and a trend toward higher incidence of diabetes (39,6% vs. 30,2% p= 0,08) in LUC group. Additionaly, patients in Taxus group more often obtained complete revascularization (59,5% vs 51,8%, p = 0,08).
Results: The target lesion revascularization (TLR) after one year occured in 9,2% and 7,4% in LUC and Taxus groups (p = 0,36), while target vessel revascularization (TVR) in 12,1% and 10,7% (p = 0,42) respectively. Kaplan Maier analysis showed no differnce in long term TLR and TVR free survival between the study groups (Log-rank p = 0,19 and 0,23 respectively). Multivariate Cox analysis showed that the vessel diameter was the only predictor of TLR .
Conclusions Biodegradable polymer paclitaxel eluting stent is non inferior to durable, with regard to incidence of repeated revascularizations.

A controlled reperfusion with intra coronary downstream abciximab and peripheral anticoagulation with bivalirudin in the porcine model of myocardial infarction

ESC-ID: 1287
Authors: Buszman PP, Jelonek M, Orlik B, Trela B
Country: Poland
University: American Heart of Poland , Department: Center for Translational Research

Background: The influence of intracoronary abciximab and bivalirudin as an anticoagulant in ST elevation mycoardial infarction (STEMI) on myocardial salvage and reperfusion injury (RI) is undetermined.
Methods: In 23 landrace pigs myocardial infarct was induced by the occlusion of over-the-wire (OTW) balloon catheter in the medial left anterior descending artery for 60 minutes. Intavenous infusion of bivalirduin was maintained through the whole procedure. Prior to the reperfusion the animals were randomized into control group (n=12) in which intracoronary downstream 5 ml placebo (0.9% NaCl) through the central lumen of the OTW catheter was administred. In the study group (n=11) 0.25 mg/kg downstream i.c. abciximab was infused in the same way. The control coronary angiography and ventriculography was performed before ischemia, 30 minutes and 48 hours after reperfusion. The animals were sacrificed two days after the ischemia. The infarct area (IA) and area at risk (AAR) were marked with Tetrazolinum and Evans blue respectively. The primary endpoint was the percentage of IA in the AAR (IA/AAR%) and the left ventricle (IA/LV%). Serum biochemical markers of necrosis, inflammation and apoptosis were evaluated 12, 24 and 48 hours after ischemia.
Results: The animals in both groups were comparable with regard to sex and weight. Hearts in the both groups had similar AAR (41.9 vs. 40.5%; p = 0,7). The average infarct size was comparable in the control and the study group as expressed by IA/AAR% (58.1 vs. 57.3% p = 0.8) and IA/LV% (28.5 vs. 26.3% p = 0.5). This corresponded well with peak troponin level (138.8 vs.129.8 ng/ml p = 0.59) and LV ejection fraction after 2 days (32.2 vs. 36.5% p = 0.21). There was also no difference in peak hsCRP (7822 ng/ml vs. 8806 ng/ml p = 0,38) and TNF α (94.5 vs. 64.3 pg/ml p = 0.51) concentrations. A trend toward higher peak level of IL-6 (215.6 vs. 50.1 pg/ml p = 0.08) and adiponectin (11.0 vs. 6.8 pg/ml p = 0,1) in the study group was observed.
Conclusions: Intracoronary abciximiab with peripheral bivalirudin is not superior to bivalirudin unaided in myocardial salvage caused by RI in the porcine ischemia/reperfusion model.

A high-calorie diet improves survival and myocardial function, preventing cardiac cachexia and apoptosis in monocrotaline-induced pulmonary hypertension and heart failure

ESC-ID: 1297
Authors: Oliveira-Pinto J, Figueiredo-Pinto D, Lourenso AP, Leite-Moreira
Country: Portugal
University: Faculty of Medicine of University of Porto , Department: Physiology

Background: One third of patients with advanced heart failure (HF) are cachectic. Cardiac cachexia (CC) independently predicts a worse prognosis by a factor of 2.6. Although a western-type diet is an established risk factor for the development of cardiovascular disease, hypercaloric diet regimens could have entirely distinct effects in advanced HF with CC. Our goal was to study the effects a high-calorie western-type diet in monocrotaline-induced pulmonary hypertension (PH), HF and CC.
Methods: Male Wistar rats (180-200mg) randomly underwent (i) subcutaneous injection of 60mg.Kg-1 monocrotaline (MCT) or vehicle (Ctrl) and (ii) feeding with either a 5.4 kcal.g-1, 35% simple carbohydrate and 35% animal fat (high-calorie diet, HCD), or a 2.9 Kcal.g-1, 60% complex carbohydrate and 3% vegetable fat (normal diet, ND). Food intake, weight and mortality were recorded. Right (RV) and left ventricular (LV) haemodynamics, morphometry, myocardial apoptosis rate (terminal dUTP nick end labeling) and histology (Masson's trichrome and H&E), RV and LV myocardial expression of endothelin-1 (ET-1) and tumor necrosis factor-alpha (TNF-α), TNF-α plasma

levels and myosin heavy chain (MHC) isoforms were evaluated 5 weeks later. Groups were compared with Kaplan-Meier survival analysis and simple or repeated measures two-way ANOVA. Quantitative variables: mean ± SEM. P<0.05 considered significant.
Results: Although MCT groups presented increased RV maximal pressure, and similar degrees of RV hypertrophy, compared with their respective Ctrl groups. MCT HCD showed a significant reduction in RV maximal pressure and no medial hypertrophy of lung arterioles compared with MCT ND. These changes were accompanied by improved survival (46% vs 18%), improved LV myocardial systolic and diastolic function indexes. HCD also increased caloric intake, attenuated total weight loss, and LV mass wasting in MCT, without LV cardiomyocyte dimension changes. MCT fed ND also showed increased fibrosis and apoptosis rates, increased myocardial expression of ET-1, increased TNF-a LV mRNA and plasma levels, and increased percentage of beta MHC isoform compared with ND fed Ctrl, whereas MCT fed HCD presented attenuation of fibrosis and gene expression of ET-1, and apoptosis rates, TNF-a LV mRNA and plasma levels and ratio of MHC isoforms were similar to their respective controls. Except for increased body weight and fat mass, Ctrl HCD showed no differences from Ctrl ND.
Conclusions: Contrarily to their effects on the healthy heart's function, western-type diets may have beneficial actions in advanced or end-stage HF and CC, attenuating weight loss, myocardial apoptosis and neuroendocrine activation while improving myocardial function

Long axis M-mode amplitude as a predictor of mortality in medically treated patients with congestive heart failure due to reduced systolic function

ESC-ID: 1325
Authors: Ibrahimi P, Jashari F, Ahmeti A, Haliti E, Rexhepaj N, Elezi Sh, Jashari H, Bajraktari G
Country: Kosova
University: University of Prishtina , Department: Medical Faculty

Background and Aim: The mortality of patients with heart failure (HF) remains high despite new achievements in its pharmacological treatment. The HF due to left ventricular (LV) systolic dysfunction has higher mortality compared to HF with preserved LV systolic function. We investigated the value of echocardiographic parameters on mortality in patients with chronic heart failure due to LV systolic dysfunction.
Methods: This study included 75 consecutive patients (age: 59.3'b11.3 years, %female) with congestive heart failure due to reduced LV systolic function without rheumatic valve disease. Mean follow-up was 32¡ Ó13 months. Routine 2-dimensional, M-mode, Doppler and tissue Doppler parameters were performed.
Results: The LV-end systolic dimension (ESD) and end diastolic dimension (EDD) were higher (6.1"b0.9 vs. 5.2"b1.0 cm, P<0.001, and 7.1'b0.9 vs. 6.5'b0.7, p=0.006, respectively), and LV shortening fraction (SF) and ejection fraction (EF) were lower (14'b5 vs. 19'b4 % and 28'b10 vs. 35'b8, p<0.001, for both), in non-survivors compared to survivors. The lateral and right long axis amplitudes were also lower in non-survivors (0.6'b0.2 vs. 0.9'b0.2 cm, P<0.001, and 1.8'b0.4 vs. 2.4'b0.7, p=0.008, respectively). Multivariate analysis identified the septal M-mode long axis amplitude (OR = 0.001, 95% CI 0.000-0.814; P = 0.043), as the only independent correlate of mortality.
Conclusions: In medically treated patients with non-rheumatic chronic heart failure due to left ventricular systolic dysfunction, the M-mode long axis amplitude is an independent predictor of mortality.

Mechanistic study of adriamycin induced apoptosis in endocardial and vascular endothelial cell lines

ESC-ID: 1345
Authors: Nair V, Sathish KM, Kumar TRS, Kartha CC
Country: India
University: Bangalore Medical College & Research Institute , Department: medicine

Introduction: The endocardial endotheliumc (EE) acts like a blood-heart barrier and its interactions with the cardiomyocyte is indicated in cardiac growth, contractile performance and rhythymicity through autocrine and paracrine regulation. Adriamycin is an anti-tumour agent which causes dose-dependent irreversible cardiomyopathy. Molecular apoptotic evaluations of adriamycin on cancer have been well documented but it effects on endocardial and vascular endothelial cells (VECs) remains at infancy. In this experiment, we investigated the effects of adriamycin on endothelium and evaluated changes in mitochondrial membrane potential, chromatin condensation and cell cycle changes.
Materials and Methods: 1.Tissue-culture media and all supplements. 2.Maintenance and culture of Immortalized Porcine Ventricular EECs ,EA.hy 926 Cultures (immortal endothelial cell lines) and HUVEC Cultures (mortal endothelial cell lines). 3.Estimation of loss of Mitochondrial Membrane Potential by JC-1 and TMRM staining. 4.Estimation of chromatin condensation by Hoechst staining. 5.Analysis of changes in cell cycle phases after adriamycin treatment using propidium iodide in BD FACS analyzer.
Results: 1.Evaluation of apoptotic hallmarks in endocardial endothelial cells: There is MMP loss (40-80% in 24 hours at 1 micromolar concentration) and chromatin condensation (45%in 24 hours at 1 micromolar concentration) in a dose- time dependent manner in these cells. Cell cycle phases also report a stoppage of cellcycle in sub G0 phase after adriamycin treatment. 2.Evaluation of apoptotic hallmarks in mortal and immortal vascular endothelial cells: There is MMP loss (80-90% in 24 hours at 1 micromolar concentration) and chromatin condensation (80% in 24 horurs at 1 micromolar concentration) in a dose- time dependent manner in these cells. Cell cycle phases also report a stoppage of cellcycle in G2 phase after adriamycin treatment.
Conclusion: Cardiac endothelium is a modulator of ventricular function and its dysfunction could be a factor in the development of heart disease.Thus, we may conclude that the initial apoptosis of the endothelial layer in the initial apoptosis of the endothelial layer in the endocardium may have a pivotal role in causing myocardial weakness on adriamycin treatment. The use of Adriamycin cannot be withheld because of its good efficacy against tumors, but its effects can be better if a slower infusion rate is done while administration.

Myocardial response stretch - the unexplored diastolic side of the Frank-Starling mechanism and Anrep effect and its modulation by ischemia

ESC-ID: 1457
Authors: Ferreira RC, Neves JS, Ladeiras-Lopes R, Pintalhão M, Carvalho R, Leite-Moreira A
Country: Portugal
University: Faculty of Medicine, University of Porto, Portugal, Department: Department of Physiology

Introduction: Although the Frank-Starling mechanism and von Anrep effect are considered the two major adaptive mechanisms of cardiac contractility, the characterization of their diastolic counterpart is still completely unexplored.
Aim: Our objective was to evaluate and characterize the diastolic response to acute mechanical overload.
Methods: Rabbit papillary muscles (modified Krebs solution, 0.2Hz, 1.8mM Ca2+, 30ºC) were acutely stretched from 92% Lmax to 100% Lmax, in the absence (basal group, n=9) or presence of (i) an inhibitor of the Na^+/H^+-exchanger, NHE ((5-(N-methyl-N-isobutyl)-amiloride, MIA; 10-6 M; n=8); (ii) an inhibitor of the reverse mode of $Na^+/Ca2^+$-exchanger, NCX (KB-R7943; 5x10-6 M; n=11); (iii) an inhibitor of Protein Kinase C, PKC, (chelerythrine, CHE, 10-5 M; n=7); (iv) an inhibitor of Protein Kinase A, PKA (KT-5720, 10-5 M; n=7); (v) an inhibitor of Protein Kinase G, PKG, (Rp-8-Br-PET-cGMPS,10-6M; n=7). Another stretch protocol was performed (vi) in the absence of glucose and O2. (Ischemic group, stretch during 15 minutes of ischemia followed by reperfusion, n=8). Immediate and delayed responses to muscle stretch were evaluated. Results presented as mean ± standard error ($p<0.05$).
Results: In the basal group, despite the immediate increase in myocardial passive tension (PT) induced by acute stretch (from 1.7 ± 0.4 to 18.2 ± 2.2 mN mm-2), afterwards this parameter showed a significant and time-dependent decrease down to 8.2 ± 1.1 mN mm-2 (-55%) at 60 minutes. This time-dependent decrease in myocardial stiffness is significantly attenuated by PKC (iii) and PKG (v) inhibition. In the ischemic group this response was completely abolished throughout the ischemic period. Upon reperfusion, the myocardial stiffness progressively decreased to values similar to the basal group at the end of the protocol.
Conclusion: Besides the well known increase in contractility, this study highlights a new and undescribed adaptive response to myocardial stretch - a significant and time-dependent decrease in myocardial stiffness. Moreover, its attenuation by PKG and PKC inhibition and its absence under ischemic conditions, reverted by reperfusion, highlights the possibility of an active, energy dependent process responsible for the time dependent increase in myocardial distensibility that follows stretch.

Session: Cardiology 2

Level of NT-pro BNP and its prognostic significance in patients with acute coronary syndrome

ESC-ID: 489
Authors: Maksimovic I, Jonovic S, Zdravkovic V, Bankovic D
Country: Serbia
University: Kragujevac , Department: Cardiology

Introduction: B type natriuretic peptide (BNP) and N-terminal remainder of their prohormone (NT-proBNP) are synthesized and released into the myocardium in response to increased intracardiac pressure. However, the increased value of these peptides is associated with ischemia of myocardial tissue and in terms of lack of myocyte necrosis, which recommended them for possible early markers of acute coronary syndrome (ACS). In recent years it has been spoken about the NT-proBNP and BNP as powerful predictors of mortality in acute coronary syndrome, so that their increased values are associated with worse prognosis of these patients.
Aim: Determine whether there is a statistically significant difference in the values of NT-proBNP and patients with acute coronary syndrome compared to the healthy population. Examine significant differences in the values of NT-proBNP between survivors and deceased with a diagnosis of acute coronary syndrome, as well as the importance of NT-proBNP as a predictor of mortality.
Material and methods: The study included 107 patients with acute coronary syndrome treated in our clincic in the period from April to December 2009, whose results were compared with a control group of 50 subjects. The value of NT-proBNP in the blood of patients was analyzed after admission to our clinic. Data were obtained by examining the protocols and history of illness of patients and their health was defined after a month by telephone contact with the patient or his family. In statistical data processing were used Student's T test and Mann-Whitney U test.
Results: It's been registered a statistically significant difference in the values of NT-proBNP between patients with acute coronary syndrome compared to the control group ($p <0.0005$). The difference in values of NT-proBNP between survivors and deceased patients was statistically significant ($p <0.0005$). Also, the level of NT-proBNP may be a marker for short-term survival in acute coronary syndrome (AUROC = 0864, $p <0.0005$).
Conclusion: The values of NT-proBNP are increased in patients with acute coronary syndrome, especially in those with lethal outcome. Also, our research suggests that the value of NT-proBNP in acute coronary syndrome may indicate patients with worse prognosis.

Myocardial tissue doppler velocities and functional properties of erythrocytes in different remodeling patterns of left ventricle

ESC-ID: 847
Authors: Mikhaliev K, Kolomoiets M, Chursina T, Tkach I, Kaushanska O, Kvasnytska
Country: Ukraine
University: Bukovinian State Medical University , Department: Internal Medicine and Clinical Pharmacology

Introduction: Abnormalities of blood properties, especially erythrocytes (E), may influence on function of left ventricle (LV) in arterial hypertension (AG) and ischemic heart disease (IHD). Taking into account structural and functional changes of LV, and their interrelations with blood properties, including E, allows performing comprehensive approach to understanding the process of cardiovascular continuum. Aim of study. To determine the dynamics of E functional properties (EFP) and their interrelations with tissue Doppler myocardial velocities (TDV) in patients (pts) with different remodeling LV patterns.
Materials and Methods: 61 male pts (mean age 61 ± 10 y) with AG and IHD and 15 age-matched controls were enrolled. There were measured such EFP, as deformability index (DI) and relative viscosity index (RVI) (in reference units, U). Parameters of remodeling (LV myocardial mass index and relative wall thickness), mitral inflow (E and A velocities), TDV (systolic s and early diastolic e), E/e ratio and value of LV end-diastolic filling pressure (EDFP) were assessed according to guidelines. Concentric remodeling was presented in 5 pts (8%), concentric hypertrophy in 38 (62%) and eccentric hypertrophy in 18 (30%). Pts were stratified into 4 remodeling LV patterns (P): P1 with normal septal mitral (sMV) and lateral (lMV) TDV (≥8 and 10 sm/s respectively) (n = 12); P2 with reduced sMV and lMV (< 8 and 10 sm/s respectively) with normal LV EDFP (n=27); P3 with elevated LV EDFP (n = 10); P4 with elevated LV EDFP and atrial fibrillation (n=12). Data are expressed as mean ± SD. Data were analyzed by nonparametric methods. A p-value < 0,05 was considered statistically significant.
Results: Both indices of EFP were disturbed in all LV patterns comparing with control. There were observed decreasing of DI (0,94 ± 0,320 U in P1; 0,94 ± 0,458 U in P2; 1,00 ± 0,523 U in P3; 0,96 ± 0,402 U in P4 and 2,11 ± 0,334 U in control group, p<0,05) and increasing of RVI (2,14 ± 0,595; 1,96 ± 0,348; 1,81 ± 0,160; 1,83 ± 0,351 and 1,39 ± 0,018 U respectively, p<0,05). There were significant correlations of DI and lMV e in P1 (r = - 0,69, p<0,05) and P4 (r = 0,76, p<0,05). There was also significant correlations of DI and sMV a in P2 (r = 0,48, p<0,05); s and e in P3 (r = 0,67 and 0,70 respectively, p<0,05). Significant correlations of DI with TDV s and e of midanterolateral wall (MALW) (4-chamber view (Ch) in P3 were observed (r = 0,83 and 0,73 respectively, p<0,05). RVI correlated significantly with sMV s in P2 (r = - 0,54, p<0,05) and P3 (r = -0,79, p<0,05); with TDV s of MALW (4Ch) in P3 (r = - 0,79, p<0,05) and e in P4 (r = - 0,79, p<0,05); with TDV s of basal posterior segment (2Ch) in P4 (r = - 0,83).
Conclusions EFP are disturbed in patients with AG and IHD irrespective to pattern of LV. Parameters of systolic and diastolic function of certain myocardial segments are influenced by EFP, which consequently could be promising additional predictors of LV regional function.

Involvement of KATP channel in protective role of Simvastatin on AV node during experimental AF in rabbits

ESC-ID: 884
Authors: Aminolsharieh najafi S, Alizadeh F, Khori V
Country: Iran
University: Golestan medical universtiy, faculty of medicine , Department: Faculty of medicine

Introduction: Previous study describe direct modulatory role of simvastatin on atria and atrioventricular node. Objective: The present study was designed to revealed role of Katp channel on the protective electrophysiological effect of simvastatin during simulated AF in isolated atrioventricular node of rabbits. In this study we used isolated rabbit AV nodal preparations in three groups such as: 1) various concentration of Simvastatin (5,10 μm) 2) Glibenclamide , A KATP channel blocker, (5 μm) 3) simvastatin + Glibenclamid(5 μm). Predefined stimulation protocols (basic rate dependent zone of concealment and simulated arterial fibrillation) were executed in each group before and after applying interventions. All data shown as Mean ±SE.
Result: Simvatatin in concentration- dependent manner prolonged nodal conduction time and refractoriness. Slowing ventricular rate by increasing H-H indexes and nodal excitable gap index was observed by Simvastatin. Glibenclamid (5 μm) had inhibitory effects on nodal conduction and refractoriness. KATP channel blocker prevented effects of Simvastatin (10 μm) on increasing nodal fatigue and facilitation . Protective effect of simvastatin to reduced ventricular rate (prolongation of H-H interval) was diminished by glibenclamid (5 μm).
Conclusion: This study for the first time proved that protective frequency- dependent effects of simvastatin on atrioventricular node in partly mediated by KATP channel. The anti-AVNRT effects of simvastatin can proposed by these results.

The role of endogenous nitric oxide on protective effects of Simvastatin on dynamic extracellular field potential of atrioventricular node(AV-Node) in isolated rabbit model of experimental atrial fibrillation(AF).

ESC-ID: 916
Authors: Alizadeh F, Aminosharie NS, Khori V
Country: Iran
University: Golestan Medical University, Department: Cardiovascular Research Center

Objective: The primary objective of the present study is to reveal the effects of applying nonspecific Nitric-oxide inhibitor on the electrophysiological protective role of av-node during experimental AF.
Material and Methods: Basic AV-nodal conduction and refractoriness (AVERP and AVFRP) was assessed by premature pacing protocols. The determination of nodal response to AF (concealed AV nodal conduction and AV

node functional refractory period and zone of concealment (ZOC) was evaluated at multiple cycle lengths and during electrically induced atrial fibrillation. AF was simulated by high-rate atrial pacing with random coupling intervals. We used an isolated perfused rabbit AV node preparation, in one group (N = 7). The stimulation protocols were carried out during control conditions (no intervention) and in the presence of various concentrations of L-NAME (50μm) and Simvastatin(5 and 10μm).
Results: This study has shown the inhibitory effects of L-NAME on basic nodal conduction and refractoriness. Furthermore, the elimination of endogenous NO can abrogate the effects of simvastatin(5 μm) on the frequency-dependent prolongation of the zone of concealment at various cycle lengths. However, the inhibitory effects of Simvastatin (10 μm) was magnified after L-NAME on decreasing ventricular rate, facilitation and maximum nodal conduction . L-Name(50 μm) had an inhibitory effect on induction of fatigue.
Conclusion: The present study has shown biphasic protective effects of Simvastatin on basic nodal properties and ventricular rate during atrial fibrillation that indirectly affected by NO modulation. Endogenous NO facilitate frequency-dependent prolongation of ZOC by low concentration (5 μm) of Simvastain. However, the protective role of Simvastatin (10 μm) on ventricular rate during AF was abrogated by inhibiting NOS synthesis.

Comparative analysis of radiofrequency and cryo- energy destructive impact to myocardium

ESC-ID: 992
Authors: Peckauskas A, Rackauskas A, Mickevicius T, Veikutis V
Country: Lithuania
University: Kannas Universirty of Medicine, Department: Institute of biomedical research

Background: Most of the cardiac disorders are corrected by using destructive energy sources, mostly radiofrequency ablation (RFA). Unfortunately, despite the use of the new technologies, the rate of early and late post-operative complications remains fair.
Aims: The aim of this study was to measure and determine the optimal characteristics of RFA, during endocardic destructive procedures in different structures of the heart and compare it with the characteristics of the cryo-destruction.
Methods and matherials: Unisex mongrel adult dogs (n-9) were used for experimental study. Destruction of various heart areas was performed on the endocardic surface, inserting the electrode through the incision on the apex of the right ventricle. Standard 4 and 8 mm 'Biosense Webster' intracardiac electrodes were used. Destruction was performed using Prucka Engineering® RF energy generator OSYPKA HAT 200S. Destruction parameters: energy - 20-50 W, time - 10-30 sec. During the thermo and cryo destruction the changes in temperature were registered with thermocamera ThermaCAM T400, with thermal sensitivity 0.05°C. The results were estimated by using modifications or their combinations of data analysis methods based on temperature anisotropy for experimental heart tissues.
Results: Performing RFA on the epicardial surface of atria, destructive thermoeffect (> 46°C) was observed after 5-7 sec., independently from energy power and the type of the electrode. Using 20-30W energy showed elipse form full destruction area 3-4 mm in the diameter, using 50W - 4-5 mm. Complete and partial destruction zone mostly coincide. RFA from endocardial surface of the ventricles produced destruction area through the whole depth of the myocardium, formed 7-10 mm and was irregular-oval-shaped with interstitiums longitudinal to apex. RFA from epicardial surface showed wide 10-15 mm ellipse-shaped partial destruction area. In opposite, cryoablation produced local and homogenous cardiac tissue destruction in all cardiac tissues.
Conclusions: Partial and atypic myocardial damage areas are a lot greater than earlier was thought. Interstitial dammage fenomenon, that we determinated, is useful in explaining the origin of most post-ablation complications. Thermovision allows us to see the margins and features of destructive impact, optimize RFA parameters, due to avoiding and minimizing adverse effects and retain the structures, that could influence traumatising outcome.

Construction of a new bioreactor system combining dynamic cell seeding and in vitro conditioning for tissue engineering of heart valves: first standards in cardiovascular tissue engineering

ESC-ID: 1041
Authors: Reichardt A, Hetzer R, Lueders C
Country: Germany
University: Deutsches Herzzentrum Berlin , Department: Laboratory for Tissue Engineering

Aim: The scientific concept of tissue engineering, which includes work methods of medicine, biology and biochemistry, could represent a solution to overcome limitations of currently used heart valve replacements. One of the major keys to success in tissue engineering of heart valves is effective cell seeding with uniform cell distribution on a biodegradable three-dimensional scaffold, followed by in vitro conditioning to develop a viable tissue construct in vitro. We developed a novel bioreactor system combining optimal cell distribution followed by in vitro conditioning in the same device for tissue engineering of heart valve constructs. The aim was now to test this device and establish standards for the fabrication process.
Materials and Methods: In the newly developed bioreactor system there are two individual cell seeding and perfusion cylinders made of lucent acrylic glass to enable continual control of the developing cell-matrix construct and detection of potential contamination inside the system. The polymeric heart valve scaffold is fixed in the cylinders using an adapter. The cylinders are placed in cylinder clams which are connected to a rotating disc. The whole system can rotate in two directions to provide optimal cell distribution to all areas of the heart valve construct. Furthermore gas permeable tubes connected to sealings which are able to rotate guarantee optimal gas exchange during the in vitro conditioning process. A tap to collect samples of the culture medium was integrated to control and manage the in vitro conditioning process. The generation of flow and pressure conditions in the new bioreactor system is possible to simulate conditions of the human body. Via a measuring unit, several parameters can be monitored throughout the fabrication process to give

an overview of the developing tissue inside the cylindrical chambers. Suitable parameters were evaluated and a parameter checklist was developed. This „one step" device provides a high level of sterility and fits into a humidified incubator.
Results: In first experiments porous three-dimensional scaffolds were seeded with human umbilical cord myofibroblasts and conditioned in our new bioreactor system. Online monitoring of different parameters allowed the tissue fabrication process to be controlled and managed. After cultivation in the bioreactor we achieved viable tissue with multilayer distribution of the cells within the scaffold material. Furthermore, successful production of matrix proteins e.g. collagen and aSMA throughout the thickness of the construct was visible.
Conclusion: We have developed a new device combining cell seeding and in vitro conditioning and have fabricated functional tissue engineered constructs. Measurement of parameters during the fabrication process allowed us to establish first standards for cardiovascular tissue engineering to fabricate tissue engineered heart valves, independently of the cell source and the scaffold material used.

Lack of electrophysiological remodeling of atrioventricular-node in isolated perfused cirrhotic rat during simulated atrial fibrilation

ESC-ID: 1050
Authors: Moheimani HR, Khori V, Dehpour AR
Country: Iran
University: Golestan University of Medical Sciences,
Department: Cardiovascular Research Center

Objective: The present study is design to evaluate the protective electrophsiological role of Atrioventricular-Node (AV-Node) during laboratory simulated Atrial fibrillation in common bile-duct ligated (BDL) rats.
Material and Methods: We compared the electrophysiological effects of cirrhosis in 18 isolated perfused rat heart randomly divided in 3 groups:1)sham 2)basic and rate-dependent and 3)AF. Cirrhosis was induced by BDL for 6 weeks in rats. We used extracellular filed potential recording from upper atrium and right ventricular. The conduction time, refractoriness and frequency-dependent (Recovery, Facilitation and Fatigue) properties of AV-Node were characterized by specific stimulation protocols. Experimental AF was simulated by high-rate atrial pacing with random coupling intervals (range 75/125 ms). All data shown as Mean ± SE.
Results: Slow pathway conduction time and nbsp; and facilitation interval was prolonged in cirrhotic rats (78.8 ± 3.3 to 95.8 ± 4.2 ms in sham and cirrhotic rats,respectively). Nodal protective function during AF(R-R interval, concealed beats, ventricular refractoriness and zone of concealment) weren't affected by cirrhosis.
Conclusion: Despite slow pathway conduction prolongation in cirrhotic rats, protective behavior of av-node didn't change after induction of cirrhosis.

Post-operative vascular models using simulation based medical planning system

ESC-ID: 1091
Authors: Totorean AF, Vinatu VF, Bernad SI, Susan-Resigna RF
Country: Romania
University: "Politehnica" University of Timisoara,
Department: Department of Medical Engineering

Objective: The purpose of this paper was to non-invasively assess hemodynamic parameters such as mass flow, wall shear stress, pressure drop and particle depositions with computational fluid dynamics (CFD) in the multiple stenosed right coronary artery - RCA using patient-specific data from computed tomography (CT) angiography, and their utilization in clinical practice to facilitate decisionmaking within the cardiac catheterization laboratory.
Methods and materials: For the case presented in this paper, spiral CT (computed tomography) was performed for 4 days following the CA (coronary angiography) (44 year old, patient with typical angina symptoms is investigated). Data corresponding to the reconstructed RCA present a good agreement between coronary artery diameter measurements in the present case (3.6 mm) and the measurements done by trans thoracic echocardiography (TTE) and quantitative coronary angiography (QCA) (3.6±0.42 mm). Local hemodynamic factors are crucial to determine the evolution of coronary obstructions. The vascular endothelium is in a pivotal position to respond to the dynamic forces acting on the vessel wall owing to the complex 3D geometry of the artery. Fluid shear stresses elicit a large number of responses in endothelial cells. The response of genes sensitive to local hemodynamic forces likely leads to creation of a raised plaque; subsequent hemodynamic forces created by the plaque may lead to a cycle of cellular recruitment and proliferation, lipid accumulation, and inflammation.
Results: The peak velocities from the current simulations are compared with in vivo measured data. The results from our simulation show that the peak velocity at the throat of the stenosis is about 1.165 m/s (in 28% diameter reduction stenosis), and 2.27 m/s (in 53% diameter reduction stenosis) against a value of 0.78 m/s in healthy arteries. We mentioned that our result is in good correlation with both the experimentally measured data by Li et al. (2007) and in vivo measured data by Di Mario et al. (1993), and Siebes et al. (2004). The correct prediction of the vortex dynamics might be important for estimating the near-wall residence times for blood cells. It is particularly relevant because it is now widely accepted that biological processes initiating atherosclerosis are strongly influenced by a combination of fluid and mechanical factors. It would also appear that the particle residence time and particle deposition increase significantly due to the severe occlusion.
Conclusions Highly accurate anatomy for the generation of geometric models is a principal requirement to perform reliable flow simulations and to make assumptions about mass flow, WSS, and wall pressure. The results of maximum blood velocities from this study agreed well with published clinical measurement, indicating that the model is physiologically realistic. Results in different degrees of stenoses show that severe stenosis caused considerably large pressure drop across the throat. Maximum wall shear stress reaches a level at which endothelial damage may

occur at 30% stenosis by diameter, which is generally not regarded as being clinically significant. In the present paper we have developed and implemented new methods that will enable the creation of post-operative vascular models using simulation based medical planning system.

Cancer cachexia induced heart failure

ESC-ID: 1167
Authors: Tschirner A, Springer J, Palus S, Grzesiak A, Kaschina E, Argiles J, von Haehling S, Anker SD
Country: Germany
University: Freie Universität Berlin , Department: Biologie

Background: Cachexia is a common co-morbidity of patients with cancer drastically affecting outcome. Symptoms of cancer cachexia patients include fatigue, shortness of breath, impaired exercise capacity, which are hallmark symptoms of chronic heart failure. We hypothesize that cancer cachexia causes heart failure.
Methods: Using the AH-130 hepatoma rat model to induce cachexia, body weight, body composition, cardiac function and quality of life were analyzed on day 5, 7, 9, 11 and 13 after tumor-inoculation. Plasma was collected at the end of the study and assayed for cardiovascular biomarkers using a multiplex kit from Millipore for the Luminex platform and albumin well as lipid were measured by a validated laboratory. Proteasome, caspase-3 and caspase-6 activity from cardiac tissue was determined by a kinetic turnover of specific fluogenic substrates in relation to incubation with specific inhibitors. Signalling proteins of catabolic and anabolic pathways were assessed by Luminex Assay or Western blotting.
Results: The results show a progressive loss of body weight (approx. 23% on day 13, $p<0.0001$ vs sham and vs baseline), with both fat and lean mass affected. Heart function was severe affected, LVEF (day 13: 50.5 ± 1.4% vs sham 79.7 ± 1.4%, $p<0.0001$), LVFS (day 13: 30.3 ± 0.9% vs sham 50.5. ± 1.4%, $p<0.0001$) LVESP (day 13: 66.9 ± 3.7mmHg vs sham 110.65.4mmHg, $p<0.0001$) and LVmass (day 13: 220 ± 29mg vs sham 642 ± 23, $p<0.0001$). The activities of the ubiquitin-proteasome system, caspase-3 and -6 were up-regulated in the heart resulting in a loss of left-ventricular mass (-326 ± 42mg on day 13, $p<0.0001$ vs baseline). Analysing the tumor tissue revealed a decreased anabolic signaling (pAkt, p70S6K, p4EBPI, all $p<0.001$) and an increased catabolic signaling (pFoxo, Murf-1).
Conclusions In this model system, severe cancer cachexia causes severe impairment of cardiac function. The nature of these impairments is only partially comparable to processes in chronic heart failure. However, heart failure therapies may be beneficial in this clinical setting.

Prognostic value of the Selvester Score in patients with the acute coronary syndrome and low left ventricular ejection fraction after the invasive myocardial revascularization

ESC-ID: 1315
Authors: Konkolewska M, Buszman P, Janas A, Czarnecka K
Country: Poland
University: American Heart of Poland , Department: Cardiology

Background: Selvester Score (SSC) is a non-invasive scale, based on the 12-lead ECG, which can be used to assess the extensiveness of the myocardial damage.
Aims: The aim of this study was to verify whether the Selvester Score (SSC) may constitute an alternative to dobutamine stress echocardiography and cardiac magnetic resonance, non-invasive and quick method allowing to assess the probability of the improvement in the LVEF after the myocardial revascularization in the patients with low LVEF and Acute Coronary Syndrome (ACS)
Methods: This is a multicenter prospective registry of 90 consecutive patients with ACS due to ACS and LVEF <30% prior to revascularization, hospitalized between 2008 and 2009. The LVEF based on the transthoracic echocardiography and SSC based on the 12-lead ECG were assessed.
Results: The mean study group age was 66 ± 9.8 years, 81% were male, 51,6% diabetic. Average baseline LVEF was 26,1 ± 5%. Unstable angina was diagnosed in 35,6%, NSTEMI in 25,6% and STEMI in 35,6% of patients. Mean SSC was 8,4 ± 4,6. After initial diagnosis 83,5% patients underwent PCI while 22% CABG. At one year observation the mortality was 37,4%. There was no correlation between SSC and LVEF on admission in the whole study group ($R= -0,07$; $p=0,5$), however it was significant in the subgroup of patients with STEMI ($n=32$, $R=-0,91$, $p=0,012$). At one year follow up SSC did not correlate neither with LVEF ($R=0,05$; $p=0,8$) nor LVEF improvement ($R=0,13$, $p=0,37$). On multivariate analysis the higher SSC value did not influence the one year mortality.
Conclusions Based on our study, the Selvester Score does not predict the left ventricle function improvement at the mid term observation in the population presenting with ACS prior to revascularization. The correlation of SSC with baseline LVEF only in STEMI patients generates hypothesis that a similar larger study only in this cohort of patients should be carried out.

Does postconditioning potentiate ischemic preconditoning in rat hearts?

ESC-ID: 1350
Authors: Buja A, Ordodi V, Gheorghiu G, Hentia C, David A, Mirica N, Duicu O, Raducan A, Dobreanu D, Muntean D
Country: Romania
University: University of Medicine and Pharmacy Tirgu Mures, University of Medicine and Pharmacy Timisoara , Department: Physiology, Pathophysiology

Introduction: Cardioprotection by mechanical maneuvers and pharmacological agents that can reduce cell death at reperfusion when administered with revascularization ther-

apies still represents a priority of cardiovascular research. Two mechanical maneuvers that are exploiting heart's intrinsic mechanisms of protection are extensively investigated. Ischemic preconditioning (IPreC) has been consistently associated with anti-infarct protection in every species tested. Accumulating evidence suggests that the heart can also be protected following a lethal ischemic insult by means of ischemic postconditioning (IPostC).
Aim: The present study was aimed at investigating whether concomittent administration of IPreC and IPostC can provide additive protection against in the in vivo model of rat heart ischemia/reperfusion injury when compared to ischemic preconditioning alone.
Material and method: Anesthetized rats (n = 6-8/group) subjected to 30 min of regional ischemia by coronary artery ligation and 120 min reperfusion were randomized to receive: (i) no additional intervention (Ctrl group); (ii) preconditioning by 3 episodes of 5 min ischemia interspersed with 5 min reperfusion episodes (IPreC group); (iii) postconditioning with 6 cycles of 10 seconds reperfusion-10 seconds reocclusion imposed immediately upon reperfusion (IPostC); (iv) the combination of both protocols (IPreC-IPostC group). Animals were instrumented for hemodynamic measurements (heart rate, blood pressure and lead II ECG). Infarct size was measured by means of triphenyltetrazolium chloride staining and calculated as a percentage of the area at risk.
Results: Results are reported as means ± SE. Myocardial injury expressed as the percent of infarct to risk area ratio was significantly reduced in IPreC group (16 ± 4%) when compared to the Ctrl group (52 ± 5%; $p < 0.05$) confirming the robust infarct-size limiting effect of preconditioning. In IPostC group infarct size was 31 ± 6% of the region at risk, suggesting that the 6 cycles postconditioning protocol is effective but affords relatively mild protection. Combination of both protocols resulted in a further albeit non-significant reduction of infarct size (14 ± 8%; p NS vs. IPreC and IPostC, $p < 0.05$ vs. Ctrl).
Conclusion: In the in vivo model of regional ischemia in rat hearts, combination of ischemic pre- and postconditioning offered no additional cardioprotection over ischemic preconditioning alone.

Micronutrient status in coronary artery disease and diabetes mellitus

ESC-ID: 1366
Authors: Kaur G, Kalra K, Prakash A, Gurtoo A, Toteja GS
Country: India
University: Lady Hardinge Medical College , Department: Medicine

Background: Oxidative stress has been closely linked to endothelial dysfunction which is recognized to be at the core of atherosclerosis and its protean manifestations and leads to accelerated rates of coronary artery disease (CAD) and Diabetes mellitus (DM). Deficiency of antioxidants and trace elements is implicated in its pathogenesis. Therefore, serum levels of copper, zinc, selenium, vitamins A, C and E along with various cardiovascular risk factors were evaluated in subjects of CAD and/or DM.
Methodology: Adult patients (n=200) were enrolled: 50 CAD, 50 DM, 25 with both CAD and DM, and 75 controls (non-CAD and non-DM). Risk factor evaluation was done. Vitamins A and E were analysed by High Performance Liquid Chromatography, Vitamin C by Spectrophotometry and serum zinc, copper and selenium levels on Inductively-Coupled Plasma Mass Spectrophotometer.
Results: Of the cardiovascular risk factors, central obesity was the most prevalent risk factor (70.5% of study population), followed by dyslipidemia (58%), hypertension (50.5%), and obesity (46%). CAD and/or DM subjects were twice as likely to be obese than non-CAD non-DM subjects. Controls had nearly twice the levels of Vitamin C as compared to CAD and/or DM groups. High levels of Copper were observed in subjects with both CAD and DM as compared to other 3 groups. In subjects with both CAD and DM; Vitamins A, C and Zinc levels were higher in obese individuals as compared to non-obese individuals while other micronutrients showed an opposite trend. However, there was no statistical difference (using ANOVA $P \geq 0.05$).
Conclusion: A very high proportion of subjects had multiple risk factors. Although no significant difference in micronutrient levels was observed but, these results should be interpreted with caution because all subsets in this study had high risk factor prevalence, since Indians by themselves are a high risk group for CAD and diabetes.

Session: Cardiology – Poster

NT-proBNP AND troponin levels and significance of their correlation in patients with acute myocardial infarction: STEMI vs. NSTEMI

ESC-ID: 568
Authors: Jonovic S, Mladenovic V, Zdravkovic V
Country: Serbia
University: Kragujevac , Department: Cardiology

Introduction: Myocardial infarction is characterized by increased levels of the myocardial specific enzymes in peripheral blood, primarily troponin. This marker is highly sensitive and specific indicator of cardiomyocytes damage. Today, great number of studies indicate the importance of increased levels of the N-terminal fragment of B-type natriuretic peptide (NT-proBNP) in coronary artery disease.The majority of the studies showed that this peptide is released directly from ischemic tissue, even in the absence of myocardial necrosis and ventricular dysfunction. So there is more often a question about significance of NT-proBNP as a marker of acute coronary event.
Aim: The aim of this study was to determine whether there are statistically significant differences in NT-proBNP and troponin levels between patients with myocardial infarction with ST elevation (STEMI) compared to patients with myocardial infarction without ST elevation (NSTEMI). Correlation between studied markers has also been examined.
Material and Methods: 107 patients with myocardial infarction (STEMI, NSTEMI) were analized, and the research included 66 of them (patients with Killip class II were excluded), treated in the period from April to December 2009. NT-proBNP and troponins levels were measured on admission to a Coronary care unit. Data were obtained by examining the patient`s protocols and medical records. Statistical analyses were performed using Spearman's rank correlation coefficient and Mann-Whitney U test.

Results: The difference of mean NT-proBNP levels between patients with NSTEMI and patients with STEMI was statistically significant. (p <0.0005). The difference of mean troponin levels in the relation to the type of myocardial infarction showed no statistical significance(p = 0.103). In the group of patients with STEMI, and in the group with NSTEMI, there was a positive correlation between NT-proBNP and the troponin. (r = 0854, p <0.005, r = 0791, p <0.005).
Conclusion: Although the zone of necrosis was similar,the NT-proBNP level was significantly higher in the NSTEMI patients compared to STEMI patients. Also, there was a strong positive correlation between the degree of myocardial tissue necrosis and NT-proBNP level.

Does haemoglobin level on admission influence short- term and 6-month mortality in patients treated with percutaneous coronary intervention for Non-ST elevation myocardial infarction?

ESC-ID: 583
Authors: Jablonska D, Gierlaszynska K, Stolarz M
Country: Poland
University: Silesian Medical University , Department: Medical

Introduction: It should be considered how does haemoglobin level influence prognosis in patients treated with percutaneous coronary intervention (PCI) for Non-ST elevation myocardial infarction (NSTEMI).
Aim: To compare results of treatment and prognosis according to haemoglobin level in patients treated with PCI for NSTEMI.
Material and method: We examined patients with NSTEMI treated with PCI admitted to our Clinic between 2006-2009. For the purpose of this study selected parameters were compared during 6-month observation.
Results: There were 513 patients in population treated with PCI for NSTEMI divided into groups according to haemoglobin level: The first group-455 patients with Hb > 7,4 mmo/l, the second group-42 patients with Hb 6,2 - 7,4 mmo/l and the third group-16 patients with Hb < 6,2 mmol/l. Patients with lower haemoglobin level were older, had lower platelet count (271,1 vs 238,0 vs 212,4 tys./ Íl; p= 0.0001), lower cholesterol level (4,66 vs 4,69 vs 5,36 mmol/l; p= 0.0019) and higher glucose level on admission (9,23 vs 9,05 vs 7,49 mmol/l; p= 0,01). Lower haemoglobin level was also connected with lower GFR on admission (50,31 vs 59,68 vs 83,44 ml/min/1,73 m2; p<0,0001) and on discharge (50,41 vs 54,19 vs 85,40 ml/min/1,73 m2; p<0,0001). Patients from the third group were hospitalized longer (9,8 vs 6,9 vs 5,9 days; p= 0,01) and more often had blood transfusion (31,25 vs 1,98 vs 4,76%; p< 0,001). Higher in-hospital (25 vs 4,76 vs 2,42 %; p<0,0001), 30- day (31,25 vs 7,14 vs 3,52 %; p<0,0001) and 6-month mortality (37,50 vs 11,9 vs 5,71%; p< 0,0001) was observed in patients with the lowest haemoglobin level. In multivariate analysis independent the only factor influencing mortality was GFR on admission [HR= 0,96 (0,95- 0,98), p< 0,0001].
Conclusions Low haemoglobin level on admission is connected with higher in-hospital and 6-month mortality in NSTEMI treated with PCI. In multivariate analysis haemoglobin level is not the independent factor influencing prognosis in MI.

Carvedilol influence on the ultrastructure of myocardium of spontaneous hypertensive rats

ESC-ID: 631
Authors: Zagorodnyy M, Kuftireva T, Stechenko L, Svintsitskiy A
Country: Ukraine
University: Bogomolets National Medical University , Department: Internal medicine # 3

Aim of the study: To investigate Carvedilol influence on the ultrastructure of myocardium of spontaneous hypertensive rats (SHR).
Materials and methods: 11 test Wistar-Kyoto rats and 18 SHR (NISAG line) were experimented on. Experimental animals were divided into 3 groups: the 1-st group consisted of intact test rats (11 animals), the 2-nd group SHR (9 animals), the 3-rd group SHR which received Carvedilol (20 mg/kg added to food, 9 animals). Myocardium of left ventriculum was the material for electron-microscope study. The experiments were conducted following ethical rules of conduct with laboratory animals.
Results:. After 3 months of Carvedilol treatment there was a significant decrease of ultrastructural changes of cardiac hystiocytes and mitochondrions in the myocardium of left ventricle of SHR. Carvedilol decreases the parts of contracted fibers substantially, which indicates the normalization of contractile function of cardiac hystiocytes. Carvedilol also positively affected energetic system of cardiac hystiocytes. External mitochondrion membrane keeps its consistency. Electron density of matrix remains high whereas crista compactly adjoin each other and part of organelles has vacuolated intercrista space. Undersarcolem and perinuclear oedema are not as widely diffused as in cardiac hystiocytes of SHR. The ultrastructure of myocardium hemocirculatory stream changes under Carvedilol influence. The lumen of the majority of hemomicrovessels is dilatated, luminar surface of endotelocytes in these microvessels is thinner. Insignificant distance between the wall of microvessel and cardiac hystiocyte favors this state as well. The latter became possible due to the disappearance of perivascular swelling when taking Carvedilol.
Conclusion: Normalizing effect of Carvedilol on the SHR myocardium ultrastructure is conditioned by the medicine property to block adrenergic receptors and decrease the influence of sympathetic vegetative nervous system, which forestalls increment in activity of Purkinje's cells of His' bundle and peripheral vasoconstriction development. Carvedilol positive effect on SHR myocardium ultrastructure is caused by its antihypertensive effect as well as by its antioxidant properties.

Assessment of right ventricular function in patients with permanent septal pacing versus apical right ventricular pacing

ESC-ID: 721
Authors: Nouriankafshgari S, Amjad G, Abdous N, Nikmanesh P
Country: Iran
University: Shahid beheshti medical university, Department: cardiology

Aim: Permanent pacing is a conventional treatment for incompetent hearts and prevents the sudden death induc-

ing by left ventricular dysfunction. Several studies have focused on the effect of RV septal or apical pacing on LV function but most of them were not reliable. The assessment of RV function after septal versus apical RV pacing has never been investigated (in Iran). Our purpose is to assess RV function in patients with permanent septal versus apical RV pacing.
Methods and Materials: We conducted a cohort study of 60 consequences patients who underwent permanent DDDR pacing. The patients were categorized into two groups according to the type of pacing they received. They were followed prospectively by echocardiography and certain variables (Right and left EF; cardiac volumes and ejection time and ratio) which were assessed at baseline and one month after pacemaker implantation, to show patients' response to these two types of treatments.
Results: The mean age of patients was 64.6 ± 7, of whom 38.3% were male. The baseline evaluation shows the mean of RVEF 48.21 ± 4.3% in apical group and 53.61 ± 3.84% in septal group. The mean LVEF were 51.16 ± 5.93% in apical group and 56.98 ± 2.4%. The RVEF reduction at apical pacing was more significant than septal pacing after one month follow up (P<0.001) increase in LV diastolic parameters were significantly altered with increase in LV-IVRT from 86.23 ± 19.42ms, (P<0.001) in apical group. Increase in RV internal dimension from 1.44 ± 0.44, (P<0.05) was also noticed in apical group.
Conclusion: Our findings showed RVEF reduction after one month of follow up in both apical and septal pacing which was more significant in apical pacing.

Three dimensional echocardiography in surgical management of mitral regurgitation.

ESC-ID: 793
Authors: Thakur N, Preunca B, Parikh H, Mosteoru S, Ilie R, Bobilca V, Ionac A
Country: Romania
University: "VB University of Medicine and Pharmacy, Timisoara" , Department: Internal Medicine - Cardiology II

Introduction: Echocardiography is a key assessment tool for the evaluation of cardiac structure and function. The anatomy and function in different disease states, such as mitral regurgitation can be effectively studied using echocardiography, offering superior knowledge which helps in deciding the course of management. For the first time in echocardiography, three dimensional (3D) echocardiography allows an accurate view of the entire mitral valvular apparatus (aspect of the leaflets and their mobility, shape of the annulus and integrity and function of mitral chordae and papillary muscles) and accurately assesses transvalvular jets and helps to identify the mechanism of mitral regurgitation and guides the decisions regarding the most favorable type and the timing of the surgical treatment.
Purpose: To evaluate the feasibility of real - time 3D transthoracic echocardiography (TTE) in the digital reconstruction of mitral valve to ascertain the mechanism of the mitral regurgitation (MR).
Method: We studied 40 adult patients with significant mitral regurgitation. The complete routine echocardiographic study (two-dimensional, spectral and color Doppler) was realized. Additionally, 3D TTE was performed using two ultrasound imaging systems: Vivid 7 and Sonos 7500. All these patients subsequently underwent surgical correction for MR. We compared the echocardiographic results to the intraoperative data, regarding the mechanism of mitral regurgitation.
Results: An interpretable 3D image was obtained in all patients. The correlation between echocardiographic and intraoperative data was excellent. 3D TTE correctly identified the mechanism of MR.
Conclusion and Discussion: These cases illustrate that the use of high-quality real-time 3D TTE facilitates the understanding of the anatomy and the mechanism and severity of mitral regurgitation, and is clearly superior to two-dimensional echocardiography. Continued experience with 3D echocardiography will further our knowledge of the mitral valve and refine current indications for cardiovascular imaging.

Impact of drug eluting stents (DES) implantation on long-term clinical outcome in patients treated with primary PCI for STEMI

ESC-ID: 802
Authors: Ranosz P, Skowronek J, Siudak Z, Dudek D
Country: Poland
University: Jagellonian University, Department: 2nd department of cardiology

Background: According to the current ESC (European Society of Cardiology) guidelines, patients with STEMI (ST- elevation Myocardial Infarction) should be treated with primary PCI if there are no contraindications. Coronary stent implantation occurs in the majority of these patients. ESC guidelines give no specific recommendation on the type of stent to be used.
Aim: The aim of the study was to seek if DES stent implantation within IRA during PCI for STEMI is associated with better outcome.
Methods: Consecutive data of 1428 STEMI patients transferred for primary PCI were gathered. Patients were allocated into 2 study groups: DES - with Drug Eluting Stent implanted during primary PCI and BMS - with Bare Metal Stent implanted during primary PCI.
Conclusions Drug Eluting Stent were implanted in 383 (27%) patients and Bare Metal Stents were implanted in 1045 (73%) patients. Patients in both groups differed in mean age (DES vs BMS - 61,3 ± 12,1 vs 64,3 ± 12,0, p = 0.01), gender (males - 78,33% vs 72,08%, p = 0.04) and Killip class (3+4) on admission (6,79% vs 4,49%, p = 0.02). Both groups did not differ in past medical history of previous myocardial infarction, diabetes mellitus, chronic kidney disease and ischeamic stroke. Difference in Clinical outcome in both groups was observed: death at 30 days (1,83% vs 4,78%, p = 0,001), death at 1 year (3,66% vs 7,74%, p = 0,001). However no difference in angiographic outcome in both groups was observed.
Results: Drug eluting stents were implanted in ca. 27% of patients with STEMI during primary PCI. Decreased 30-day and 1-year mortality rates were observed in patients with DES implantation in comparison to BMS.

Cardiovascular causes of death in an east african country: autopsy study

ESC-ID: 961
Authors: Ogeng'o JA, Maina PG, Olabu BO
Country: Kenya
University: University of Nairobi , Department: Human Anatomy

Background: Spectrum of cardiovascular diseases varies between countries. Data from Eastern Africa are scarce, but important in formulation of disease management strategies. The aim of this study was to describe spectrum of cardiovascular causes of death in Kenya.
Subjects and Methods: One hundred and thirty four autopsy cases of cardiovascular related deaths examined at an East African City Mortuary from December 2005 to November 2009 were analysed for disease type, age and gender distribution. Only cases in which cardiovascular disease was the most likely cause of death were included. Data were analysed using SPSS version 15.0 for Windows and presented using tables and bar graphs.
Results: Cardiovascular causes comprised 13.2% of all autopsy cases. Common conditions included myocardial infarction (18.7%), cardiomyopathy (17.2%), subarachnoid haemorrhage (15.7%), pulmonary thromboembolism (14.2%), ruptured aortic aneurysm (11.2%) and hypertensive heart disease (9.0%). Infective pericarditis and rheumatic heart disease comprised 7.5% and 6.7% respectively. Mean age was 50.4 years, peaking at 40 - 60 years, with 56.7% aged 50 years and younger. Male:female ratio was 2.7:1.
Conclusion: Cardiovascular disease contributes over 10% of overall mortality. Myocardial infarction is the most common while rheumatic heart disease is the least common. It shows male predominance and mainly affects those aged 50 years and younger. This suggests that non-communicable diseases, while predominant, overlap with infectious conditions as causes of cardiovascular mortality. Search for, and prevention of, risk factors combined with prudent management of infection are recommended.

Transradial percutaneous coronary intervention: consummation and safety in pakistani population

ESC-ID: 1066
Authors: Valliani A, Khan M, Ahmed B
Country: Pakistan
University: Dow University of Health Sciences , Department: Medicine

Introduction: Common femoral artery (CFA) has traditionally been the site of access for coronary angiography and angioplasty. The size of femoral artery has been the key factor for preferring this site for access, especially in the era of large diameter diagnostic and angioplasty guiding catheters and poor profile balloons. Despite many advantages, the radial artery is accessed for very few coronary procedures globally. There is no data available regarding the trans-radial route of angiography and angioplasty in Pakistani population as only limited centers are using radial artery for these procedures. This study is aimed to determine the procedural safety and success of trans-radial angiography and angioplasty in a Pakistani population.
Methods: This was a prospective study on 264 consecutive patients undergoing transradial coronary angiography (TRCAG) and angioplasty (TRCAP) at Tabba Heart Institute, Karachi between November to December 2008. All patients enrolled in the study underwent Allen's test. Modified Allen's test was performed only when Allen's test was abnormal. Patients were excluded from the study if they had abnormal Allen's and modified Allen's test, were on hemodialysis or had abnormal serum creatinine level . The main outcome measures were success rate and complications of TRAG and TRCAP.
Results: The mean age of the sample was 57 ±11.08 years with 199 (75.4%) males and 64 (24.6%) of females. A total of 182 (76.3%) coronary angiographies and 82 (76.8%) coronary angioplasties were preformed from the trans-radial route in the study period. Overall procedural success rate was (235)94% for TRCAG with mean procedure time of 23.74± 6.26 minutes and mean fluoroscopy time of 5.65 ±2.3 minutes. The success rate for TRCAP was 82(93.6%) with mean procedure time of 62±10.6 minutes and mean fluoroscopy time for TRCAP was 15.78 ±8.90 minutes. Only 1 patient had mild forearm hematoma and asymptomatic radial artery occlusion occurred in 4 (1.5%) of study patients.
Conclusion: Trans-radial artery cannulation is a safe and successful route for performance of coronary procedures. It can be used as an acceptable alternate to transfemoral approach.

Influence of selected laboratory and echocardiographic parameters on the effectiveness of cardioversion of atrial fibrillation

ESC-ID: 1073
Authors: Oleszak T, Sabela J
Country: Poland
University: Poznan University of Medical Sciences, Department: Cardiology

Electrical or pharmacological cardioversion are effective treatment options for paroxysmal or persistent atrial fibrillation (AF), but in some patients (pts) fail to restore the sinus rhythm (SR). The aim of this study was to assess laboratory and echocardiographic parameters which could predict the result of cardioversion of AF.
Study group and methods: It was the retrospective study of 180 pts (96 men) hospitalized due to AF from 2007 to 2009. 76 (42,2%) pts had paroxysmal AF; 73(40,5%) persistent AF; 28 (15,6%) chronic AF. In 3 (1,7%) pts recurrent AF recognized.
Results: SR was restored in 70(92,1 %) pts with paroxysmal AF; 5 by electrical cardioversion (EC); 38 by the use of antiarrhythmic drugs (amiodarone-17;propafenon-8; amiodarone + propafenon-13) and in 16 pts the treatment with antiarrhythmic drugs was followed by EC. Conversion to SR failed in 6(7,9%) cases, 1 by EC; 5 by antiarrhythmic drugs use. In patients in which conversion to SR was failed there were significantly bigger (p=0,006) left atrial dimensions (>40mm) and lower TSH concentration (p=0,0431) compared with he group of pts treated successfully. In patients with persistent AF conversion to SR was successful in 55 (68,5%) cases, 10 by EC; 15 by antiarrhythmic drugs use (amiodarone-9;propafenon-2; digoxin1; amiodarone+propafenon-1; amiodarone+ digoxin-2); 25 with both synchronized cardioversion and antiarrhythmic drugs. Conversion to SR was failed in 18 (31,5%) cases,1 by EC; 10 by antiarrhythmic drugs use, 3 with both EC and antiar-

rhythmic drugs. In patients in which the conversion to SR was failed there were statistically significant bigger (p=0,049) left atrial dimensions (>40mm) compared with the group of pts treated successfully.
Conclusions Electrical cardioversion and antiarrhythmic drugs use are equally effective ways of treating both paroxysmal AF and persistent AF. Enlargement of left atrium and lower concentration of TSH are the predictor of unsuccessful treatment.

The Difference of ankle-brachial index between smoker and non smoker

ESC-ID: 1098
Authors: Sumirat R, Setiabudi E, Pinandojo D
Country: Indonesia
University: Maranatha Christian University , Department: Medical Faculty - Internal Medicine

Introduction: According to the World Health Organization (WHO), currently there are at least 1.3 billion tobacco smokers worldwide. Indonesia is in the fifth place amongst countries with the highest tobacco consumption in the world. Smoking is one of the main factors of cardiovascular diseases, such as peripheral arterial disease (PAD). The most accurate method to diagnose PAD is to measure ankle-brachial index (ABI). ABI is also a highly specific method for the assessment of vascular risk in otherwise asymptomatic patients. The aim of this study was to compare ABI value between smoker and non smoker and was also to know the prevalence of PAD in smokers in Indonesia.
Materials and Method: This study was an observational study with a cross sectional design and was a comparative-quantitative study. There were 40 smoker subjects and 33 non-smoker subjects selected with consecutive sampling method. ABI is the ratio of the ankle to brachial systolic blood pressure which is measured using handheld Doppler. PAD was diagnosed as ABI < 0.90. Data were analyzed by independent T-test and Mann-Whitney Test. A p-value < 0.05 was considered statistically significant.
Results: The mean value of left ABI in smoker was 1.047 while in non smoker was 1.121 (p=0,014). The mean value of right ABI in smoker was 1.045 while in non smoker was 1.113 (p=0.020). The mean value of mean ABI in smoker was 1.046 while in non smoker was 1.117 (p=0,009). 8 smokers (20%) had PAD with only 2 non smokers (6.06%) had PAD.
Discussion and Conclusion: The smoker's ABI is lower than the non smoker's ABI. The prevalence of PAD is also higher in smoker than in non smoker. These results shows that smoking can lower ABI value and put ones in risk of PAD.

Does coronary artery disease (CAD) in history influence prognosis in patients with acute myocardial infarction treated by PCI?

ESC-ID: 1110
Authors: Halak T, Kurek A, Prudel B, Okoniewski M
Country: Poland
University: Medical University of Silesia, Department: Department of Medicine in Zabrze

Introduction: There are many factors influencing prognosis in patients with acute myocardial infarction (MI). There are some coverages that history of CAD may influence prognosis in patients with acute MI treated by PCI.
The aim: To compare prognosis in AMI treated by PCI in patients without CAD in history and in patients who had previously diagnosed CAD.
Material and method: We examined consecutive patients with AMI treated with PCI, admitted to our clinic between 1998 and 2008. Patients were divided into two groups: group I - patients without CAD in history, group II - patients with CAD.
Results: We analysed 3746 consecutive patients with AMI treated with PCI. There was 73% men in the first group and 71% in the second. Patients with CAD were less often smokers (56,05% vs 61,53%; p = 0,0008), more often had hypertension (59,77% vs 47, 89%; p<0,0001) and diabetes (24,65% vs 19,65%; p=0,0003). Moreover, 45% patients from II group had prior MI . Patients from II group were less often treated with fibrnolysis (16,13%vs19,47%;p=0,0086), more often had multivessel CAD (60,04 vs 40,35%; p<0,0001) and more often initial TIMI 0-1 flow (78,86% vs. 75,04%; p=0,0069). Lower percentage of stent implantation (70,84% vs 77,13%; p<0,0001) and final TIMI 3 flow (86,56% vs 89,76%; p = 0,0008) was observed in patients with CAD. Patients from II group more often underwent planned PCI (11,1% vs. 8,97%; p = 0,031), planned (6,51% vs. 4,42%; p = 0,0052) and urgent CABG (2,26%vs.1,04%; p = 0,004). Cardiogenic shock was more frequent in II group (12,05% vs. 8,3%; p = 0,0002). Patients with CAD had higher in-hospital (7,16% vs. 4,89%; p=0,003) and one-year mortality (12,59% vs. 8,51% ; p<0,0001). In multivariate analysis independent factors which one-year mortality were: cardiogenic shock [HR=4,95 (3,94-6,23); p = 0,0001], initial TIMI 0-1 flow [HR = 1,46(1,09-1,95); p = 0,012], multivessel CAD [HR = 1,44(1,14-1,82); p = 0,002], anterior wall MI [HR = 1,34(1,09-1,66); p = 0,006], diabetes [HR = 1,04(1,01-1,06); p = 0,001], age [HR = 1,04(1,03-1,05); p = 0,0001], glicaemia at admission [HR = 1,04 (1,01-1,06); p = 0,0006], LVEF [HR = 0,95 (0,94-0,96); p=0,0001], final TIMI 3 flow [HR = 0,66 (0,52-0,85); p = 0,0012], stent implantation [HR = 0,6(0,48-0,75); p<0,0001].
Conclusion: Patients with CAD demonstrated prior to MI had higher in-hospital and one-year mortality. In multivariate analysis CAD in history was not an independent factor influencing prognosis in patients with acute MI treated by PCI.

Can clinical TIMI risk score predict angiography in patients with ST-elevation myocardial infarction?

ESC-ID: 1146
Authors: Golabchi A, Sadeghi M, Sanei H, Akhbari MR
Country: Iran
University: Isfahan university of medical science , Department: medicine

Background: In most studies, the agreed risk scores for STEMI consist of the TIMI risk score and the modified Gensini risk score. Researches so far have only examined and showed significant relationship between TIMI and Angiography scores in patients with UA/ NSTEMI; but in the current study we evaluated this relationship in patients with STEMI.
Methods: The participants of the study were CCU

patients with STEMI in several hospitals of Isfahan, Iran, from August 2007 to June 2008. 240 patients were selected for the study by simple random sampling method. Exclusion criteria were incomplete history, nonspecific electrocardiogram changes, left bundle branch block, not undergoing angiography, or undergoing angiography 2 months after the occurrence of STEMI. The patients were scored using a questionnaire, based upon TIMI scores (0-14 points). Then, the patients underwent echocardiography and angiography studies. Afterwards, we used Gensini scoring system (0-400 points) to review angiography films. To evaluate the possible relationship between the scores obtained before and after fulfillment of angiography study, we used Spearman`s rank and Pearson`s correlation coefficient.
Results: The participants' average age was 60.02 years and 161(67%) of them were male. The averages TIMI and Gensini scores were 6.30 ± 2.5 and 120.77± 50.4, respectively. The results obtained showed a significant relationship between patients' TIMI score, age and LVEF (P <0.001, r = -0.46). Moreover, a significant relationship was observed between patients' Gensini scores and age, gender and LVEF (P <0.001). Nevertheless, there was not a significant relationship between TIMI scores and patients' gender (P = 0.08). The current study demonstrated a direct relationship between TIMI risk score and modified Gensini score (P <0.001, r = 0.55).
Conclusion: Making use of TIMI score in emergency unit, a physician is able to quickly and correctly decide which patients with STEMI benefit from invasive strategies. Also, TIMI risk score is a good predictor to determine the extension of CAD in patients with STEMI. Thus, we suggest determining the TIMI score for any patient admitting in emergency unit. Also, this score should be recorded at discharge letters.

The additive value of torsion to global longitudinal left ventricular strain in patients with systolic dysfunction. A pilot study.

ESC-ID: 1159
Authors: Bobilca V, Thakur N, Parikh H, Mosteoru S, Preunca B, Ilie R, Mornos C
Country: Romania
University: "Victor Babes" University of Medicine and Pharmacy, Timisoara , Department: Internal medicine- Cardiology

Torsional and longitudinal deformations are essential components of left ventricular (LV) performance. We believe that a precise assessment of LV function must take into account both LV torsion (LVtor) and global longitudinal strain (LVε).
Aim: to investigate with 2D-strain echocardiography the value of a new parameter, LVtor¡ ¿ LV¥ å, for assessing LV function in patients with systolic dysfunction and validated it against N-terminal pro-brain natriuretic peptide (NTproBNP).
Methods: Echocardiography was performed simultaneously with NTproBNP determination in 78 consecutive patients (mean age 63¡¾13 years) with LV systolic dysfunction (LV ejection fraction<50%), in sinus rhythm. Peak early diastolic transmitral velocity/peak early mitral annular diastolic velocity ratio (E/Ei') and peak systolic mitral annular velocity(S') were determined; the average of the velocities from the septal and lateral site of the mitral annulus was used. LVtor was defined as the ratio between LVtwist (LVtw) and LV end-diastolic longitudinal length. LVtw (net difference between rotation angles at base and apex) was obtained from parasternal apical and basal short-axis planes by 2D-strain using off-line method. LV¥ å was obtained by averaging longitudinal peak systolic strain of all 17 LV-segments from apical planes (four-, three- and two-chamber view). LVtor¡ ¿ LV¥å was calculated.
Results: Simple regression analysis demonstrated a statistically significant linear correlation between log-transformed NTproBNP and LVtor¡ ¿ LV¥ å (r = 0.71, p<0.001), LV¥å (r = 0.57, p<0.001), pulmonary artery systolic pressure (r = 0.48, p<0.001), E/E¡ ¯ (r = 0.42, p<0.001), LVtor (r = -0.39, p<0.001), LVtw (r = -0.36, p = 0.001), S¡¯ (r = -0.36, p = 0.001) and LV ejection fraction (r = -0.35, p = 0.01). On multivariable analysis, including LVtor¡¿LV¥ å, LVtw, LVtor, LV¥å, E/Ei' ratio, S¡¯ wave, LV ejection fraction and pulmonary artery systolic pressure as candidate variables, LVtor¡ ¿ LV¥ å (¥ â = 0.97, p<0.001) emerged as the best independent predictor of NTproBNP levels (r®/ = 0.65; t = 9.8; p<0.001). The area under the receiver-operating characteristic curve for prediction of NTproBNP levels >900 pg/ml was greatest for LVtor¡ ¿LV¥å (AUC = 0.85, p<0.001). LVtor¡¿LV¥å was more accurate (sensitivity=82%, specificity=84%) than LV¥ å, E/Ei', LVtw, LVtor, Si', LV ejection fraction and pulmonary artery systolic pressure (each p<0.05) to predict NTproBNP >900 pg/ml.
Conclusions: This study demonstrates that in patients with systolic dysfunction in sinus rhythm, the evaluation of LV function can be accurately accomplished by adding LVtor to LV¥å.

Lipid profile and iron content in serum of rabbits with experimental atherosclerosis

ESC-ID: 1179
Authors: Colic J, Sljivancanin T, Vucevic D
Country: Serbia
University: University of Belgrade, Serbia , Department: Institute of Pathophysiology

Introduction: The lipid profile has an influence in initiation and development of atherosclerosis, as well as iron, as a catalyser of some oxidants production.
Aim: The aim of our study was to examine the content of lipid fractions (total cholesterol /TC/, triglycerides /TG/, low density lipoproteins /LDL/ and high density lipoproteins /HDL/) and iron in serum of rabbits with experimental atherosclerosis induced by hypercholesterolemic diet.
Material and methods: For this study three groups of rabbits were used: C - control group fed on a standard diet for this species (n = 7), O - control group fed on an oil-containing diet (n = 7) and Ch - experimental group fed on a hypercholesterolemic diet (n=7). After two-months of treatment we examined serum content of TC, TG, LDL and HDL by enzymatic colorimetric method. Serum iron con-

tent was quantified by atomic absorptive spectrophotometry. Experimental atherosclerosis was pathohistologically confirmed.
Results: TC and LDL contents were highly significantly increased ($p<0.01$) in serum of O and Ch groups compared to C group.Highly significant increase of TC and LDL was noticed in serume of Ch group ($p<0.01$) compared to C group.In comparison with C group TG content was highly significantly decreased ($p<0.01$) in serum of O and Ch groups. HDL content was significantly decreased in serum of O and Ch groups compared to C group, as well as in serum of Ch group compared to O group ($p<0.05$). On one hand, highly significant increase of iron content was registered in serum of Ch group ($p<0.01$) compared to C group,but on another hand in comparation with O group iron content was significantly increase in serum of Ch group ($p<0.05$). In comparation with C group iron content was significantly increased in serum of O group ($p<0.05$).
Conclusion: Our findings indicate that lipid profile is of importance in the pathogenesis of experimental atherosclerosis, as well as a possible role of iron in development of this disease.

Hemodynamic parameter of the anastomosis model for the coronary artery bypass

ESC-ID: 1427
Authors: Vinatu VF, Totorean AF, Bernad SI, Susan-Regisa RF
Country: Romania
University: "Politehnica" University of Timisoara , Department: Department of Medical Engineering

Objective: An investigation of unsteady flows in a three-dimensional bypass model was carried out for Newtonian fluid analogue to blood. The flow conditions considered are of relevance to hemodynamical applications and the localization of coronary diseases, and the main objective was to quantify the accuracy of the predictions and to provide benchmark data that are missing for this prototypical geometry.
Methods and materials: Coronary artery bypass grafting surgery is an effective treatment modality for patients with severe coronary artery disease. The conduits used during the surgery include both the arterial and venous conduits. Predominantly arterial bypasses (conduits) used for coronary bypass grafts seem to be logical based on the assumption that their long-term patency is similar to ITAs and will be better than the patency of venous conduits. Long-term follow-up of arterial conduits patency are either missing or sketchy. In this paper, the geometrical bypass models (aorto-right coronary bypass graft model) are based on real-life situations. In our models, the dimensions of the aorta, saphenous vein and the coronary artery simulate the actual dimensions at surgery.
Results: In the present study, 3 end-to-side bypass models, namely the conventional 30, 45 and 60 degree anastomoses were compared in terms of IH and flow pattern in the host artery. The results showed that compared with the control group without bypass surgery, neointima thickness along the host artery floor in all 3 bypass models was significantly increased. The larger the anastomotic angle, the thicker the neointima. But the neointima thickness of the 45 type bypass was apparently better than its 30 and 60 conventional counterpart. Therefore, the improvement in the term of IH for the 45 degree type bypass is most likely due to the swirling flow created by the geometrical configuration of the 60 degree type bypass. Unsteady flow calculations were carried out with the same mesh and a time step normalized with the oscillating period $t = 0.001$ s. Comparison between the theoretical and predicted velocity profiles along a complete cycle is excellent. For the pulsating flows a periodic instability was found, which manifests itself by the breakdown of the main vortex into two pieces and the subsequent advection of one of them, while the secondary vortex in the main duct was absent for a half of the oscillating period. Shear stress maxima were found on the walls opposite the recirculations, where the main fluid streams impinge onto the walls.
Conclusion: The computed results have revealed that: - maximum perfusion of the occluded artery occurs during mid-diastole, and the maximum wall shear stress variation was observed around the toe of the anastomotic region. The present study suggests that the disturbed flow with slow recirculation flow and low WSS created at the distal end-to-side anastomosis might be the cause to the progressive IH along the host artery floor. Therefore, an ideal bypass surgery should not create any disturbance to blood flow. In actual practice, however, it is almost impossible to fulfill this condition.

Session: Dentistry – Poster

Correlation between ischemic stroke and teeth

ESC-ID: 544
Authors: Farkashdi SH Yakovlev M, Ibrohimov SH Prosvetov R, Milkinsky M, Sokov P, Sokov E
Country: Russia
University: Peoples' Friendship University of Russia , Department: Neurology and Neurosurgery, Municipal Hospita

Introduction: Stroke is one of the most common reasons of human death. In WHO statistic stroke stands in the second place of the „The 10 leading causes of death in the World" (2004). Teeth disease and oral hygienic is also an ordinary problem in human civilization. The etiology of cerebral stroke is well observed. But there is not enough investigation about correlation of cerebral stroke and pathology of teeth. But we know reports about periodontitis and atherosclerotic cardiovascular disease. The aim of our investigation was to explore our patient`s teeth, who had acute ischemic stroke, and stroke in the past and find out correlation between teeth reduction and lesion focus after stroke. This aim was based on the fact that disorder in neural trophism of any organ can lead to gradual dystrophy and to abnormality in functioning of this organ. The tooth of human is a separate organ, which has his own neural trophism. Progressive changes of brain (such as ischemia) can lead to disorder in neural trophism of teeth and periodontium, which can result in periodontium`s destructive process and in loosing of teeth. The second aim was to identify oral hygienic status of a patient who had stroke. The third aim was to estimate the level of patients' rehabilitation in the acute period after stoke.
Materials and methods: We have observed 75 patients in

our clinic. 25 of them had ischemic stroke in the past (half and more years ago). 50 patients had acute ischemic stroke. Our observation included dental examination and inquiry about stomatological enlightenment (culture). We took into account caries, plaque, extracted tooth, periodontium inflammatory. Separately we estimate the number of the lost teeth with respect to the insults` focuses.
Results: According to the aims of our investigation we got the following results. The average of the extracted teeth on the homolateral side with the stroke in the acute period is 4,05 ± 0,54. The average of extracted teeth on the heterolateral side with the stroke in the acute period = 5,3 ± 0,49. The average of extracted teeth on the homolateral side with the stroke in the past = 4,2 ± 0,77. The average of extracted teeth on the heterolateral side with the stroke in the past = 5,35 ± 0,80. The 70,6% of the patients had bad level of oral hygienic. Also we made some changes in circuitry of rehabilitation in the acute period after stoke.
Conclusion: Patients (all of them) had less teeth on the opposite side from stroke. Patients, who had ischemic stroke in the past, had more lost teeth than the patients, who had acute ischemic stroke. This result shows that there is a some correlation between strokes` focus and quantity of teeth. There is a necessity of including the dentists in the rehabilitation process of patients` with stoke.

The effect of bovine demineralized bone matrix on regeneration of rabbit parietal bone defect.

ESC-ID: 751
Authors: Aghazadeh S, Azimi H
Country: Iran
University: Shahed dental school , Department: maxillofacila surgery

Background: Bone grafting is used to enhance healing in osteotomies, arthrodesis, and multifragmentary fractures and to replace bony loss resulting from neoplasia or cysts. They are source of osteoprogenitor cells and induce bone formation and provide mechanical support for vascular and bone ingrowth. Autografts are used commonly but quantity of harvested bone is limited. The aim of this study is to evaluate allograft and new xenogenic bovine demineralized bone matrix (DBM) effects on bone healing process.
Materials and methods: Seven male White New Zealand rabbits were used in this study. In group bovine DBM the defect was filled by xenogenic DBM and in allograft group the defect was filled by demineralized cortical powder (Kish code295), control group left without any graft. histopathological evaluations were performed and results analyzed statistically.
Results: We found that bone formation is occurred in all bovine DBM (Cow) and human DBM (Kish) group specimens while in Control group just 3 specimens showed negligible bone formation. Statistical analysis showed that there was a significant difference between bovine DBM group (Cow group) and human DBM group (Kish group) with Control group in amount of bone formation. Bone formation in Cow and Kish group was greater than Control group. But the difference between Cow group and Kish group was not statistically significant.
Conclusions: The results of this study indicate that satisfactory healing occurred in rabbit radius defect filled with xenogenic bovine DBM. Complications were not identified

About some precancerous forms of oral mucosa

ESC-ID: 777
Authors: Kuritsyna M
Country: Russia
University: Tver State Medical Academy , Department: Stomatological

Up to date a great number of physicians consider erythroplasia of Queyrat and erythroplakia of oral mucosa like the same diseases. They don`t see essential clinical and morphological distinctions between these diseases. As well clinical and morphological opinions vary on how to interpret erythroplasia of Queyrat: is it a precancerous process or a cancer. We researched 1438 people at the age of 18-94 years. Erythroplakia was diagnosed in 6 patients, erythroplasia of Queyrat- in 5 patients. Histological and histochemical studies of bioptic and operative material were made. Erythroplakia had the appearance of red circular or oval macula with distinguished boundaries with diameter up to 0,6 cm. Lesion focuses did not rise above the surrounding oral mucosa. Foci had smooth, humid, shining surface. Erythroplakia had been characterized by focal apparent atrophy and thinning of epithelium. Short and thin single crests had focal cellular hyperplasia of the basal layer without any signs of dysplasia. Connective-tissue papillae were low and wide. There were plethoric dilated capillaries and small periventricular hemorrhages in subepithelial layer. Sometimes hemorrhages localized in the basal layer of epithelium. Also there were apparent sclerosis and focal lymphoplasmacytic infiltration in the submucous layer. Erythroplasia of Queyrat had the appearance of plaque of irregular shape with different tints of red and size near 0,6 x 0,8 cm. Foci rised above the surrounding oral mucosa and have fine-grained mat surface (in 3 cases) and smooth, shining surface (in 2 cases). There were hyperplastic and atrophic processes at the same time. Acanthotic bundles were very thin and long and stretched from epithelium orthogonally. Hyperplasia of epithelial cells without signs of polymorphism or atypia was observed in these bundles (in 3 cases). Epithelium had the appearance of „comb“. Such structural variant of erythroplasia of Queyrat we named „epidermoid“. In two examinations acanthotic bundles were wide and had cell`s hyperplasia with signs of cellular polymorphism, also there were singular figures of mitosis. Epithelial cells had stretched spindle-shaped form. This variant was regarded as „spindle-cell“. During one examination apparent cellular and nuclear polymorphism was observed in acanthotic bundles. Epithelial cells were presented by large hyperchromic cellular elements; giant deformed cells were among these elements. Pathological forms of mitosis were exposed. Such changes were pathognomonic for Bowen`s disease. This structural type we named like „bowen- shaped“. In every examination connective-tissue papillae were narrow and tall. There were sclerosis and diffuse lymphoplasmacytic infiltration in the submucous layer, against the background of sharply dilated plethoric vessels and focuses of haemorrhages. These denoted morphological factors were considered as pathognomonic for

erythroplakia and erythroplasia of Queyrat. It is determined that with the lapse of time dynamics of malignization of erythroplasia of Queyrat increase progressively from one form to other: epidermoid variant - spindle-cell variant- bowen- shaped variant - carcinoma in situ - invasive cancer. For the reason of findings we consider erythroplakia like facultative precancer and erythroplasia of Queyrat- like obligate precancer of oral mucosa.

The application of low level laser for managing oral mucositis

ESC-ID: 912
Authors: Chiniforush N, Shahabi S, Johari M, Bassir SH
Country: Iran
University: Tehran University of Medical Sciences, School of Dentistry, West Taleghani Avenue , Department: Laser Research Center of Dentistry

Introduction: Oral mucositis is considered as one of the most severe complications in cancer patients which treated with radiochemotherapy for head and neck tumors. This condition may lead to ulceration with pain which results in poor oral hygiene, inability to swallow and secondary infection.it can delay the treatment and affects the quality of life. Among several approaches for reducing the pain and prevention of infection, there is some evidence of a beneficial role of low energy laser irradiation for the prevention and therapy for oral mucositis.
Materials and Methods: All patients were treated by a single operator using low level laser by different wavelength (HeNe: 632.8nm, GaAlAs: 780 nm and InGaAlP: 660nm). They received daily direct treatment to lower labial mucosa, right and left buccal mucosa, lateral and ventral surfaces of the tongue, and floor of mouth. The treatment continued as a scheduled treatment plan.
Results: There was significant decrease in daily average experience of pain, severity of mucositis and functional impairment. The mechanism of LLLT can be due to its anti-inflammatory and analgesic effects. It can also increase the vascularity and re-epithelization of injured tissue.
Conclusions: The use of low level laser appears to be a simple, non-traumatic technique for prevention and treatment of radiation induced mucositis.

The determination of the optimal dose of Triamcinolone acetonide injection in treatment of temporomandibular joint arthritis in rat.

ESC-ID: 939
Authors: Foroozia M, Peimani A
Country: Iran
University: University of Medical Science, Qazvin, Department: Oral and Maxillofascial surgery

Introduction: 20-30% of adult population has experiences of temporomandibular joint (TMJ) disorders. It seems that referral or persistent pain is the most important cause in treatment of 90% of patients. Primary step for reduction of pain and joint dysfunction is nonsurgical treatment. Intra-articular injection of glucocorticosteroid is one of the treatments of patients with pain or dysfunction of TMJ. Besides the therapeutic effects it also has its side effects that as some studies show. The aim of this investigation was to determine optimal dose of Triamcinolone injection in treatment of arthritis in order to controlled side effects.
Methods and Materials: In this experimental animal study, after the sedation of 25 rats, experimental chronic inflammation induced by injection of Complete Freund's Adjuvant (CFA) in left TMJ of all 5 groups. After 7 days, injection of Triamcinolone acetonide performed like this: Group A: 0.1 mg/kg, Group B: 0.2 mg/kg, Group C: 0.5 mg/kg, Group D: 1 mg/kg and group E: only normal saline equivalent volume in other groups. After 10 days, rats were sacrificed and according to modified Gynther system, three factors of inflammatory cells infiltration, vascularity, number of synovial cell layers were evaluated, and got scored.
Results: All the groups with injection of Triamcinolone acetonide showed lower scores but only differences in two factors of vascularity and number of synovial cells in group B was statistically significant and in addition, group B showed more predictable results than other groups in every three factors.
Conclusion: According to the findings of this study we suggested that the best dose of intra-articular injection of Triamcinolone acetonide in rat TMJ is 0.2 mg/kg that we got the most reasonable therapeutic results. So evaluating the optimal dose for human joint, leads to achieve the best results with the least side effects is recommended.

A comparison of the efficacy of potassium nitrate and gluma desensitizer in the reduction of hypersensitivity in teeth with full-crown preparations

ESC-ID: 1078
Authors: Eyvaz ziaee A, Jalalian E
Country: Iran
University: Tehran Islamic Azad university, faculty of dentistry, Department: Prosthodontics

Aim: The aim of this clinical investigation was to compare the efficacy of Gluma Desensitizer® and potassium nitrate desensitizing agents on the reduction of hypersensitivity of teeth prepared for full coverage crowns.
Methods and Materials: This study included 75 vital teeth in 25 patients in need of fixed prosthesis treatment. After completing routine examinations, hypersensitivity of the teeth was measured using an air sensitivity test. The measurement of sensitivity was using a Visual Analog Scale (VAS) before preparation, after preparation, before using desensitizers, after using desensitizers, and before cementation. Each tooth was randomly put into one of the three groups of 25 teeth according to the desensitizing agent used (potassium nitrate, Gluma, and the control). In each patient potassium nitrate was used on one of the abutments and Gluma was used on the other abutment and on the third abutment (the control) no substance was used.
Results: Both desensitizers decreased dentinal hypersensitivity in vital teeth prepared for full-coverage crowns, but potassium nitrate was more effective when applied before cementation. In 88% of the teeth to which Gluma was applied a vascular pain (with pulse) was present.
Conclusion: The results of this investigation suggest the application of potassium nitrate to dentin in full crown preparations prior to cementation reduces postoperative sensitivity. Clinical experiments show the

preparation of vital teeth for full coverage crowns can cause sharp, transient pain as a result of dentinal hypersensitivity in the majority of cases. Several different substances and methods have been suggested for reducing such hypersensitivity including costly laser treatments. However, the findings of this study indicate the use of desensitizer substances such as potassium nitrate can reduce tooth hypersensitivity efficiently with less expense.

Comparative evaluation of the oral cavity state and Candida occurence in Polish and foreign dentistry students with no systemic diseases.

ESC-ID: 1080
Authors: Krawiecka E, Jankowski M, Krys J, Lackowska M, Piotrowska I, Smoczynska-Marczak M
Country: Poland
University: University of Medical Sciences in Poznan , Department: Department of Conservative Dentistry and Peri

Introduction: Evaluation of the oral cavity state in generally healthy Polish and foreign dentistry students and its relation to Candida occurrence has not been an object of many studies. The aim of the study was to compare the oral mucosa and the parodontium state, dental caries prevalence, oral hygiene, Candida occurrence and the frequency of oral lesions in Candida carriers in aforementioned groups.
Material and Methods: Study group included 79 healthy dentistry students, 43 Polish (1st group) and 36 foreign (2nd group), aged 20-25, 52 females and 27 males. Patient's chart including general health, diet and habits, oral hygiene (OHIs), caries frequency (DMFT), parodontal status (CPITN), oral mucosa condition and Candida occurence was used in the study.
Results: There was no considerable difference in the1st and 2nd group in OHIs (0,36; 0,48) or CPITN (0,86; 1,03). More teeth with active caries were observed in the 2nd group (D - 0,35; 1,17). The most frequent oral mucosa lesions were white coated tongue (51,2%; 61,1%), linea alba (58,1%; 52,8%) and melanoplakia - only in the 2nd group (13,9%). Positive Candida culture results were found in 34,9% and 41,7% subjects of 1st and 2nd group, respectively. White coated tongue was observed in 60,0% of Candida carriers (both groups), linea alba in 53,3% (both groups), melanoplakia in 13,3% (2nd group only). White coated tongue was the only lesion observed more frequently in Candida carriers than in non-carriers (60,0% and 53,1%).
Conclusions: 1.The evaluation of the oral cavity state in Polish and foreign students showed no considerable difference. 2.Among foreign students more teeth with active caries were found, white coated tongue and melanoplakia were more frequent. 3.Among Candida carriers oral hygiene was worse, there were more decayed teeth and higher frequency of white coated tongue.

Comparing the histopathologic outcomes of transplanting a new deproteined bovine bone preparation against Bio-Oss for parietal bone defects in rabbits

ESC-ID: 1097
Authors: Alai AAC, Riazi H, Shalileh K, Azimi Lisar HR
Country: Iran
University: Tehran University of Medical Science, Department: School of Dentistry

Introduction: Bone defects, mostly caused by tumor excision, fractures, cysts and aging, are a major concern in maxillofacial surgery. Effective but expensive grafts are available.
Objective: To compare the effect of transplantation of a new deproteinated bovine bone preparation with a similar conventional industrial product, Bio-Oss(®), on parietal bone regeneration.
Methods: Bovine bone was deproteinated through suspension in an alkaline solution, and the remaining material was sterilized in powder form. Symmetrical segments of both parietal bones were surgically removed from 12 inbred New Zealand rabbits, and the defects were transplanted with the above preparation on one side and Bio-Oss(®) on the other. The defect area was measured using light microscopy 4 weeks after transplantation.
Results: After 4 weeks, the reduction in defect area had no significant difference between the two sides.
Conslusion: The deproteinated bovine bone preparation used in our study had similar effects on the repair of parietal bone defects compared to Bio-Oss(®) and thus may serve as an alternative for the treatment of such defects.

Kinetic and microbiological approach to the problems of tooth decay

ESC-ID: 1115
Authors: Shestopalov M, Savenok A
Country: Belarus
University: Gomel state medical university, medical department

Introduction: Tooth decay is a disease process where acidic waste products created by oral bacteria cause damage to the hard (mineralized) tissues of a tooth. Today, caries remains one of the most common diseases throughout the world. Worldwide, most children and an estimated ninety percent of adults have experienced caries, with the disease most prevalent in Asian and Latin American countries and least prevalent in African countries. An effective way to prevent tooth decay is oral hygiene. The aim of our investigation was to compare the effectiveness of toothpastes of different categories, using both kinetic and microbiological approaches.
Materials and methods: The toothpastes on study were: 32 pearls (Belarus), Kedrovaya (Belarus), Silca (Germany), Astera (USA), Senquel Active (India), Colgate (Ukraine), Blend-a-med (Ukraine), Faberlic (Russia). To compare their effectiveness in maintaining the tooth enamel from decay we immersed teeth into 0.1 mol/L hydrochloric acid solution that contained 0.5 grams of toothpaste, and examined their dissolving process by taking samples through fixed time terms with later analyses of calcium in them. Calcium content was determined by complexonometric titration method. The obtained data allowed us to calculate three kinetic parameters that characterize pastes effectivity: inductive period, the rate con-

stant of teeth dissolution and half-life of teeth enamel. Kinetic studies were carried out simultaneously with the effects of toothpastes on the microflora of the oral cavity. Since two groups of bacteria are responsible for initiating caries: Streptococcus mutans and Lactobacillus, we studied the growth of their colonies after cleaning the teeth by different toothpastes. Discussion. The experimental data revealed that the kinetic curves that characterized the dissolving process of tooth enamel can be subdivided into three segments: (a) the inductive period (the rate of dissolution is zero), (b) the period of intensive dissolution (rapid increase in calcium concentration), (c) the period of constant calcium concentration (the dissolving process came to the end or reached the equilibrium state). We proved the first-order kinetics for tooth enamel dissolution and calculated the rate constants of this process and half-life of teeth. The inductive periods of most pastes were in a range 20-40 minutes; the rate constants varied from 0.065 to 0.0125 min-1 and teeth half-life took the values from 11 to 56 minutes. For comparison, the rate constant of unprotected tooth was 0.081 min-1 and its half was only 8.6 minutes. Clearly that toothpastes protest enamel from decay. The calculations revealed that rate constants are directly proportional to the inductive periods of teeth destruction: the greater inductive period, the lower the rate of teeth mineral component dissolution. We proved the correlation between kinetic characteristics of toothpastes and their antibacterial activity. The pastes responsible for the maximum decrease in the rate of teeth destruction were most effective in suppressing the growth of micro flora in oral cavity. For example, Senquel Active (rate constant 0.018 min-1) 100 times reduced the growth of microflora, while Silca (rate constant 0.045 min-1) 10 times reduced its growth only.
Conclusions: We developed the method of comparing the effectiveness of toothpastes, which includes the kinetic and microbiological approaches to the test object.

Efficiency of low strenght lasers in treatment of mouth burning syndrome

ESC-ID: 1428
Authors: Vostinic V, Garic N, Spasic M
Country: Serbia
University: University of Nis , Department: Oral medicine and Parodontology

Introduction: Low strength lasers are beneficial in treatment of almost all painful oral conditions and diseases. On the other side, Mouth Burning Syndrome is a painful condition on the oral mucosa, particularly on the tongue. The aim of this study was to determine the efficiency of low strength lasers in the treatment of Mouth Burning Syndrome.
Material and Methods: The investigation included 30 patients with Mouth Burning Syndrome. Standard diagnostic and therapeutic methods were applied in 15 patients. The remaining 15 patients were subjected to the same procedures and additionally, to 5 laser irradiation seances 4 minutes of duration each. LLLT was applied, with a Scorpion Dental Optima apparatus (wave length 635 nm, strength 25mV). The pain intensity was "measured" with Visual Analogue Scale from the first day of treatment.
Results: The results showed that laser therapy produced very beneficial effects on all "bad" feelings in these patients. At the first group 6 patients (40 %) showed value around point 5. after first treatment, another 4 patients (26.7%) showed value around point 5 after third treatment, as well as 11 patients (73.33%) showed value around point 2 in the end. At the second group 8 patients (53.33%) showed value around point 5 after first laser treatment, another 5 patients (33.33%) showed value around point 5 after third laser treatment, and in the end 14 patients (93.4%) showed value around point 1 on the Visual Analogue Scale.
Conclusion: Low strength lasers showed positive effects in the treatment of Mouth Burning Syndrome, particularly because of their biostimulating and analgesic effects.

Session: Dermatology

Clinical forms and epidermiological features of rosacea

ESC-ID: 523
Authors: Thurkkaram I
Country: Belarus
University: Vetebsk state medical university , Department: dermatology

The aim of our study was to investigate peculiar features of rosacea progression in patients from Belarus.
Material and methods: We observed 78 patients with rosacea (58 females and 20 males). Inves-tigational instruments included a special questionnaire for assessment of the patients' condition as well as laboratory tests for Demodex folliculorum and Helicobacter pylori. Besides, all rosacea patients underwent gastroduodenoscopy with gastrobiopsy followed by histologic investigation of samples for Helicobacter pylori.
Results: The most common clinical form among the studied patients' group was inflammatory rosacea (56 cases or 72%). Other registered clinical forms of the disease were erythematotelean-giectatic rosacea (34 cases or 43%), papulopustular rosacea (38 cases or 49%), nodularcystic ro-sacea (6 cases or 8%). The predominance of female patients made up 2,9 : 1. The most characte-ristic age of rosacea patients was 31-50 years. In 60% of cases the disease lasted more than 5 years. The most common triggering factors of rosacea embraced: sun radiation - 44%, spicy food - 40%, stress - 32%, hot drinks - 31%. The affected sites in patients with rosacea were most commonly located on: cheeks - 85%, chin - 72%, forehead - 58%, nose - 50%, nasolabial fold - 45%. Demodex folliculorum was found in 46 cases (59%). Helicobacter pylori infection was detected in 69 cases of rosacea patients (88%). These patients received anti-helicobacter therapy (omeprasol + clarithromycin + amoxicillin). Positive clinical and laboratory results were observed in 63 patients (91%).
Conclusions: The most common triggering factor for rosacea patients is UV-radiation. Female patients prevailed. Demodex folliculorum and Helicobacter pylori infections were revealed in 59% and 88% of cases respectively. Anti-helicobacter treatment conducted in patients with rosa-cea demonstrates good therapeutic results manifested by clinical remission and considerable im-provement in most of the cases.

Analysis of sentinel lymph node biopsy results in malignant melanoma (2002-2006)

ESC-ID: 561
Authors: Kurgyis Zs, Varga E, Korom I, Kemeny L, Olah J
Country: Hungary
University: University of Szeged , Department: Dermatology and Allergology

Aim: The increasing prevalence of malignant melanoma (MM) all around the world explains why the overview of the results of sentinel lymph node biopsies (SLNB) is important. SLNB is an important step in the diagnostic procedure of MM as it is a considerable prognostic factor and determines the further interventions. However in case of thin, regressive tumours there is a controversy in the literature concerning its necessity.
Methods and materials: To examine the features of MM we analysed the clinical (sex, age and tumour localisation) and histological (tumour type, stage, presence of regression and the results of SLNB and regional block dissection) data of 863 patients admitted to our clinic with MM during 2002-2006. We also examined the influence of the size of the metastases in SLNBs on the patients' prognosis.
Results: According to our results, MM mostly occurs at the age of 50-70, on the back (28%) and its most common type is superficial spreading MM (47%). Among 19% of the patients the tumour showed regression. SLNB was performed in 481 patients out of whom 36% were found to be positive. In 21% of sentinel positive cases the following block dissection was also positive. SLNB was most probably positive in case of nodular MM (39%). In regressive primary tumours 28% of SLNBs were proved to be positive. Moreover 10% of SLNB were positive in case of thin, regressive tumours as well.
Conclusion: These results draw attention to the importance of SLNB not only in the management of thick malignant melanomas but, according to our findings, also in thin regressive tumours.

The early diagnosis of skin malignant melanoma

ESC-ID: 639
Authors: Dimitrijevic S, Bojana P, Tijana J
Country: Serbia
University: University of Nis , Department: Medical faculty

Introduction: The incidence of skin malignant melanoma has steady increased in recent years, which is reason that the early detection of malignant melanoma is one of the greatest challenges for physicians, especially(particulary) for dermatologists. The "ABCD" rule has proven to be useful in the diagnosis of malignant melanoma with "naked" eye. The clinical doubtful skin lesion should be analysed by dermoscopy. The histopatological analysis is the most important in diagnosis of malignant melanoma. In dermatology it is, also, known as the "gold standard".
Aim: The aim of this study was to evaluate sensitivity of clinical and sensitivity of dermoscopic diagnosis.
Patients and methods: Ten individuals, 7 females and 3 males, median age 46.1 (range 17-75) were enrolled in the study and 12 pigmented lesions were evaluated. Every pigmented lesions was evaluated using clinical, dermoscopic and histopatological methods. Clinical, dermoscopic and histopatological diagnosis were compared for each lesion, and than we made a correlation of diagnostic sensitivity. Diagnosis established by dermoscopic examination have agreement with histopatological examination in 91.66%.
Results: Most of the doubtful pigmented lesion were localized on back 41.67%, and least on the upper extremity 8.33%. Clinical examine with anamnestic data shows that ten pigmented skin lesions are malignant. Histopatological findings demostrate ten malignant lesions. Dermoscopic analyzes show 16.67% non- melanocitic lesions, and the others were melanocitic pigmented lesions.
Conclusion: The early dignosis of malignant melanoma is provided by the clinical examination as the dermoscopic examination.

Ultrasonographic assessment of the skin ageing process

ESC-ID: 656
Authors: Crisan D, Crisan M
Country: Romania
University: University of Medicine and Pharmacy Iuliu Hatieganu, Department: medical student

High frequency ultrasound in dermatology represents a new, noninvasive method, that allows an in vivo assessment of specific histological parameters. It evaluates the physio-chemical properties of the integument, epidermis, dermis and subcutis, that induce acoustical variations, expressed through certain changes of tissue echogenicity and offers new characteristic markers, which may quantify the severity of the cutaneous senescence process. The study aimes to investigate the changes of skin echogenicity and thickness that appear during the senescence proccess and was performed on 60 Caucasian patients, aged 6-80 years old. The patients were divided into four age categories: 6-20, 21-40, 41-60, >60. For each subject, cutaneous ultrasound images were taken from 3 different sites: dorsal hand (DH), medial arm (MA) and zygomatic area (ZA). We evaluated the thickness of the integument, the subepidermal low echogenicity band (SLEB) , the ratio between the echogenicity of the upper and lower dermis and also the differences between sun exposed and less exposed skin areas. The analysis of the obtained data showed statisticallly significant changes of the dermal thickness with age, as well as important changes of echogenicity. A critical interval of age (21-40) was identified as a period of maximum vulnerability for the integumentary system since most of the echogenicity changes can be identified in this interval. This study is part of a research grant SERENO number 2624

Clinical characteristics and flow of treatment in the group of patients with infections of the skin and soft tissue (erysipelas and cellulitis)

ESC-ID: 772
Authors: Nikolic Z, Perisic M, Colic
Country: Serbia
University: University of Belgrade , Department: Faculty of Medicine

Introduction: Erysipelas and cellulitis are bacterial infections of the skin and soft tissue which are character-

ized by pain, erythema, swelling and redness, the presence of infectious syndrome.
Aim: Showing sex and aged distribution of affected patients, factors of disposition, clinical symptoms and signs and laboratory findings, the flow of treatment, applied therapy and their influence on treatment outcome.
Material and methods: The total of 15 patients with infections, from department for clinical pharmacotherapy, Institute for Infective and Tropical diseases Clinical Centre of Serbia, in the period 2004-2009, was completely clinically examined.
Results: Most patients were between 50 - 75 years (67%). The most common factor of disposition was injury of lower limb. The majority of patients occurred because of fever, shivers, weakness, and changes on the skin followed by redness, swelling and pain. Laboratory parameters are nonspecific. The most frequent localization of infection was on the leg. Drugs of choice in most cases are clindamycin and ciprofloxacin with local application of 3% boric acid. From the beginning the therapy was applied as combined. The average therapy duration in these patients was 19 days. All patients were discharged from the hospital with cured local findings.
Conclusion: Erysipelas and cellulitis are infections which require detailed studying of factors of disposition, clinical symptoms and signs, especially changes on the skin. Following the evolution of skin changes after initiation of therapy, the based therapy should be modified or not.their progress is prolonged. These infections are successfully treated, but because of the slow regression of change, caused by factors present disposition, their progress is prolonged.

Epithelial-mesenchymal interaction in vitro.

ESC-ID: 1065
Authors: Szabo P
Country: Czech
University: Charles University in Prague- First Faculty of Medicine , Department: Anatomy

Epithelial-mesenchymal interaction is important in the morphogenesis , development and wound healing. It is dependent on the range of cytokines, chemokines, growth, proliferating and transforming factors produced by both the counterpartners. Tumor stroma contains, except the mesenchyme, also blood vessels, which are important in nutrition of tumor cells and the inflammatory cells. We observed in our previous research that tumor stromal fibroblasts are able to influence the biology of tumor predominantly the differetiation status of tumor cells and their migratory potential. This study demonstrates that also the tumor epithelium is able to influence the biological properties of normal fibroblasts to be similar to stromal fibroblasts occurring in cancer. The combination of genomic approach such as characterization of cell transcriptoma and immunohistochemistry was used to characterize the normal fibroblasts cultured under the influence of cancer epithelium. The results demonstrated that differences in production of extracellular matrix as well as of chemokines were observed in comparison with normal fibroblasts.
In conclusion, the epithelial-mesenchymal interaction in tumors seems to be important in biology of tumors and needs furtehr investigatigation to better understanding the cancer cell behavior.

Validity assessment of clinical diagnosis by „store and forward“ method of teledermatology

ESC-ID: 1092
Authors: Andjelkovic M, Apostolovic B
Country: Serbia
University: Nis , Department: Clinic of Dermatology

Introduction: Teledermatology is defined as the practical dermatology using an adequate means of electronic communication and information technologies. The most common and most economical method in teledermatology is "Store and Forward" (SF) method. SF method commonly used digital photography and anamnesis, which are delivered over the Internet and intended for consultation with a dermatologist who is the spatially distance. Currently a lot of countries and organizations in the European Union are working on establishing standards for the use of teledermatology. Many studies were designed to allow patients who gravitate to a particular area a permanent relationship with the doctors in order to reduce physician office visits.
Aim: Determine the degree of diagnostic accuracy and diagnostic consent of diagnoses which were determined in a review of real-time and diagnosis that ware placed by teledermatology method in four consultation centers. Establishing technological standards for the performance of teledermatology in our environment as well as technology standards of digital records and medical records.
Materials and methods: To assess the clinical diagnosis of 99 digital images presented 33 dermatological diseases of infectious etiology. Projection of each disease was made on 3 images: photo of the entire body, characteristic change on the body and the change in the macro photographic mode. Diagnosis were established directly in clinical examination. Digital photos with history basic data (age, sex, brief history of the disease) were sent electronically to four consultants. The degree of diagnostic accuracy between the examiner who set the primary diagnosis and the examiners who set teledermatology diagnosis were determined according to the scale: 1st true - if the diagnosis of consultants appointed in the same manner as the primary or set and accepted as a differential diagnosis, 2nd false - if the consultants diagnoses ware completely different of the primary diagnoses or if the diagnoses were not specified. The degree of agreement achieved by diagnostic teledermatology method was determined by Cohen kappa (k) coefficient. Statistical data processing and analysis of the results was performed using the DAG software.
Results: Four consulting centers were set total of 110 accurate diagnosis. Teledermatology diagnostic efficacy in comparison to the primary clinical diagnosis in our study were determined separately for each teledermatologist and all teledermatologists together. Looking at individual results of diagnostic agreement, teledermatologists TD1, TD3 and TD4 have achieved almost complete diagnostic agreement in relation to the primary diagnosis. For teledermatologist TD3 coefficient cappa k = 0.81 is the bottom threshold, that is statistically significant also.
Conclusion: The diagnostic value obtained the consent of all teledermatologists separately in relation to the primary clinical diagnosis with statistical significance and may be accepted as a measure of the validity of used method. Diagnostic assessment by SF method is equal to diagnostic assessment of clinical diagnosis in a real time. Teledermatology method can be set up clinical diagnosis.

SF method can be performed by dermatologists who know the basics: information technology, Internet data, digital projection, digital photography.

Platelet-rich Plasma therapy used in/for dermal abrasions: case report

ESC-ID: 1106
Authors: Stevanovic A, Sarenac M, Markovic N
Country: Serbia
University: University of Nis, Department of dentistry

Introduction: A recent innovation in regenerative therapy is platelet-rich plasma (PRP), an autologous product derived from whole blood through the process of gradient density centrifugation. PRP therapy is new way of treating wounds, improving bone healing, and healing skin abrasions. In this study, case of dermal abrasion after PRP therapy as well as PRP effects on tissue repairment are presented and discussed.
Materials and Methods: A 23 year old male referred himself to department of Maxillofacial surgery on 18(th) February 2010. Patient medical history showed no significant previous hospitalization or surgical interventions. He was presented with dermal abrasion on left side of his neck, caused by tattoo. Clinical examinations were performed. His blood was drawn and after making PRP gel on Transfusiology Institute in Nis, he was treated with this autologous product in one third of his tattoo.
Results: After treatment with PRP gel, treated area showed significant improvement in skin regeneration and epidermal creation. Results showed that platelet-rich plasma was able to induce a significant regeneration of dermal abrasion on skin without using any additional methods, such as HBO chamber.
Conclusion: PRP is a new method used in many areas of medicine and dentistry, being applied not only for bone repairment and augmentation, but also on wounds and abrasions that can not be treated in any other common way. It is storage of many growth factors, especially PGDF and TGF-beta, which mechanisms are still not quite understood but provide us foundation for further examination and application in various procedures.

Effects of isotretinoin treatment in patients with nodulocystic acne.

ESC-ID: 1141
Authors: Lalosevic J, Latinovic J, Skiljevic D
Country: Serbia
University: University of Belgrade, Department of Dermatovenerology

Introduction: A stereoisomer of tretinoin, 13-cis-retinoic acid, isotretinoin is only oral retinoid used as the most effective therapy for severe nodulocystic acne. Typically 0.2-0.5 mg/kg/day for 16-20 weeks is recommended. Total cumulative dose of 120-150 mg/kg have been shown to reduce the risk of relapse.
The Aim: To determine the average initial dose, average cumulative dose at the remission, defining the side effects and their frequency and determining average cumulative dose until first side effects.
Material and Methods: The population in our observational, retrospective/prospective study comprises a total of 88 patients treated with isotretinoin at our clinic in a period from 2004 to 2010. All patients had a nodulocystic form of acne vulgaris, proved resistant to previous treatment including oral antibiotics. The side effects of the isotretinoin therapy are defined as clinical and laboratory. Based upon the patients' medical history and charts, we analyzed parameters as follow: duration of treatment until remission, cumulative dose at the remission, duration of therapy until side effects, cumulative dose until side effects, frequency of side effects, duration of therapy and cumulative dose of isotretinoin within the group of patients who finished the treatment. The patients that haven't finished their therapy yet will be subsequently included by the end of their treatment. Statistical methods used are frequency table, median value and variation interval.
Results: The average initial dose was 0.47 mg/kg daily, taking daily in a single dose. Remission appeared at the average dose of 25.97 mg/kg after a median of 59 days. The average dose until first side effects was 27.13 mg/kg after 49 days. Therapy within patients who finished the treatment lasted for median of 161 days and the average cumulative dose was 97.38 mg/kg. The most frequent side effects were cheilitis, dryness of the palms, generalized xerosis, elevated levels of liver function tests and increased levels of triglycerides, cholesterol and bilirubin.
Conclusion: Our study shows that the average starting dose, and the duration of the treatment of the nodulocystic acne with isotretinoin are according to the literature, but cumulative dose (97.38 mg/kg) when treatment was finished is slightly lower than the one present in the literature. The average dose of isotretinoin until the first side effects (27.13 mg/kg) and the first remission (25.97 mg/kg) appeared were results that we didn't come across in the available literature.

Effects of oral metronidazole in treatment of lichen planus

ESC-ID: 1371
Authors: Khazanehdari S , Behzadi AH , Barbati ME
Country: Iran
University: Shahid Beheshti University of Medical Sciences , Department: Medicine

Aim: Response to different antimicrobial agents supports the infection hypothesis of the Lichen planus(LP). Some small studies demonstrated improvement of LP with oral metronidazole treatment in patients with concomitant intestinal infections, more over there was some studies, reported that metronidazole might be effective in some patients with idiopathic LP. We performed an open trial to evaluate the effectiveness of metronidazole, as a single treatment, on different forms of LP.
Method: A total of 49 patients, 24 male and 25 female selected from the outpatient Dermatology clinic, Rasul Akram hospital, Iran University of medical science, met the criteria for analysis of treatment interventions. Metronidazole were administered 250 mg/hr daily without any concomitant therapy. Patients were examined at baseline and at days 21, 42, 63, 84 of treatment and the follow up period were 3months. From 80% to 100% clearing of LP papules and plaques, cessation of new lesion formation, and alleviation of pruritus were considered as complete response (CR). A reduction of 50% to 80% in LP lesions with relieved pruritus and localized recurrence of a

few papules was considered as partial response (PR), and a reduction of 50% in lesions, and new lesion formation continued with pruritus, was interpreted as no response (NR).
Result: A total of 20(40.82%) skin lesions had complete response (CR) to treatment by Metronidazole, 16 (32.65%) had relative healing (PR) and 13 (26.53%) did not improved (NR). the overall treatment response (CR +PR) of Lichen Planus skin lesions was 73.47% in this study. In mucosal involvement the overall treatment response was 66.6%, and finally the itching overall treatment response was obtained in75% of the cases.
Conclusion: Based on our findings, Metronidazole can be an alternative therapy in treatment of Lichen Planus, and as a safe agent can be kept in mind.

Actinic keratosis as a precancerous condition of skin

ESC-ID: 1459
Authors: Trofymets D
Country: Ukraine
University: Donetsk National Medical University , Department: Pathomorphology departament

The aim: To establish the main morphological parameters of actinic keratosis for the differential diagnosis with squamous cell carcinoma of the skin.
Materials and methods: There were examined 9 cases of actinic keratosis. Paraffin-embedded sections of the skin samples were stained with standard histological and histochemical methods.
Results: Microscopic examination revealed a significant epidermal hyperkeratosis. Parakeratosis is expressed less and in some cases is completely absent. Epidermis has papilomatic and acanthotic vegetations despite the fact that there are a lot of focuses of atrophy next to them. These changes lead to the huge diversity of histological manifestations. Dysplasia of keratinocytes also have different levels of severity and prevalence. There were observed some changes occupying the whole epidermal layer and simulating the Bowen's disease (squamous cell carcinoma in situ) in some cases of bowenoid histological type of actinic keratosis. A basophilic degeneration is observed in dermis. There's very dense inflammatory infiltrate which basically consists of lymphoid elements and a lot of plasma cells in its upper part. At the early stages the parakeratosis areas are located above slightly acanthotic epidermis where it's defined by atypical cells of basal and adjacent layers in the form of dyskeratosis and enlarged nuclei. Penetration into the stroma is not expressed. It's observed the focal lymphoid infiltration and elastosis. More expresseded para- and hyperkeratosis with the formation of structures of cutaneous horns was observed in one case. In the observations like this, the cellular atypia extends to the entire thickness of the epidermis.
Conclusions: In some cases it's very hard to separate the actinic keratosis with the expressed epidermal dysplasia and squamous cell carcinoma. Also the great difficulties could be in the differentiation of squamous cell cancer and actinic keratosis with hypertrophic type of histological structure. Antigens to the blood groups can be used as a marker of malignancy. There are painted and unpainted areas in processing the sections in actinic keratosis cases. Presence of non-painted areas indicates aplasia. Non-painted areas also can be observed it areas of atypical proliferation of deep dermis and in the early invasion areas.

Session: Endocrinology / Gastroenterology

Identification and functional analysis of target genes of the metastasis-inducing gene MACC1

ESC-ID: 492
Authors: Schmid F, Smith J, Wang Q , Andrade M, Huska M, Schlag PM, Stein U
Country: Germany
University: Humboldt-University of Berlin , Department: Biology

Colon carcinomas are one of the most frequently occurring cancer diseases in the Western world. 90% of the cancer deaths arise from tumor cells that spread to distant organs. Therefore, molecular markers for the identification of patients with a high risk of metastasis formation are crucial for an effective treatment of the patients. Recently, Stein et al. identified a new gene MACC1 (Metastasis-Associated in Colon Cancer 1). The MACC1 expression in human colon tumors is an independent prognostic indicator of metastasis formation. A high MACC1-mRNA expression in stage I, II and III tumors of colon carcinoma patients correlates with the development of metachronous metastases. MACC1 overexpression leads to increased proliferation, migration and HGF (Hepatocyte Growth Factor)-induced scattering of cells as well as to strong tumor growth and formation of metastases in mice xenografts. MACC1 regulates the expression of the HGF receptor, Met (met proto-oncogene). It thus plays a key role in the HGF/Met-signaling which is often deregulated in cancer leading to metastasis. This project aims at the identification and characterization of new MACC1 downstream targets, which could potentially be used as molecular markers (e.g. in combination with MACC1) for an early detection of metastatic cancer as well as for the inhibition of MACC1-induced colon cancer metastasis. For that purpose we analyzed by microarray technology the genome-wide expression of a colon carcinoma cell line (SW480) which does not express MACC1 and its MACC1-stably transfected counterpart (SW480/MACC1). The expression of selected genes was verified by quantitative real-time RT-PCR in both SW480 and SW480/MACC1. Additionally, we determined the mRNA-expression of these selected genes in a colon carcinoma cell line with a high endogenous MACC1-expression (SW620) and in MACC1-shRNA stably transfected cell clone thereof (SW620/MACC1 shRNA). Furthermore, we identified the metastatic potential of chosen upregulated target genes with functional assays. For these motility studies the MACC1 target genes were downregulated with siRNA against the respective gene and we evaluated their migratory and proliferative abilities. Moreover, we analyzed by pathway screen assays the signal transduction pathways in which the target genes are involved. In future experiments we will study the metastatic potential of the genes using a mouse xenograft model and determine the

expression of the target genes in colorectal tumors and correlate the expression status to clinical data.

Immunohistochemical demonstration of peptide hormones in endometrial adenocarcinomas

ESC-ID: 515
Authors: Jancic N, Rancic I, Bojanic N
Country: Serbia
University: University of Nis , Department: Department of Pathophysiology

Aim: Sixty endometrial adenocarcinomas were examined immunohistochemically for the presence of amine-containing or neurohormonal peptide-containing cells particularly in relation to histological tumor grade.
Methods and Materials: Operative material archived in paraffin blocks was used for research. Neuroendocrine cells were examined in well (n = 20), moderately (n = 20), and poorly differentiated adenocarcinomas (n = 20). On 5 Ím sections, classical HE method for determining the histological grade and immunohistochemical ABC method with chromogranin A, bombesin, insulin, gastrin, somatostatin (1:1600, DAKO), glucagon and serotonin antibodies were applied.
Results: Chromogranin A-containing cells were detected in 39 of the 60 adenocarcinomas. Sometimes these cells formed solid structures, other times large, cylindrical, solitary cells were found, and in some cases the cells were small, round, multifocal. Chromogranin A was also detected in mast cells of the tumour stroma. Besides chromogranin A-containing neuroendocrine cells, cells with brown, almost black deposits of insulin were found. Well differentiated tumors contained small, round, isolated or multifocal insulin-immunoreactive cells (2 cases). In poorly differentiated carcinomas these cells were numerous and formed solid structures (in 5 cases). Strong perinuclear deposits of bombesin were always present in anaplastic epithelial cells (in 11 cases). Marked perimembranous gastrin deposits were found focally, in isolated cells, usually in poorly differentiated tumours (in 8 cases). Serotonin-secreting cells with annular deposits were present mostly in poorly differentiated carcinomas (in 10 cases). Scattered, polymorphic, somatostanin-containing cells were present in well and moderately differentiated tumours (in 3 cases). Glucagon activity was detected only in macrophages and mast cells of the tumour stroma.
Conclusions: Functional polymorphism of neuroendocrine cells is present in endometrial adenocarcinomas. The density of neurohormonal peptide-containing cells correlates to histological tumor grade, i. e. hyperplasia of neurohormonal peptide-containing and serotonin-containing cells is prominent in poorly differentiated and undifferentiated adenocarcinomas.

Interferon-gamma with interferon-alpha and ribavirin for hepatitis C non-responders

ESC-ID: 546
Authors: Raza S, Abbas Z, Jafri W, Hameed S
Country: Pakistan
University: Dow University of Health Sciences , Department: Dow Medical College

Aim: When administered simultaneously, interferon-alpha 2b + interferon-gamma result in dramatic antiviral synergy. The aim of this study was to evaluate the efficacy and safety of triple combination regimens comprising of interferon alfa-2b and ribavirin plus either interferon gamma or amantadine in HCV genotype 3 infected patients who have not previously responded to interferon alpha (standard or pegylated) in combination of ribavirin.
Methods and Materials: Patients were randomized to receive interferon alpha 2b 3MU t.i.w, ribavirin 800-1200 mg per day with either interferon gamma 2 MU t.i.w or amantadine 100 mg twice daily. Treatment was continued for 48 weeks in patients showing complete or partial (2 log reduction) early virological response (EVR) at 12 weeks and negative PCR at 24 weeks.
Results: Total enrollments were 44. Mean age 44.1 years (28-60); 25 were previously non-responders out of them 12 were in the gamma arm. Nineteen were relapsers, out of them 10 received Gamma interferon. F3 or F4 fibrosis was seen in 14 (34%) and 9 (23%) were diabetic. By intention-to-treat analysis, the EVR for interferon gamma arm was 50% (11 out of 22) and for amantadine arm 36.36% (8 out of 22) (p = 0.272). The end of treatment responses were 45% (10/22) & 27% (6/22) for interferon gamma and amantadine arms respectively (p = 0.174). Overall sustained virological response (SVR) with triple regimens was seen in 34% (15/44), SVR was 45% (10/22) in the gamma arm and 23% (5/22) in the amantadine arm. In the subgroup analysis, this figure was 60% (6/10) and 44% (4/9) for relapsers, and 33% (4/12) and 8% (1/13) for non-responders in both arms respectively. Treatment was well tolerated in both arms.
Conclusions: About one third of genotype 3 patients who had not previously responded well to the interferon and ribavirin responded to the triple regimens. However addition of interferon gamma was a better option with an acceptable safety profile. Its combination with pegylated interferon and ribavirin needs further evaluation in a larger clinical trial.

Usefulness of salivary cortisol measurements in the diagnostics of adrenal insufficiency

ESC-ID: 617
Authors: Kriks A, Kaczmarska D
Country: Poland
University: Medical University of Warsaw , Department: First Faculty of Medicine

Aim: Adrenal insufficiency is currently diagnosed on the basis of plasma cortisol and ACTH concentrations, which are measured in diurnal rhythms and in dynamic tests, such as the synacthen test. Plasma measurements are a good diagnostic method for this condition. However, they usually require hospitalization and numerous blood taking. Since the concentrations of cortisol both in plasma and

saliva are in balance and, moreover, salivary cortisol measurements already have a base position in the diagnostics of Cushing's syndrome, we aimed our study at the assessment on whether salivary cortisol measurements during synacthen test may be used to diagnose adrenal insufficiency.
Methods and materials: 23 patients with confirmed adrenal insufficiency were divided into two groups: 1) patients with primary adrenal insufficiency (n=10, age = 47.18 ± 19.60 yr), 2) patients with secondary adrenal insufficiency (n=13, 44.23 ± 17.24). The control group was formed from healthy individuals and patients in whom the suspicion of adrenal insufficiency was ruled out (n=21, 42.64 ± 18.02). Plasma and saliva samples from all of the subjects were collected at the 0', 30' and 60' minute of the synacthen test and then measured and compared.
Results: In accordance with our expectations, there was a statistically significant ($p<0.0001$) increase in the mean salivary cortisol concentration in the control group, which was the highest at the 60' minute of the test. In the 1st and 2nd group the cortisol increase wasn't that significant. Mean salivary cortisol concentrations [ug/dl]: 1st group: 0' - 0.203, 30' - 0.416, 60' - 0.452; 2nd group: 0' - 0.706, 30' - 0.738, 60' - 0.406; Control group: 0' - 0.609, 30' - 1.391, 60' - 2.311. The most significant correlations between salivary and plasma cortisol concentrations at all time spots were obtained in the group of patients with primary adrenal insufficiency (0': $r=0.87$, $p=0.001$; 30': $r=0.717$, $p=0.019$; 60': $r=0.767$, $p=0.009$) and they were higher than in the control group (0': $r=0.45$, $p=0.04$; 30': $r=0.43$, $p=0.047$; 60': $r=0.49$, $p=0.023$). It is worth noticing that the correlations at the 60' minute of the test are the most significant for the 1 and 2 group combined together ($r=0.59$, $p=0.002$) and are higher than in the control group ($r=0.49$, $p=0.023$).
Conclusion: The significant correlations between plasma and salivary cortisol concentrations at all time spots indicate that salivary cortisol measurements may be a valuable method for the diagnostics of adrenal insufficiency. This method seems to be a reliable, simple and convenient diagnostic tool. Perhaps it will not replace but only simplify the outpatient diagnostics of adrenal insufficiency or it will be used as a screening test. Still, it is necessary to conduct further research in order to estimate appropriate norms for salivary cortisol concentrations in the synacthen test.

Thyroid antibodies in patients with diabetes mellitus type 1

ESC-ID: 875
Authors: Stojanovic M, Najdanovic J
Country: Serbia
University: University of Nis, Department: Endocrinology

Diabetes mellitus type 1 (DM 1) is often associated with other autoimmune diseases, with autoimmune thyroid disease as the most common one. It can be manifested as subclinical thyroid gland dysfunction, hypothyroidism,or as euthyiroid state with positive antithyroid antibodies and rarely as Hyperthyroidism (Graves-Basedow). The aim of the study was to determine the level of thyroid antibodies and the frequency of autoimmune thyroid disease in patients with diabetes mellitus type 1. The study has included 38 DM 1 patients, 20 women and 18 men with an average duration of DM 12 ± 4.7 years. Clinical assessments included level of Thyroid stimulating hormone receptor antibodies (TRAb), antibodies to thyroid peroxidase (TPOab), thyroglobulin antibodies (TGab) and hormons (T3, T4, TSH) were calculated . As the findings were considered positive values TRab greater than 1.5 U, TPOab greater than 12 U and TGab greater than 34 U. Positive TPOab are found in 9 patients (23.7%), TGab in 7 (18.4%) and by 4 patients (10.5%) positivity was defined by both antibodies. Positive TRab were not established even in one patient. Total of 20 respondents (52.6) had positive antibody titers. Notable is the frequent thyroid antibody presence in females. Also 12 pts (31,5%) had increased level of TSH, 5 pts (13.2%) had hipotiroidsm and only one(2.7%) had hipertiroidsm. Four pts (10.5%) had suffer subclinical hipotiroidsm. The results indicate a high frequency of occurrence of thyroid antibodies and autoimmune diseases in patients with DM 1. Therefore, it is recommended screening thyroid antibodies because regular screening for thyroid abnormalities in all diabetic patients will allow early diagnose of thyroid dysfunction, especially in patients with subclinical dysfunction

Diabetic gastropathy: morphologic and functional changes of the stomach, peculiarities of treatment

ESC-ID: 956
Authors: Nechipay Z, Khukhlina O
Country: Ukraine
University: Bukovinian State Medical University , Department: Internal Medicine and Clinical Pharmacology

Introduction: The investigation include a complex study of main risk factors of diabetic gastropathy (DGP) development: metabolic (hyperlipidemia, hyperglycemia, insulin resistance, intensification of oxidative, nitrositive stress), endothelium dysfunction (disorders of nitric oxide secretion, activity of NO-synthases), endoscopic features, gastric motor activity. Research purpose. The research purpose is to study endoscopic features and motor function disorders of the stomach in patients with diabetic gastropathy, to prove the influence of lipoflavon (550mg of lecitin and 15mg kvercetin) and korargin (L-arginine).
Material and methods: 120 patients with DGP, developed on background of type 1 (45 persons) and 2 (55 persons) diabetes mellitus (DM) in the dynamics of the treatment by lipoflavon and korargin were examined. A control group was made by 20 patients with DM type 1 and 2 without symptoms of DGP and 30 practically healthy persons. The investigation include a complex study of the endoscopic, histological features of DGP, gastric motor activity, main risk factors of DGP development metabolic (hyperglycemia, hyperlipidemia, insulin resistance, intensification of oxidative, nitrositive stress), microvascular and rheological disorders, endothelium dysfunction (disorders of nitric oxide (NO) secretion). The patients of the first group (control) (20 persons) got hypoglycemic medicine: metformin or insulin depending on type of DM and vitamins B. Patients of second group (basic) (100 persons) got metformin or insulin depending on type of diabetes, lipoflavon 20ml intravenously one time per day during 10 days and korargin (L-arginine) 600mg 3 times on day during 1 month.

Research results: 66% patients of basic group DM type 1 had superficial gastritis including 33% with erosive gastritis. 59% of patients of basic group DM type 2 had atrophic gastritis. 88% of patients of basic group against 21% in control had the features of endothelium dysfunction: depression of stable metabolites of NO in the serum, elevation of endothelin-1, activation of inducible NO-synthase. 65% of the patients of basic group DM type 2 had delayed gastric emptying, 87% of basic group DM type 1 had accelerated motor function of the stomach. Application of lipoflavon and korargin for the patients of the basic group decreased of stomach disorders on 87%, normalized the activity of inducible NO-synthase (iNOS) and secretion of nitric oxide.
Conclusions: As a result of application of lipoflavon and korargin for the patients of the basic group the removal of stomach disorders, strengthening of gastric emptying, decreasing of diabetic microangiopathy, decreasing of the oxidative, nitrositive stress intensity, normalizing the activity of inducible NO-synthase and secretion of NO was attained.

HPA axis alterations on ADN and its receptors expression in adrenal gland and SAT

ESC-ID: 1046
Authors: Zemleduch T, Paschke L
Country: Poland
University: Poznan University of Medical Sciences , Department: Department of Histology and Embryology

Aim: The purpose of this work was to investigate whether hypothalamo-pituitary-adrenal (HPA) axis hormones regulate in vivo the expression of adiponectin (ADN) and adiponectin receptors (AdipoR1, AdipoR2) in the rat adrenal gland (newly discovered system) and white adipose tissue (main site of ADN production). Moreover, we examined ACTH influence on adrenocortical cells ADN system genes expression in vitro and compared it to the known data regarding such influence on adipocytes cell line.
Methods and materials: For HPA axis status alteration study 5 groups of adult, male Wistar rats were employed, namely: „ACTH" or „DX" - rats administered with ACTH or dexamethasone, respectively (s.c., 5 μg / rat) at hours 0, 12, 24 and decapitated 12 hours after the last injection, „ACTH(1h)" - rats administered with a bolus injection of ACTH (s.c., 5 μg / rat) 1 hour before decapitation, „C" - control group rats injected with physiological saline solution, „ETHER" - rats submitted to standardized acute ether stress 1 hour before decapitation. Each group consisted of at least six animals. After decapitation adrenals as well as subcutaneous and visceral adipose tissue (SAT and VAT) were harvested. Total RNA isolation was carried according to the standard technique and mRNA expression was assessed using QPCR method followed by melting curve analyses and electrophoresis of random samples. Primary adrenocortical cell culture (PACC) was employed to test ACTH influence on mRNA expression of ADN and its receptors.
Results: The effects of HPA axis alterations on ADN and its receptors expression in adrenal gland and SAT were significant, while almost none were observed for VAT. As expected, the effects of acute stress on studied genes expression resembled those of acute ACTH treatment. Both acute and prolonged HPA axis stimulation (ACTH treatment) decreased adrenal ADN mRNA levels, while AdipoR1 and AdipoR2 genes were significantly upregulated, but only by acute ACTH treatment. Prolonged DX administration did not alter adrenal ADN and AdipoR1 mRNAs levels while AdipoR2 gene expression was decreased. In the SAT, activation of HPA axis (ACTH treatment and ether stress) increased expression of ADN and AdipoR2 genes, whereas DX treatment had a prominent suppressive effect on ADN and AdipoR1 mRNA levels. In cultured adrenocortical cells 24 h exposure to ACTH lowered mRNA levels of all three genes studied, with the decrease in ADN mRNA levels being the most prominent.
Conclusions: Adrenal ADN expression is down-regulated by ACTH. Adipose tissue expression of ADN and its receptors is dependent on HPA axis functioning, most notably in subcutaneous adipose tissue. ACTH up-regulates ADN expression in subcutaneous adipose tissue in likely glucocorticoid-independent mechanism. Stress conditions enhance ADN expression in SAT.

Cardio-vascular alterations in patients with liver cirrhosis

ESC-ID: 1170
Authors: Prysyazhnyuk V, Prysyazhnyuk I, Gyluk R
Country: Ukraine
University: Bukovinian State Medical University , Department: Propedeutics of Internal Diseases

Introduction: For patients with liver cirrhosis, at the same time with progress of basic disease changes grow from the side of the cardio-vascular system. Violations of systemic homodynamic occur more than with 90% patients with liver cirrhosis. Some authors pay regard to anomalous adjusting of circulation of blood for patients with liver cirrhosis to complicated portal hypertension. The aim of our study was to examine morphometric, functional and hemodynamic features of the cardio-vascular system with patients with non-viral liver cirrhosis.
Materials and methods: We provide echocardiography on 21 patients and daily monitoring of blood pressure and electrocardiogram on 11 patients with sub-compensated, active and non-viral liver cirrhosis. Age of patients ranged from 35 to 75 (in average 52,3 ± 8,2) years. Most of the examined patients were males (67 percent). Monitoring group consisted of 11 healthy individuals representative for age and gender.
Results: The left atrium of heart significantly increased ($p < 0,05$) with patients experiencing liver cirrhosis, the dimensions of which were 12 percents higher compared to healthy people. With the examined patients, thickness of the back wall of the left ventricle in diastole was 16 percents larger compared with benchmarks ($p < 0,01$). The thickness of intraventricular membrane in diastole in the group of patients with liver cirrhosis was 12 percents higher than control rates ($p < 0,01$). Reliable in patients with liver cirrhosis was lower ejection fraction, compared with healthy people it was less than 7 percents ($p < 0,01$). With the patients studied, the average daytime heart rate was 81,92 ± 4,53 per minute, at night 70,77 ± 4,52 per minute, the average circadian index was 1,17 ± 0,02. With 4 patients with liver cirrhosis tachycardia recorded in night. Almost half of the patients with liver cirrhosis observed blood pressure reduction of less than 10% at night ("non-dipper"). In 4 patients with liver cirrhosis

(1/3) night lowering blood pressure was within the norm ("dipper"). In 2 patients (1/5) observed increased nocturnal blood pressure parameters compared with daytime values ("night-piker"). Moreover, in 7 patients were seen increased fluctuations in systolic blood pressure both day and night time period likely due to violation of the regulation of blood pressure in patients with liver cirrhosis. With 4 patients (1/3) recorded episodes of myocardial ischemia and after analyzing patient complaints revealed that prevailed painless form of ischemia.
Conclusions: Our studies indicate changes of both morphometric and hemodynamic parameters of cardiac activity in patients with liver cirrhosis. As a result of echocardiographic study we found significantly increased left atrial size, thickness of the left ventricle back wall in diastole and interventricular membrane thickness in diastole with patients with liver cirrhosis, reduce stroke and minute blood volumes and ejection fraction in these patients. Daily monitoring of blood pressure and electrocardiogram showed that for patients with liver cirrhosis are characteristically violations of blood pressure diurnal rhythm with increasing share of non-dipper-group and inverse-dipper-group and the development of episodes of myocardial ischemia with emphasis on its silent form.

The axon guidance molecule Slit2 regulates the motility of neuroendocrine cancer cells

ESC-ID: 1183
Authors: Göhrig A, Schröder M, Welzel M, Detjen K, Hilfenhaus G, Wiedenmann B, Fischer C
Country: Germany
University: Charite Universitätsmedizin , Department: Hepatology and Gastroenterology, CVK

Background: Early blood-borne metastasis and a distinct vascularization are characteristics for neuroendocrine tumors of the gastroenteropancreatic system (GEP-NET). Both events imply a central role for the interaction of blood vessels and cancer cells for the tumor biology of GEP-NET. Recently, a new function of the axon guidance molecule Slit2 and its receptors Robo1 and Robo4 has been established as a guidance factor for tumor and endothelial cells. Here we evaluated the role of the Slit2/Robo system in GEP-NET metastasis and angiogenesis.
Methods: Expression of Slit2, Robo1 and Robo4 on human GEP-NET tissue and cancer cell lines was determined by immunohistochemistry, RT-PCR and immunoblotting. We further analyzed the effect of vector-based overexpression of Slit2 on migration and agar colony formation of human GEP-NET cells using transwell and HTCA assays. HUVECs were incubated with tumor cell conditioned media to characterize the effect of Slit2 on endothelial cell migration and lamellipodia formation.
Results: Tissues from human GEP-NET as well as the corresponding neuroendocrine tumor cell lines BON and QGP showed variable expression of Slit2. However, in line with a consistent histological detection of Robo1 in epithelial cells of GEP-NET specimens, Robo1 was found abundantly expressed in these cancer cell lines. In contrast, Robo4 was specifically expressed in endothelial cells of the tumor vasculature. Stable transfection of Slit2-deficient BON cells with a constitutive Slit2-pCMV vector substantially inhibited directed tumor cell migration and colony formation, while leaving cell proliferation unaffected. The effects of Slit2 were mediated in an auto-/paracrine manner, since Slit2 conditioned media also inhibited the migration of wild-type BON and QGP cells. Moreover, Slit2-mediated suppression of tumor cell motility involved restored E-cadherin expression and loss of vimentin expression in BON cells, indicating that Slit2 induced a mesenchymal-to-epithelial transition phenotype. Finally, tumor cell derived Slit2 repelled migrating primary endothelial cells by inhibiting VEGF-induced lamellipodia formation.
Conclusion: These data provide evidence for an intrinsic auto-/paracrine function of the Slit2/Robo system for the migration of GEP-NET cells as well as for their angio-regulatory interaction with endothelial cells in vitro. The differential expression of the Slit2 receptors Robo1 and Robo4 on tumor cells and the vascular compartment, respectively, thus imply a dual role of Slit2 in the process of both metastasis and angiogenesis of human GEP-NETs.

The level of TGF-β1 and TIMP-1 in patients with liver cirrhosis

ESC-ID: 1207
Authors: Shapoval O
Country: Ukraine
University: Ivano-Frankivsk National Medical University , Department: internal medicine

As chronic liver disease progresses, an imbalance occurs between synthesis and breakdown of extracellular matrix (ECM). Matrix metalloproteinases (MMPs) are involved in degrading ECM while tissue inhibitors of metalloproteinases (TIMPs) prevent their fibrolytic action. Circulating levels of tissue inhibitor of metalloproteinase (TIMP)-1 and matrix metalloproteinase (MMP)-2 are investigated as parameters for the diagnosis of fibrosis in chronic liver disease. Removal of excess collagen after cessation of liver injury is regulated by TIMP-1 and TGF-β1. Among growth factors, TGF-β1 appears to be a key mediator in human fibrogenesis. Aim. To assess the level of TGF-β1 and TIMP-1 in patients with liver cirrhosis (LC) and their dynamics under the influence of the proposed treatment.
Materials and methods: We examined 80 patients with nonvirus LC etiology. In the diagnosis of LC used classification of the International Working Group and the World Congress of Gastroenterology (Los Angeles, 1994). Diagnosis based on anamnesis, clinical and laboratory data, ultrasound evidence of liver damage, detection of serological markers of hepatitis B and C and alcoholic origin of the disease. In the patients the blood parameters of free-radical oxidation and antioxidant system (malonic aldehyde, diene conjugates, the activity of ceruloplasmin, transferrin saturation with iron) and middlemolekular peptides as manifestation of endogenous intoxication were determinated. For all patients 13C-metacetin breath test was perfomed to assess the functional capacity of hepatocytes. The ELISA assays were used to study circulating values of TIMP-1, TGF-β1 and bacterial endotoxin. The group included the monitoring of patients with LC in stage A and B of Child-Pugh. According to article examined all patients were distributed as follows: 9 women (11.3%) and 71 men (88.7%). Age of patients ranged from 34 to 64 years on average (47,7 ± 0,82) years. Disease

duration in patients ranged from 2 to 9 years. Patients were divided into 4 groups: I group of patients (20 people) received basic treatment in standard doses, II group of patients (20 people) - along with basic therapy received Antral 1 tablet 3 time a day and III group of patients (20 people) were received Laktuvit 15 ml 3 time a day with basic therapy, IV group of patients (20 persons) were recived basic therapy+Antral+Laktuvit in the above mentioned doses. A survey of patients conducted before and 1 month after beginning treatment.

Results: The level TIMP-1 in patients with LC was (523.5 ± 6.5) pg/ml and significantly different from healthy persons - (164.6 ± 8.50) pg/ml ($p<0.05$), TGF-β1 levels in patients with LC was (437.7 ± 5.9) pg/ml and in healthy persons (166.98 ± 6.73) pg/ml ($p<0.05$). After the treatment was noted that the least positive dynamics was marked in patients who received basic therapy: TIMP-1 level after treatment decreased in 1.3 times, and the level of TGF-β in 1.16 times. Instead, in II group of patients TIMP-1 decreased in 1.94 times, the level of TGF-β in 1.16 times; and in III group of patients: TIMP-1 in 1.67 times, TGF-β1 in 1.57 times. And, the best effect was found in IV group of patients who received treatment scheme using Antral and Laktuvit was marked reduction TIMP-1 in 2.33 times to (224.3 ±9.09) pg/ml after treatment against (523.3 ± 12.8) pg/ml before treatment ($p<0.05$) and reduced TGF-β1 in 2.35 times to (184.92 ± 5.39) pg/ml after treatment against the (436.27 ±7.01) pg/ml before treatment ($p<0.05$).

Conclusions: Thus, combined use of probiotic drug Laktuvit in the background hepatoprotector Antral most positive impact on the processes of fibrogenesis by nondirect affects of pathogenic mechanisms of disease development.

Expression of proinflammatory factors in subcutaneous adipose tissue and peripheral monocytes of patients with obesity and type 2 diabetes mellitus: the effect of very-low-calorie-diet

ESC-ID: 1232
Authors: Mraz M, Lacinova Z, Drapalova J, Haluzikova D, Matoulek M, Horinek A, Trachta P, Kavalkova P, Svacina S, Haluzik M
Country: Czech Republic
University: Charles University Prague , Department: 3rd Department of Medicine

Objective: Low-grade inflammation is the key factor linking obesity, type 2 diabetes mellitus and cardiovascular diseases. The objective of this study was to explore the expression profile of genes involved in proinflammatory and adipogenic pathways in adipose tissue and peripheral monocytes of obese type 2 diabetic patients (T2DM) at baseline and after dietary intervention.

Methods: 12 obese females with type 2 diabetes mellitus and 10 healthy normal-weight sex- and age-matched females (C) were included into the study. The expression analysis of 39 genes of interest in subcutaneous adipose tissue (SCAT) and isolated peripheral monocytes was performed by RT PCR at baseline and after 2 weeks of very low calorie diet (VLCD, energy intake 2500 kJ/day).

Results: Compared to C group, T2DM group had significantly increased serum concentrations of IL-6, IL-8, TNF-α; and C-reactive protein and mRNA expression of proinflammatory cytokines (TNF-α;, IL-6, IL-8, MIF), chemokines (CCL-2, -3, -7, -8, -17, -22, CXCL-10), chemokine receptors (CCR-1, -5) and proatherogenic factors (ICAM-1, VEGF) in both SCAT and peripheral monocytes. The expression of IL-6, leptin, adiponectin was significantly higher in SCAT, while the mRNA expression of chemokine receptors and TNF-α;, IL-8 and resistin was higher in monocytes relative to SCAT. The overall expression of proinflammatory factors correlated positively with BMI, hsCRP, leptin and systemic inflammatory cytokine levels. Two weeks of VLCD significantly decreased body weight, and improved glycemia, insulin resistance and lipid profile. VLCD also significantly decreased the expression of chemokine and toll-like receptors (CCR-1,-2,-5, TLR-2,-4) in peripheral monocytes. In SCAT, VLCD reduced mRNA expression of CCL-8, CXCL-10, while CCL-17 mRNA expression markedly increased.

Conclusion: We conclude that T2DM is accompanied by increased mRNA expression of proinflammatory genes in both SCAT and peripheral monocytes. Attenuation of above described inflammation by VLCD may at least partially explain positive effect of weight reduction on diabetic compensation and the presence of cardiovascular complications.

Hormonal and metabolics characteristics of adrenal incidentalomas

ESC-ID: 1293
Authors: Nikolic A
Country: Serbia
University: Univrsity of Belgrade , Department: School of Medicine

Introduction: Adrenal incidentaloma is a tumor of the suprarenal gland identified by using sensitive, noninvasive , imaging technologies (such as ultrasound, computed tomography and magnetic resonance) found by coincidence without clinical symptoms or suspicion. Thay can be functional and nonfunctional, malignant and benign or within some syndrome.

The aim: The objective of this study was to determine the characteristics of incidentaloma (size, localization, hormonal production) and the relationship between incidentaloma and parameters of metabolic syndrome.

Material and Methods: The population of our retrospective study comprises a total of 67 patients. We analyzed the data from protocol for adrenal incidentaloma of Endocrinology, diabetes and metabolic disease Clinic, Clinical center of Serbia.

Results: In our group of patients 64.18% were females and 35.82% were males. The average age of patients was 58.5 (SD=10.88). The average tumor size was 2.88cm (SD=1.38), minimal tumor size was 0.4 cm and maximum size was 7cm. The 48 (71.64%) patients had increased body mass index, 43 (64.17%) patients had arterial hypertension. Low HDL was noticed with 31 (46.26%) patients. Seven patients was diagnosed with subclinical Sy. Cushing (10.44%), feohromocitoma was diagnosed with 2 (3%) patients and primary aldosteronism wasn`t diagnosed at all.

Conclusion: Most of adrenal incidentalomas are nonfunctional. The most common of those tumors that pro-

duce hormones is subclinical Sy Cushing, than feohromocitoma. Patients with incidentaloma have high prevalence of parameters of metabolic syndrome.

Session: ENT / Dentistry

The restoration of endodontically treated teeth by fiber- glass reinforced composite posts and cast posts and core

ESC-ID: 596
Authors: Mladenovic I
Country: Serbia
University: University of Pristine, School of Medicine , Department: Department of Dentistry

Introduction: FRC (fiber-glass reinforced composite) posts are introduced as an alternative for many conventional materials, as cast posts are. Endodontically treated teeth are known to present a higher risk of biomechanical failure than vital teeth. The choice of an appropriate restoration for endodontically treated teeth is guided by strength and esthetics. The aim of this examination was to compare the therapy treatment quality between endodontically treated teeth restored by FRC posts and endodontically treated teeth restored by cast posts and core.
Material and methods: In our examination, we established 30 endodontically treated teeth (28 patients), which were divided in two groups. The first one was formed out of 15 teeth (13 patients) treated by FRC, and the other one was formed out of 15 teeth (15 patients) treated by cast posts and core. FRC posts were cemented into the root canal by Multilink Automix dental cement. Multilink primer A and B were used for root dentin and Monobond S for post treating, in accordiance to manufacturer's instructions. Multicore HB was used for core. Cast posts and core were cemented by Zinc- phosphate cement. The success of therapy treatment between those two groups, was analysed by χ^2 test. The parameter which was analysed was durability, and the patients were supervised for two years.
Results: We had 1 case with decemented FRC, and 4 cases with decemented cast posts and core. On the top of above mentioned, the use of nonmetallic posts in comparation to conventional methods is easy, fast, safe and reliable. FRC post and core system have physical properties similar to dentin, maximum retention with little removal of dentin from the root canal, distribution of functional stress even along the root surface, material compatibility with core, high esthetic qualities, minimal stress during placement and cementation, resistance to displacement, good core retention, easy retrievability, easy of use, safety and reliability, and reasonable cost.
Conclusion: Nonmetallic fiber-glass posts contributed greatly into the development of new post and core systems and improved the quality of prosthetic treatment. In comparison to former conventional materials and post and core systems, FRC posts demonstrated significant preference for new technological accomplishments. Thanks to the development of the nonmetallic posts and their long lasting clinical research, they got more recommendations in the clinical practice.

Investigation of the composition of microbiological flora according to depth of the periodontal pocket of diabetic patients type I-II

ESC-ID: 618
Authors: Minic I, Milojevic I, Kesic L
Country: Serbia
University: Medical faculty , Department: dentistry

I*ntroduction:* Microbiological flora in periodontal pockets is more varied in patients with diabetes mellitus, than in systemic health patients. The aim of the examination was to establish the condition of the health of periodontium and to examine microbiological flora according to depth of periodontal pocket.
Materials and methods: The examination included 160 patients. After the anamnesis was taken, and the clinical state of periodontium on the place of taking samples was established, material for microbiological analysis was taken.
Results: From 112 patients with diabetes there were 52 with diabetes mellitus type I and 60 with diabetes mellitus type II.Third group (48) was made of systemic health patients with periodontal disease. Average values of the plaque index in examined patients were:group I PI = 2.2, group II PI = 2.6, group III PI = 1.9. The average values of the gingival index were: group I GI = 2.0, group II GI = 2.6, group III GI = 1.8.The average values of PDI index were: group I PDI = 5.39, group II PDI = 5.48, group III PDI = 5.31 and values of CPITN were :group I CPITN = 3.58, group II CPITN = 3.69,group III CPITN = 3.13.The most frequent isolated microbes in pockets depth of 5 mm were: in group I Porphyromonas gingivalis was isolated in 21 samples, in group II P.g was isolated in 18 samples and in group III P.g was isolated in 9 samples. In group I Prevotella intermedia was isolated in 19 samples, in group II in 6 samples and in group III in 9 samples. In group I, Aggregatibacter actinomycetemcomitans isolated in 21 samples, in group II A.a was isolated in 18 samples and in group III in 9 samples. The most frequent isolated microbes in pockets of the depth of 6 mm were: P. g isolated in 14 samples in group I, in group II P.g was isolated isolated in 18 samples and in group III in 14 samples. P.i was isolated in 4 samples in group I, in group II in 4 samples and in group III in 4 samples. A.a was isolated in 14 samples in group I, in group II in 18 samples and in group III in 14 samples. The most frequent isolated microbes in pockets of the depth of 7 mm were: P. g. was isolated in 5 samples in group I, in group II in 5 samples and in group III in 4 samples. P. i. was no isolated in group I, in group II P.i was isolated in 3 samples and in group III in 2 samples. A. a was isolated in 5 samples in group I, in group II in 5 samples and in group III in 4 samples.
Conclusions: Patients with diabetes mellitus type II have worst condition of oral hygiene,worst condition of gingival health and deeper periodontal pockets.Variety of the microbial flora increased with the depth of periodontal pocket in this patients.

The influence of anthropometric characteristics of children to eruption time of the first permanent molars

ESC-ID: 705
Authors: Nicolic M
Country: Serbia
University: Nis , Department: Dentistry

Introduction: Anthropometric methods of measuring are the most commonly applied methods for analyzing the growth of children. Anthropometric measures are interconnected, change of one parameter causes the change of other.
Aim: Goal of the paper was to examine whether dental development follows the overall growth and development and time of eruption of first permanent molars.
Methods: The research involved 104 participants, 6 to 8 years of age, from elementary school in Nis. Status of first permanent molars was determined during regular dental exam and of dental age as the average of the sum of existing permanent teeth of the participants. For analyzing physical growth and development anthropometric indexes were applied: height, weight, circumference of chest cavity and of upper arm. Using the method of multivariable regression we determined the influence of joint measurements on examined variable.
Results: Average values of anthropometric parameters, except epidermis thickness, were slightly higher with male participants, and the circumference of chest cavity was considerably higher ($p<0,05$). Dental age average was higher with females because of earlier molar eruption time (female Xsr = 5.92, male Xsr = 5.94). Considerable correlation (0.59) was determined between dental age and the set of anthropometric parameters of general growth and development, with high statistical significance ($p< 0.001$).
Conclusion: There is a considerable correlation between the first molar eruption time and the set of anthropometric parameters of general growth and development, which confirms that dental development follows the overall growth and development of children.

A pilot study to evaluate feasibility, performance and validity of an internet-based audiovisual disability test in healthy volunteer children (aged 4-11 years)

ESC-ID: 829
Authors: Beckett K
Country: United Kingdom
University: University of Southampton , Department: School of Medicine

Introduction: An online audiovisual disability test (TADAST) has been developed to aid monitoring of children with otitis media with effusion in primary care. This is the major cause of short term hearing loss in young children, managed initially with active monitoring. This study aimed to evaluate the online test in healthy volunteer children, considering its agreement with the researcher-supervised version, validity as a measure of disability and feedback from parents.
Methods: 53 volunteer 4-11 year-old participants were recruited from four Southampton children's groups and a Kent primary school, and were asked to complete TADAST twice at 7 days' interval: once under researcher supervision (when parents also completed the MRC OM8-30 functional health status questionnaire and were interviewed) and once at home using the website, in quasi-randomised test sequence. Additional participants responded to advertisements to complete the test twice online at 7 days' interval.
Results: 50 (94%) participants completed both tests; 48 (91%) had a completed OM8-30. 40 parents (representing 93% children) were interviewed. 20 participants of 112 registering an interest (18%) completed the online test twice. In order to investigate agreement, Bland-Altman plots were drawn. Limits of agreement were wide for supervised with web TADAST (-24.7% to 20.3%), narrower for the first with the second online test (-14.9% to 11.6%). Supervised TADAST was correlated with OM8-30, $r=-0.38$ ($p<0.005$), online TADAST less so. Thematic analysis of interviews suggests some parental support for TADAST, but improvement could be made to instructions given and website design: clearer signposting and easier test loading.
Conclusions: Insufficient agreement between the web and supervised versions of TADAST may preclude clinical use of the current website. Suggested website improvements could change this. Supervised TADAST showed weak correlation with OM8-30, demonstrating some criterion validity. More research is needed to validate TADAST for monitoring.

Quantification of Bcl-2-immunopositive cells in different types of chronic tonsillitis.

ESC-ID: 866
Authors: Stankovic P
Country: Serbia
University: University of Nis , Department: Medicine

Introduction: Chronic inflammations of the palatine tonsil are common pathological conditions. The chronic tonsillitis can be classified as chronic hypertrophic tonsillitis (CHT) and recurrent tonsillitis (RT). Numerous data indicate that there are a number of pro- and antiapoptotic factors expressed in the lymphoid tissue during the inflammation. Bcl-2 gene is one of the most important in the regulation of apoptosis. Bcl-2 protein is bound to the outer mitochondrial membrane and prevents apoptosis.
Aim of the paper: The aim of the paper was to show possible differences in the intensity of expression of Bcl-2 in CHT and RT.
Material and methods: As material, we used tonsils, which were taken after tonsillectomy, from patients of both sexes, aged 10-29 years: 5 tonsils with RT and 5 tonsils with CHT. 5um thick serial paraffin tissue slices were stained with hematoxylin-eosin and immunohystochemically (LSAB+/HRP), using the antibody for Bcl-2. We determined the numerical areal density of Bcl-2-immunopositive cells (the average number of cells per square millimetre) in the interfollicular region and mantle zones of the lymph follicles. The digital pictures were taken using the Olympus BX-50 microscope and were analyzed using Image J software.
Results: We did not find statistically significant difference in the number of Bcl-2-immunopositive cells between the groups, neither for interfollicular region nor for mantle zones of the lymph follicles.
Conclusion: The absence of statistically significant dif-

ference for numerical areal density of Bcl-2-immunopositive cells between the groups can be explained by the engagement of same subpopulations of B and T lymphocytes in CHT and RT and by the fact that Bcl-2, although important for prevention of apoptosis, probably does not have a key role in the pathogenesis of CHT and RT.

Universal newborn hearing screening in Clinical Center Nis.

ESC-ID: 1054
Authors: Stojanov A, Arandjelovic J, Zabar K, Jovanovic M, Bojanovic M
Country: Serbia
University: University in Nis , Department: Faculty of medicine

*Introduction:*Estimates of the prevalence of moderate, severe and profound congenital hearing loss among newborns range from 1 in 900 to 1 in 2500. Advocates of universal newborn hearing screening (UNHS) believe that earlier application of available therapies could reduce or eliminate the gap in language skills between deaf and hearing children.
The aim: The aim of this study was to present the results of UNHS and to contribute to the implementation of a UNHS in Serbia.
Methods: We started performing UNHS at the Gynaecology and Obstetrics Clinic in Nis in July, 2007. In first 3 months we screened 695 newborns after the first day of life, using two-stage Transient Evoked Otoacoustic Emission (TEOAE) screening test. The automated device we used for the screening was MAICO EROSCAN. The newborns who failed the first screening unilaterally or bilaterally were rescreened 30 days later. The newborns with risk factors for hearing loss as well as those who failed screening twice were rescreened using an Auditory Brainstem Response (ABR) test.
Results: From the total number of 695 newborns (50.2%male and 49.8 female) examined in this study, 89,1% passed the first screening, while 99.42% passed the second screening, performed a month after. 0.58% newborns were refered to additional audiological testing. Hearing loss was confirmed in 3 cases.
Conclusions: The use of TEOAE in UNHS is non-invasive, painless, reliable and inexpensive. We hope that this study will contribute to the development of a national newborn hearing screening program, which will obtain more precise data on the incidence and prevalence of hearing loss and impairment in Serbia.

Evaluation of nitric oxide synthesis and oxidative stress in vocal polyps and nodules.

ESC-ID: 1079
Authors: Cosgarea I, Parvu E, Chirila M
Country: Romania
University: „Iuliu Hatieganu“ University of Medicine and Pharmacy, Cluj-Napoca, Department: General Medicine

Aims: It was suggested that increased iNOS expression and NO formation, may have an important pathogenic role in vocal cord diseases. The present study investigated the possible involvement of NO and oxidative stress in the pathogenesis of vocal polyps and nodules.
Materials and Methods: The study was carried out on patients with vocal polyps with an average age of 56.3 years and a control group of healthy subjects. Peripheral blood samples were obtained, NO production was measured as the amount of nitrite and nitrate (Griess reaction) and oxidative stress was evaluated by the total antioxidative reactivity (TAR), total oxidative status (TOS) and oxidative stress index (OSI).
Results: The serum nitrite and nitrate levels in the patients were significantly increased compared to the control. TOS was not increased compared to the control, but TAR was significantly reduced compared to the control. Due to that OSI was very low to the patients compared to the healthy control.
Conclusions: These results suggest that in patients with vocal polyps and nodules oxidative stress is increased due to the increased NO synthesis and decreased TAR.

Effect of diet control in the management of food-induced allergic rhinitis

ESC-ID: 1103
Authors: Liang ZC, Kok YO, Yeoh KH, Wang DY
Country: Singapore
University: National University of Singapore , Department: Yong Loo Lin School of Medicine

Objective 1. To evaluate the effectiveness of strict diet control in the management of food-induced Allergic Rhinitis Study Design Prospective study of allergic rhinitis patients managed on strict diet control.
Subject and Methods: 583 patients attending an ENT Clinic were recruited. Presence and severity of up to 4 major allergic rhinitis symptoms were recorded for each patient. 11 commonly reported food allergens were tested using a standard intra-dermal progressive dilution food test (IDPFT). All patients denied food anaphylaxis. Patients were counselled by a dietician and put on diet control therapy. They were reviewed after a month using a five-scale symptom score.
Results: 21% of patients reported „Poor“ to „Slight“ improvement. 29.4 % reported „Better“ Improvement. 49.6 % reported „Good“ to „Very Good“ improvement. Treatment success was most likely in patients with allergies to egg (51.7%), milk (46.6%) and wheat (45.2%). Treatment results were significantly poorer in patients with allergies to garlic (30.8%), soy (33.1%) and malt (38.4%).
Conclusion: Strict diet control is effective in the management of patients with food-induced allergic rhinitis. However, discriminate choice of patients is imperative towards ensuring treatment success with diet control.

Clinical application of tissue-engineered replacement for ear ossicles: PORP and TORP-shaped (hydroxyapatite based scaffolds) cultured with human mesenchymal stromal cells

ESC-ID: 1389
Authors: Mojtahed M, Mojtahed A, Mahboubi H, Saedi B, Karimi A, Soleimani M
Country: Iran
University: Tehran University of Medical Sciences , Department: Imam Khomeini Hospital Complex-Research Deput

Introduction: Ossiculoplasty is the standard procedure to treat conductive hearing loss. Depending on the type of the defects, partial or total replacement of the ossicular chain is required. Different biomaterials have been used to substitute the missing ossicle to find the best material. This study was designed to evaluate the feasibility of hydroxyapatite PORP and TORP as a scaffold with human mesenchymal stromal cells (hMSCs) and their use as replacement prosthesis during ossiculoplasty.
Material and methods: This study was conducted in three male patients (two canal wall down due to cholestatoma and one incus erosion due to chronic otitis media) between April 2008 and June 2009. All pre and post operative audiometric evaluations (pure tone air and bone conduction thresholds) were carried out in the same center and by the same audiologist before and 3 months, 6months , and one year after the operation.
Results: The hMSCs were positive for CD10, CD44, CD166, CD106, HLA-ABC, CD90, CD54, and CD105, but were negative for CD34, CD45, CD117, and CD31. Hearing was acceptable and no signs of rejection were seen after at least one year of follow-up.
Conclusion: The idea of tissue-engineered ear ossicles is a feasible and interesting option for the replacement of the ear ossicles. However, the final outcome needs longer follow-ups. It is with great pleasure that we acknowledge the continued and generous support from Elite National Foundation of Iran (Bonyad Meli Nokhbegan, BMN).

Evaluation of the morphologic and visual indices of the mandibular cortex to compare with subtle measurement of the mandibular cortex on panoramic radiographs to identify postmenopausal women with low bone mineral density

ESC-ID: 1452
Authors: Sayahpour S, Shokri Mojdehi M, Tofangchiha M
Country: Iran
University: Qazvin University of Medical Sciences , Department: Radiology

Aim: Osteoporosis is the most common metabolic bone disease and characterized by an increased risk of bone fractures. The aim of this study is to evaluate the morphologic and visual indices of the mandibular cortex to compare with accurate measurement of the mandibular cortex on panoramic radiographs to identify postmenopausal women with low bone mineral density (BMD).
Methods and Materials: In this study, 91 panoramic radiographs of postmenopausal women were divided into two groups based on the BMD to normal and women with skeletal low BMD. Women with history of bone metabolism affecting diseases or drugs were excluded from this study. The panoramic images were examined by 4 observers to evaluate the thickness & morphology of the mandibular inferior cortex. Data were considered for sensitivity, specificity and positive predictive value.
Results: In this study, the mean sensitivity in subtle measurement of the mandibular cortex (in Mental Index(MI) and Antegonial Index(AI) 83.7% and 77.6% respectively) to compared with the mean specificity (in MI and AI 35.7%) and positive predictive value (in MI and AI 60.3% and 58.5% respectively) were greater. Also interobservers' agreement were moderate to good in Mandibular Cortical Index(MCI)(kappa = 0.460) and good in visual assessment of the mandibular cortex (kappa = 0.624) in this study.
Conclusion: The results of this study demonstrated that women with skeletal low BMD are more likely to have altered inferior cortex. Also the visual cortex assessment can not rely for screening women with skeletal low BMD. According to this study, we conclude that measurement of mandibular cortical width and mandibular cortical index is more to have effected than visual assessment of the mandibular cortex to identify women with skeletal low BMD.

Session: ENT / Dentistry POSTER

Correlation between teeth development and weight of human fetuses

ESC-ID: 600
Authors: Pjevac S, Lalosevic D
Country: Serbia
University: Novi Sad , Department: histology and embriology

Introduction: Teeth development is passing through stages: bud stage, cap stage, bell stage and crown stage. Development of certain groups of teeth varies in time. Eruption of first permanent incisors and first permanent molars is in the same time. One of the certain parameters in order of fetal age is their weight.
Aim: The present study was aimed to fortify correlation between development of first primary incisors, first primary molars, first permanent incisors and first permanent molars, and weight of human fetuses.
Material and methods: Fetal human tissues of mandibula were fixed in 10 % formalin and decalcinated in 10 % formicum acid, histological preparations provided with classical paraffin technique and cut into sections of 5 micro meters and histologicaly analyzed using hematoxylin and eosin stain. The corresponding formula for linear correlation was used to fortify correlation.
Results: Value of linear correlation is r = 0,87, which means that correlation between teeth development and fetal weight exist and that is significant.
Conclusions: Correlation between teeth development and weight of human fetuses exist, it is significant and positive. Growth of one value (teeth development) correlates with growth of the other value (weight). First permanent incisors and first permanent molars are in the different development stages.

Screening of low risk populations of oral premalignant and cancer with VELscope

ESC-ID: 669
Authors: Rai B, Kaur J, Anand SC
Country: Belgium
University: Catholic university leuven , Department: oral imaging centre

Head and neck cancer, including the oral cavity, is the sixth most frequent cancer. Early detection and prompt treatment offer the best chance for cure. As patient awareness regarding the danger of oral cancer increases, the demand for „screening“ is expected to increase. Various oncology, dental clinics and research centers have conducted studies of direct tissue fluorescence visualization as a screening technique for oral premalignant lesions and oral squamous cell carcinoma (OSCC). The effectiveness of the VELscope in a general and primary care centre practice setting is unknown. This pilot study is to assess the VELscope system as a screening adjunct among lower-risk populations seen by a primary care clinician in North India of a general practice setting. This study involved a retrospective comparison of three standardized techniques oral cancer screening examination protocols conducted on an apparently low-risk patient population seen in a general dentistry practice. For three months, all patients age 20 or older received oral examinations, according to a standard oral cancer screening protocol. The same population was examined according to the same protocol with the addition of direct tissue fluorescence visualization using the VELscope. Screening with incandescent light examination yielded a prevalence of mucosal abnormalities of 1.2%, none of which were premalignant. Screening with incandescent light examination combined with direct tissue fluorescence visualization yielded a 1.8% prevalence of mucosal abnormalities; based on surgical biopsy and histopathologic examination, 87% of these were potentially premalignant.

Analysis of water sorption of dental luting cements

ESC-ID: 1094
Authors: Nedeljkovic S, Darko G
Country: Serbia
University: University in Nis, Facultet of Medicine , Department: Dentistry

Introduction: Water sorption and solubility of dental luting cements may cause stress-induced degradation of the luting cement. The latter then leads to debonding and/or fracture of the restoration, increased marginal leakage, and increased potential for secondary caries.
Aim: This study evaluated water sorption of dental luting cements in different solutions using physical methods.
Methods: Five different dental luting cements were studied: (1)Multilink, (2)Eco-Link, (3)Compoglass Flow, (4)RelyX Unice, (5)Bifix SE. Speciments were prepared by dispensing the uncured cement into a mould 7x5x2mm. After preparation cured specimens were weighed and then stored into the three different solutions: (1)destiled water, (2)artificial saliva pH 6,2, (3)artificial saliva pH 7,4. Water sorption was calculated by weighing the specimens after 14 days.
Results: There is no significant correlation between materials in water sorption (p>0,05). Water sorption between solutions is found to be not significant (p>0,05).
Conclusions: 1. Water sorption of dental luting cements is not significant after 14 days in solutions; 2. Differences between water sorption and sorption of artificial saliva are non significant; 3. Differences between sorption of artificial saliva with pH6,2 and pH7,4 are non significant

Facial features and adolescence. Facial morphometry of children and juvenile.

ESC-ID: 1144
Authors: Lyko D, Kruczek A, Urbaniak M, Zielinska M, Dyduch A, Wojtas A
Country: Poland
University: Medical University of Poland, Katowice, Department: Orthodontics

Introduction: Face reflects origin, psychosocial maturity and emotions. Hence face construction and aesthetics absorb specialists. Facial features analysis enables malocclusion treatment.
Aim: Due to lack of facial features juvenile profile we established facial proportions changes.
Material and Methods: We analyzed facial morphograms of primary and secondary school students, from Zabrze and Limanowa. Qualified children with not dismorphic faces were divided into 2 groups: I before growth period, aged 7-9 and II older group, aged 16-18. Direct facial measurements done with vernier caliper gauge and bow handle compasses were illustrated by morphograms.
Results: The most evident facial features changes after puberty growth leap concerned both male and female mandible structure. Inclination angle of mandible corpus in comparison with face depth increased, insignificant chin flattening and maxilla angle decrease were observed. Significant widening of bizygomatic distance with broadening of maxilla angles was disclosed, face was trapezium - shaped. Extension of eyelid gap, basis of nose and oral cavity space was revealed. Those changes concern boys. Subnasal region prolongation and increase of upper lip protuberance were stated. Nasolabial angle increased among girls. Presentation including facemorth animations.
Conclusions: Increased length and span of eyelid gaps, prominent cheeks, convex lips and straight profile - determine youthful face.

Analysing of enamel microhardness after application of fluoride containing and fluoride free bleaching agents

ESC-ID: 1476
Authors: Garic N, Vostinic V, Spasic M
Country: Serbia
University: University of Nis , Department: Department of Dental Pathology and Endodontic

Introduction: Teeth bleaching using oxidizing agents such as carbamide perokside is becomind very popular procedure in esthetic dentistry. Tooth whitening is generally regarded as safe, but there are adverse reactions such as tooth sensitivity. Fluoride application could efectively reduce tooth sensitivity and increase microhardness.

Aim: To evaluate the effects of fluoridated bleaching agents and post-bleaching fluoridation treatment on enamel microhardness.
Material and methods: The material in this stydy consisted of 10 freshly extracted human teeth. Teeth were cut into halves and then divided into the following four groups: Group I: control samples immeresed in human saliva. Group II: samples treated with fluoride-free 10% carbamide peroxide (CP). Group III: samples treated with 10% CP with additional topical fluoridation by using 2% neutral sodium fluoride gel for 30 min. Group IV: samples treated with 10% CP containing 2% sodium fluorid gel. Between treatments the samples were stored in filtered human saliva. The samples in Groups II, III and IV were treated 8 hours daily for 14 days. Microhardness testing was done by using static Vickers test.
Results: After 2 weeks, samples from groups II and III showed significant changes in mcrohardness comparing to control samples. Samples from group IV shoved less changes in microhardness.
Conclusion: Human saliva protects and remineralize teeth enamel and bleaching products containing fluoride showed less changes in microhardness.

Session: Epidemiology / Social Medicine – Poster

Knowledge And skill of last-year-medical-Students On Cervical Cancer Prevention

ESC-ID: 485
Authors: Nasution K, Brohet K, Kekalih A,Budiningsih S, Ocviyanti D
Country: Indonesia
University: University of Indonesia , Department: Medical

Background: Cervical cancer is the leading cause of death due to cancer in most developing countries. Overcoming this problem requires a vigorous prevention strategies involving mainly primary health care workers. Medical students as candidates for primary health care workers must have a good knowledge about cervical cancer prevention and conduct such skillful examinations as prevention efforts on their patients.
Aim: To find out level of knowledge and skill of cervical cancer prevention in last-year medical students and their association with curriculum type.
Method: This was a cross sectional study conducted on ninety-one last-year-students in Indonesia. Students who followed this study, consisted of two groups, namely students with competency-based curriculum (CBC) and non-CBC. Questionnaires were filled in by the students with answering the questions and self-assessing their ability to do Pap test, visual inspection with acetic acid (VIA), and cervical cancer prevention counseling.
Results: Over half of respondents performed Pap tests (61.5%), VIA (73.6%), and counseling (65.9%) as many as 1-5 times. There are more respondents who have never done Pap test (35.2%) compared to VIA (13.2%) and counseling (14.4%). Maximum knowledge score gained in this study were 31 of the 48 total score,with minimum score of 4 and an average of 18 (SD ± 4.94). The average score of performing Pap tests in this study were 5.89 (SD ± 2.71), VIA 7.15 (SD ± 2.6), and counseling 6.7 (SD ± 2, 24). There was a significant association between knowledge score of CBC's students and non-CBC's ($p = 0.009$; 95% CI 0.69 to 4.7) with an average knowledge score 16.42 for CBC and 19.13 for non-CBC. Though in the opposite, there was no significant association for both groups' score of Pap test skill ($p = 0.323$; 95% CI -1.63 -0.54), VIA skill ($p = 0.215$; 95% CI -1,65-0,38), and counseling skill ($p = 0.266$; 95% CI -0,41-1,47).
Conclusion: Knowledge of students regarding the prevention of cervical cancer is low, but their skill to perform Pap test, VIA, and counseling is good enough. In addition, there is significant association in the knowledge score about cervical cancer prevention on students with CBC and non-CBC, with knowledge score of non-CBC students higer than those of CBC students, but not significant on skill and counseling ability.

Influence of socio-economic status on cancer risk factors and prevention patterns in Pomerania region

ESC-ID: 514
Authors: Budynko L, Kleister A, Mieszkowski M, Klasa L, Sadowska A, Drucis K
Country: Poland
University: Medical University of Gdansk , Department: Surgical Oncology

Introduction: Overall cancer risk and survival rates are known to vary between social groups in case of most malignancies. Despite the global recognition of that notorious effect, few explanations have been so far universally acknowledged. As underlying causes elude scientific verification, there aren't many applicable solutions. Given the chance to measure the approximate scale of that relationship in our region, we have examined its association with common risk factors and the frequency of participation in public screening programmes.
Materials and methods: We were analysing both objective medical records and personal responses to concurrent survey (424 cases altogether), collected during periodical health-promoting actions called „White Saturdays". Several times per year students, accompanied by young doctors, have travelled to chosen destinations in order to propagate health issues and offer free-of-charge basic medical examinations. With the aim of evaluating social status, a suitable assessment scale was designed, including wide range of parameters such as income source, economical activity, household size or received education. Analogically, relative risk and disease prevention/lifestyle habits were estimated. Necessary economical data for comparative ecological study were obtained from recent statistical publications released from Central Statistical Bureau or counties' Labour Offices.
Results: There were considerable socio-economic disparities between visited locations; they may have contributed partially to found regularities, but causal connection often remained unclear. One could surely notice a statistically significant correlation between personal social status and the understanding of oncological prevention guidelines. Age, besides being strictly related to cancer incidence rate, was not a confounding factor in our considerations. Furthermore, deprived people tended to have worse BMI and SBP/DBP values. Although the distribu-

tion of generalised cancer risk seemed to be even, there were noticeable differences in exposition to particular malignancies. The availability of advanced medical equipment was often diverse, as well as the quality of provided services.
Conclusions: Poverty, even in not explicit form, has got a large impact on responsible attitude towards oncological hazards and health-seeking behaviours. In that way it could affect both global survival and mortality statistics in our country. This study gives an insight into problems which contribute to the largest extend to the observed phenomenon. Stratifying our population sample on determined status, we were able to tell which issues should be firstly addressed so as to reduce overall burden. Therefore we believe that those findings may have real practical applications in the near future.

Parental knowledge about children allergy - screening questionnaire

ESC-ID: 559
Authors: Kaczmarska D, Chudowolska M
Country: Poland
University: Medical University of Warsaw , Department: I Faculty of Medicine

Aim: Allergy prevalence is increasing among population in developing countries. Recent publications indicate education of parents of children with allergy as a valuable prognostic factor of developing allergy among children and effectiveness of home therapy. The aim of our study was to evaluate the usefulness of self-made screening questionnaire for investigation of parental knowledge and their educational sources of allergy.
Material and methods: The study was directed to 100 Polish parents of children with different type of allergy at their visit at an outpatient allergology clinic. We divided analyzed group according to age, education and living. The screening questionnaire was composed of four types of questions: self evaluation of knowledge on four steps scale (better than good, good, average, lower than average), parental source of information about allergy, influencing and developing allergy factors and basic symptoms. The statistical analysis was performed by nonparametrical chi-squere test with level of significance was $p<0.05$.
Results: Self evaluation of allergy knowledge had shown that 93% of parents evaluated their knowledge better than average. However, 21% of respondents gave wrong answers on questions about asthma. Only 33% of parents recognized allergy among their children and 25% of them provide regular treatment. Basic symptoms of allergy are recognized by parents with high education and older than 40 yr. The main source of information is medical staff (44%), then Internet and brochures (36%) and other patients (20%). There were significant correlation between basic symptoms of inhaler allergy in the past (IA) and clinical allergy (CAL) ($X2 = 29.79$; $p<0.001$) or clinical asthma (CAS)($X2 = 18.14$; $p<0.001$).
Conclusions: Significant correlation between IA and CAL or CAS may show usefulness of the screening questionnaire in all groups of parents. Parental knowledge had not solid foundations - the basic symptoms like seasonal sneezing or itchy eyes might be unrecognized.

Pattern of physical activity and its differences among school girls and boys in Pakistan

ESC-ID: 856
Authors: Khawaja S, Khoja AA, Otwani K, Khuwaj AK
Country: Pakistan
University: Dow University of Health Sciences, Karachi, Pakistan , Department: MEDICINE

Introduction: Obesity among school going children is one of the major global health challenge. Childhood obesity is the result of a long lasting imbalance between energy intake and energy expenditure. A major contributing factor is physical inactivity which is also closely linked to bone health, cardiovascular disease, overall body fitness and psychological well being .The objectives of this study were to identify the pattern of physical activity and its difference among adolescent girls and boys.
Aim: Level of physical activity is poor amongst adolescents in Pakistan.
Method: A cross-sectional, questionnaire based survey was conducted in five inner city secondary schools serving predominantly middle and lower socioeconomic class in Karachi and Quetta. In all, 314 adolescents (13 to 17 years) completely responded to the questionnaire. All the data was collected and managed by trained medical graduates. Chi-square test was used to calculate the differences of physical activity pattern among girls and boys.
Results: Questionnaire was administered to 159 boys (50.6%) and 155 girls (49.4%). Large majority (83.7%) of adolescents were using vehicle to and from school and over half (55.1%) of respondents spent three hours or more on watching television, playing computer games or doing other sitting activities. Only 35.7% of adolescents were involved in vigorous activities; more boys compared to girls (52.2% vs. 18.7%; $p<0.001$). Similarly, boys were found to be more physically active for at least thirty minutes per day as compared to girls (45.3% vs. 27.7%; $p=0.001$). More than half of the study participants (55.7%) were taught about physical education and 61.2% of them had accessibility of play ground other than school.
Conclusion: Substantially large proportion of adolescents particularly girls were physically inactive in this study. There is a need for those with responsibility for adolescent's health, including parents, schools, and community health providers, to consider and address the need for effective interventions to encourage increased physical activity level among adolescents.

The quality of death certificates.

ESC-ID: 882
Authors: Gjeorgjievski M., Gjorgova S
Country: Macedonia
University: University St. Cyril and Methodius, Faculty of Medicine , Department: Faculty of medicine

Introduction: Taking into account that the basic parameter for the health condition of the population in the country is the mortality rate, it is very important that the registration of the cause of death should be done under the WHO roles. Following the WHO instructions, each case of death in R.Macedonia has to be registered trough the obligatory complementing of the "Medical certificate of the cause of death". The evaluation of these certificates

has shown a considerable increase of mortality from myocardial infarction in R.Macedonia where, 10-15 years ago, respective death rates were low and relatively rare among the representatives from the younger age groups.
Objectives: To evaluate the quality of the "Medical certificate of the cause of death" in which the myocardial infarction has been registered as a cause of death.
Materials and Methods: With random sampling, 154 death certificates with registered myocardial infarction as a cause of death were analysed. The cause of death entered in the analysed death certificates was compared with information obtained from the medical records (present of the five selected risk factors), necropsy and evaluation of the specially developed questioner for this occasion complemented by the members of the family.
Results: 64.3% of the analysed deaths from the myocardial infarction happened outside the hospital and only 35.7% happened in some of the health departments. Only 26% from all died in the department of cardiology (the necropsy has been made only on 7.5% of them). In 38.9% of the study population, only two out of five risk factors were present. Without consultation of the medical records, 43.5% of the death certificates were filled. For 13.6% of the analysed death certificates with noted myocardial infarct as a cause of death there is a significant doubt that the myocardial infarct is a right cause of death. These certificates were filled without consultation of the medical records either without seeing the dead body, only related to the information, which has been got from the members of the family.
Conclusions: Similar and possible lower or greater errors in complementing of the death certificates can cause serious variations in national mortality figures and influence the preventive strategies.

Lifestyle variables and stressful life events as breast cancer risk factors

ESC-ID: 1023
Authors: Jovanovic T
Country: Serbia
University: University of Nis , Department: Faculty of Medicine

Aim: The aim of this study was to detect the significance of some lifestyle variables such as consumption of alcohol and cigarette smoking, and also stressful life events in breast cancer genesis.
Material and Methods: The study was conducted during 2009 in our clinic. Case-control study included 106 women with clinical and histopathological diagnosis of breast cancer and 106 women in control group with other diagnoses; they were matched by age (± 2 years). The data about breast cancer risk factors were collected by the targeted epidemiological questionnaire. The data were analyzed with the McNemar test.
Results: The results indicated that consumption of alcohol (RR=4,11 CI(95%)=2,05-8,24 p = 0,0001), cigarette smoking in family members (RR = 4,25 CI(95%) = 1,43-12,58 p = 0,0072) and maternal death in childhood (RR = 4,4 CI(95%) = 2,30-8,40 p = 0,0000) could be considered as breast cancer risk factors. There were not found a statistically significant difference between groups in relation to the age when they started to drink, the number of years of alcohol consumption and types of alcoholic beverages. Patients with breast cancer were significantly more likely than controls lived with members of the household who smoke (RR = 4.25 CI (95%) = 1.43 to 12.58 p = 0.0072). There were not found a statistically significant difference between groups in relation to cigarette smoking, age when they started smoking regularly, the length of smoking experience and number of cigarettes smoked per day.
Conclusion: Breast cancer is the most common malignant disease and the leading cause of death among malignant tumors of women in Serbia and also in other countries. It is necessary to further explore significance, mechanisms of action and role of some of the most common habits of women, such as drinking alcohol and smoking cigarettes, in the development of breast cancer. It is necessary to further study the possible influence of stressful life events and experiences of early loss of parents on the vulnerability of developing breast cancer.

Knowledge and attitudes towards pain and the use of opioid analgesics among a portuguese university hospital centre's health care providers

ESC-ID: 1111
Authors: Cardoso AL, Campelos J, Costa N, Gama C, Martins J, Moreira S, Ribeiro N, Silva N, Sotto Mayor J, Tavares S, Valongo A, Dores G
Country: Portugal
University: University of Porto - Biomedical Sciences Institute of Abel Salazar , Department: Medicine

Background: Health care providers' misconceptions and negative attitudes towards opioids and the lack of knowledge in pain are well recognized barriers to effective pain management. This can be partially attributed to limited attention given to pain management in medical and nursing undergraduate and postgraduate curricula. Health care providers' underlying knowledge and attitudes concerning pain in a particular health care setting need to be clearly identified before educational strategies are developed to address the problem.
Aims: The purpose of this study was to evaluate health care providers' knowledge and attitudes regarding pain and its treatment with analgesics, namely opioids, in a Portuguese university hospital centre.
Methods: A descriptive and cross-sectional study was conducted in a convenience sample of physicians and nurses from different wards of the three centre's integrating hospitals. A 32-item questionnaire (adapted from McCaffery and Ferrell's „Knowledge and Attitudes Survey Regarding Pain") and a background information form were used to collect the data in March and April 2010. Descriptive statistics were used to determine mean knowledge score. Comparisons between groups were performed through specific statistical tests, as the situation required.
Results: A total of 577 health care providers completed the questionnaire (response rate of 53.2%), 40% physicians and 60% nurses, 31% males, ages 22-65 years old, time of practice experience ranging from 4 months to 40 years, 14.2% stated having received specific pain education. The mean correct answer rate was 64.56% (SD 12.52). The percentage of correct answers varied widely among the different items (from 37.1% to 95.2%). The percentage of correct answers to items related to analgesics pharmacology was significantly lower than that to other questions (p<0.0009). Physicians scored significantly higher (65.96%) than nurses (63.78%) (p = 0.04).

There was no statistically significant difference between scores obtained by those who referred having had special education on pain and that by those who referred not to have had it (p = 0.569).
Conclusions: The results support the concern that there are still significant knowledge deficits regarding pain and its management with opioids among the centre's health care providers. The findings suggest a need to create basic and continuing education programs that will improve health care providers' knowledge level. Therefore, this study may be used as an orientation on the topics which need to be improved.

Clinical outcome of lung cancer in elderly patients in Belarus

ESC-ID: 1218
Authors: Petrovitch O, Averkin YU
Country: Belarus
University: Belarusian State Medical University , Department: General Medicine

Aim: Nowadays clinical outcomes of tumour progression and treatment approaches of elderly patients make it possible to define such field in oncology as cancer in the elderly. Thus, the purpose of our study was to analyze clinical features of lung cancer and survival rates of patients (age over 70 years) in Belarus depending on the treatment approaches.
Material and Methods: In this study Belarusian Cancer Registry data on incidence of lung cancer detection in patients (age over 70) in Belarus during the period 1991-2005 were used. The overall number of detected cases was 18027. The age-sex structures, extension of the process, presence of the multiple primary tumours, survival rates after treatment and time period were analyzed. The survival rate was carried out using the Kaplan-Meier method.
Results: In populations (age over 70 years) age-specific incidence was the highest in the age group 70-74 (185.26/100 000), the lowest in the age group over 85 years (54.93/100 000). In the structure of cancer incidence (age over 70) in men lung cancer occupied the 1st place (16.7%), prostate cancer- the 2nd (16.4%), colorectal cancer – the 3rd (10.8%); in women colorectal cancer was on the 1st place (13.4%), breast cancer – on the 2nd (11.8%), stomach cancer – on the 3rd (9.7%). Lung cancer in women in the analyzed age group occupied the 5th position. For some reasons only 30 % of patients received anticancer treatment, moreover possibility of the usage of such treatment correlated with age group. In the age group over 85 years anticancer treatment received only 6% of patients. The number of patients who received anticancer treatment has increased by 11% in 1991-2005. Median survival time was 12.6 months in patients with I stage of lung cancer, 8.1 months - with II stage, 4.7 months – with III stage, 2.1 months – with IV stage (p<0.0001). Median survival time in patients who received complex treatment was 16.2 months in 1991-1995 and 19.4 months in 2001-2005. There were no differences in survival rates in patients with IV stage depending on the treatment approach (radiotherapy or chemotherapy).
Conclusion: Lung cancer was morphologically verified in 47.8% of cases in the age group over 70, that is 30% less, than in the whole number of patients with lung cancer. Moreover anticancer treatment underwent only 29.6% of patients in the age group over 70 in 1991-2005. Complex treatment increased survival rate, but the possibilities of such treatment usage and tolerance of it are restricted (less than 1% of patients in the analyzed age group). The leading method of treatment in this age group was radiotherapy; using it in combination with chemotherapy increased the median survival by 2-3 months.

Pharmacoepidemiological and pharmacoeconomical aspects of treatment of arterial hypertension in patients with type II diabetes mellitus in outpatient and inpatient department.

ESC-ID: 1273
Authors: Anosov I, Gushina Y
Country: Russia
University: Peoples' Friendship University of Russia , Department: Of Management and Economics of Pharmacy

Background: Diabetes mellitus (DM) is associated with a markedly increased of cardiovascular complications (CVC) and also represents an independent risk factor for enhanced mortality. CVC accounts for more than 50% of total mortality among patients with type 2 DM. DM is a growing epidemic and the cost of treating diabetes is largely increasing, significant part of these costs associated with treatment of complications of DM. Epidemiological studies have indicated that patients with DM have a two times greater risk of CVC mortality than those without diabetes and the presence of CVC greatly increases the costs of treatment of these patients. Reduction in this burden requires a multifactorial approach, encompassing control of glycaemia and reduction in traditional cardiovascular risk factors, most important of which is arterial hypertension. Numerous studies have shown the efficacy of controlling cardiovascular risk factors in preventing or slowing CVD in people with DM. Based on the results of these studies have been developed international and national standards of treatment and prevention DM. Little research in Russia has explored of treatment of hypertension and its adequacy of management in the patient with diabetes and the cost of medications for patient with DM and arterial hypertension. We undertook a study to determine the cost of DM medications and arterial hypertension in outpatient and inpatient department and its accordance with international and national standards of medical care in DM.
Methods: 264 patients met criteria for type 2 Diabetes mellitus and arterial hypertension. We obtained patient information, risk factors, and current medications using retrospective chart reviews in outpatient and inpatient department. We compared the assigned therapy with current treatment guidelines for DM. We then calculated costs of treatment of DM and arterial hypertension per month for each patient and for all patients.
Results: It should be noted inadequate medical attention to non-pharmacological correction of risk factors (smoke, diet). High blood glucose levels (>7, 8 mmol/l) and elevated blood pressure (>135/85) in most patients at initial examination in hospital showed ineffective therapy in outpatients. For the treatment of hypertension in outpatients most frequently used monotherapy with angiotensin-converting enzyme inhibitors (47, 7%) and

such therapy is equal to the recommendations, but only for initial therapy. Also in ambulatory patients with coronary heart disease, not enough use of beta-blockers (12, 3%) are recommended in such patients. In the inpatient department most frequently used in combination antihypertensive therapy (78, 6%) and have achieved good control of blood pressure. The cost driver is inpatient treatment of arterial hypertension The costs of monotherapy account for 46, 7% of total costs for treatment in outpatient department. On the contrary, in inpatient department cost of monotherapy play a minor role (16, 8%) because does not provide a multifactor approach to the treatment of arterial hypertension in patients with diabetes mellitus.

A/H1N1 influenza - facts, opinions, attitudes and knowledge. Research and evaluation.

ESC-ID: 1328
Authors: Gajzlerska W, Urbanski B, Majewski M, Surowiecka A, Andrasik M
Country: Poland
University: Medical University of Warsaw , Department: 1st Faculty of Medicine

Introduction: A/California/04/2009 (H1N1), a new strain of influenza virus, commonly referred to as ‚swine flu', began to spread in several countries around the world in spring 2009. During the first few days after the initial outbreak in April in Mexico, extensive media coverage together with a high degree of uncertainty about the transmissibility and mortality rate associated with the virus caused widespread concern. In Poland the first case of A (H1N1) was noted in the 19th week of 2009 (May) and the first death in the 47th week of 2009 (November).
Aim: The aim of our study was to assess the knowledge of Polish people about influenza A/H1N1.
Materials and Methods: A cross-sectional questionnaire survey was conducted from May to July 2009 in different Polish cities, towns and villages among randomly selected representative adults. The questionnaire was designed and revised after pilot testing. A 24-item questionnaire was finally used.
Results: Over 400 participants were successfully interviewed. In our study we report the results which express the level of knowledge of Poles on the subject of vaccinations, diagnostics and treatment of influenza. The results indicate the exact time when the study group received information of A/H1N1 influenza spread for the first time and what precautionary actions were taken into consideration. Other aspects of the questionnaire dealt with the knowledge of ways of transmission of A/H1N1 influenza virus and signs, symptoms and possible complications of A/H1N1 influenza. The analysis of all the information is correlated with the source of information that the respondents used and the demographic data.
Conclusion: The results of the study have proved that despite the extensive media coverage the tested group displayed insufficient knowledge of the subject of A/H1N1 influenza infection. It indicates a great need of education about the prevention methods, the identification of symptoms and the consequences of the infection

From myalgia to cancer: A Case of neuroendocrine tumor and the range of differential diagnosis for back pain

ESC-ID: 1375
Authors: Roach EC, Gezgen G, Atilla Uslu A
Country: Turkey
University: Hacettepe University , Department: Faculty of Medicine

Aim: Back pain is a clinical presentation that we commonly face with, whether as medical students or resident physicians. We aim to present the congress with a case of neuroendocrine tumor that presented with back pain as the only symptom. Afterwards we will review the common causes of back pain and list the red flags that should be looked out for.
Methods and Materials: We scanned literature on common causes of low and mid-back pain. We filtered out relationships between backpain and malignancies and tried to determine a consistency. Afterwards we gathered information on the patient using Hacettepe University databases. We were involved in the management of the patient and follow up and acquired the radiological scans and reports that would provide us with further data.
Results: A 50 year old patient presented with back pain at our clinic and was examined by the Physical Therapy and Rehabilitation department. Biochemical analysis revealed minimally elevated liver enzymes which prompted further investigation. Ultrasonographic examination revealed a mass. A CT scan was ordered which revealed that it was originating from the tail of the pancreas and extended into the liver. A liver biopsy revealed that it was a well differentiated neuroendocrine neoplasm. A distal pancreatectomy, splenectomy and right hepatic lobectomy was done. Malignancies may often present with subtle symptoms such as backpain. Neurological examination, careful interpretation of laboratory and radiological examinations may reveal markers that will result in a malignancy.
Conclusion: Neuroendocrine tumors are known to secrete a variety of substances. However, approximately half of the pancreatic euroendocrine tumors are nonfunctional. Due to lack of specific symptoms, most patients with nonfunctional pancreatic neuroendocrine tumors present with locally advanced or metastatic disease.1 The rate of serious causes of back pain is less than 1%.2 As practitioners we have to be aware of the red flags that will point out a malignancy.

The effects of treatment on sexual life of breast cancer patients

ESC-ID: 1420
Authors: Jurca M, Besic N
Country: Slovenia
University: University of Ljubljana, Medical Faculty , Department: Institute of Oncology, Division of Surgery

Aim: The most common malignancy in women is breast cancer. The treatment of breast cancer depends on the clinical stage and affects the quality of life in different ways. The aim of this prospective study was to find out the factors associated with changes in sexual life of breast cancer patients.
Methods and Materials: A total of 142 women aged 18 to 85 years (mean age 57 years) with breast cancer were

questioned one day before and three months after operative treatment (modified radical mastectomy, mastectomy combined with sentinel node biopsy (SNB), quadrantectomy combined with lymphadenectomy, quadrantectomy combined with SNB or quadrantectomy) through questionnaires WHO DAS II, WHOQoL-8 and EORTC QLQ - BR23 between January and October 2009. Some of them were also receiving adjuvant therapy (radiotherapy - 39%, chemotherapy - 36%, hormone therapy - 50%) when indicated. The results of patients' interviews were statistically analysed using chi-square test ($p<0.05$).

Results: By April 2010 there were 96 patients who fulfilled questionnaires before and three months after treatment. There were 19% and 44% of breast cancer patients who reported problems in sexual life before surgery and three months after the surgery, respectively. The patients with sexual problems before surgery (reduced libido, reduced frequency of sexual intercourses, discomfort in sexual relations) were also more likely to report sexual problems three months after surgery. After surgical procedure 53 (55%) patients were discontent with their body, out of which 11 patients reported a very strong discontent with their body. Problems in sexual life of patients after surgery were associated with hormone therapy ($p = 0.036$), discontent with their body before and after surgery ($p = 0.010$) and the feeling of being less attractive ($p = 0.001$) and less feminine ($p=0.0001$). Higher proportion of patients who felt less feminine were treated with chemotherapy ($p = 0.039$) or had a larger extent of surgery ($p=0.038$). Higher proportion of patients who reported reduced interest in sexual relations after surgery were those who were treated with chemotherapy ($p = 0.041$) or had other diseases apart from breast cancer ($p = 0.01$). Patients under 50 more often reported having no sexual relations in the month before surgery than patients older than 50 ($p = 0.031$). There was no statistical correlation between the age above 60 and sexual problems. Reduced desire for sexual relations was found in patients above 60 years old and in younger ones in 22% and 6%, respectively.

Conclusion: Many breast cancer patients have changes in sexual life due to factors related to treatment. The patients who were younger, receiving hormone therapy or chemotherapy, had more problems in sexual life than older patients without the treatment mentioned above. Patients with presurgical sexual problems more often reported problems in sexual life three months after treatment.

Session: Gastroenterology

MACC1 induces colon cancer metastasis via controlling the HGF/Met pathway: Impact of Met mutations

ESC-ID: 488
Authors: Klockmeier K, Schmid F, Schlag PM, Stein U
Country: Germany
University: Freie Universität Berlin , Department: Biologie

In the Western world colorectal cancer is the second most frequent cancer. The metastatic dissemination of primary tumors is the reason for about 90% of the colorectal cancer deaths. Stein et al. (2009) identified a key regulator of the metastasis inducing HGF/Met (Hepatocyte-Growth-Factor/Met proto-oncogene) pathway: MACC1 (Metastasis-Associated in Colon Cancer 1). MACC1 induces migration, invasion and proliferation in vitro as well as metastases in xenograft mouse model. As a prognostic marker, it can be used to predict the risk of metastasis formation especially in early cancer stages. In about 80% of the examined cases, a high expression of MACC1 in tumors of stage l, II and lll correlates with the formation of metachronous metastases. Correct negative and positive predictions of MACC1 expression and metachronous metastasis are 78% and 74%, respectively. The HGF/Met pathway plays a decisive part in cellular growth, epithelial-mesenchymal transition, angiogenesis, cell motility, invasiveness and metastasis. Met expression is 2 to 50-fold higher in carcinomas than in normal tissues. Met is the transcriptional target of MACC1 and recent studies showed that gain of function Met gene mutations could induce metastasis. The aim of this study is to investigate the impact of Met mutations for the prediction of metachronous metastasis via MACC1. Therefore, primers were designed for the exons 14-19 of the Met gene which code for the juxtamembrane domain and the kinase domain. Studies showed that gain of function mutations were mainly found in these domains. The exons were amplified by PCR and PCR-products were purified and sequenced. Single Nucleotide Polymorphisms (SNPs) were identified by comparing the obtained sequences against the Met sequence of the human genome project (NCBI Database). Until now, the SNP T1010I was detected in the juxtamembrane domain which was already described as a gain of function mutation. SNPs were correlated to clinical data such as the UICC stages, the age of the patients, the sex, to the MACC1 expression level and finally to data of the clinical outcome.

The clinical application of the test on numerical sequences in the therapy of patients with hepatic and hypertensive encephalopathy

ESC-ID: 526
Authors: Baltabayev A, Ernazarov U
Country: Kyrgyzstan
University: Kyrgyz-Russian Slavonic University , Department: Medicine

Hepatic encephalopathy-is a complex of potentially reversible neuropsychiatric disorders arising as consequence of liver insufficiency and/or portal blood shunting. Hypertensive encephalopathy- the chronic progressive form of cerebrovascular pathology, characterized by development of ischemic brain damage, due to long period of arterial hypertension. The aim of study was to determine the speed of cognitive functions in patients with encephalopathy by using the test on the numerical sequence. With that end we examined 18 patients who had been divided into 2 groups. In first group there were 8 patients with hepatic encephalopathy, in second group-10 patients with hypertensive encephalopathy. The study was conducted three times: in the beginning, the middle and the end of treatment for definition of dynamics and efficiency of the current therapy. Except definition of a stage of encephalopathy(1 to 4) the laboratory data - level of bilirubin at patients with hepatic encephalopathy, and the level of blood pressure at patients with

hypertensive encephalopathy has been considered. We also considered the age, sex and duration of disease. As a result of the observing it was revealed that in patients with the diagnosed hepatic encephalopathy the test on numerical sequence was raised and on the average made at men 76,5 seconds, and at women - 125 seconds, at norm less than 60 seconds. The direct dependence of the stage of encephalopathy on age was also defined: at women the encephalopathy had more progressing character (56 year-3-4 stage), in comparison with the male subgroup (63 year-3 stage), that is undoubtedly connected with the duration of disease. Using additional hepatoprotectors at patients considerable improved the results of the test in comparison with initial. In the group with hypertensive encephalopathy increasing the time of the test on numerical sequence at patients with high level of blood pressure, duration of disease more than ten years, and age older than 45 years was also marked. Thus, this test applied in practice allows revealing not only encephalopathy stage, but also possibility of correction of the treatment and supervision of patients in dynamics, to raise efficiency of the treatment and quality of service of patients.

Clinicopathological characteristics of colonic carcinoma in relation to localization and histologic type

ESC-ID: 592
Authors: Skakic A, Djordjevic I, Mitic A, Tatic M
Country: Serbia
University: University of Nis , Department: Faculty of Medicine

It has been suggested that right-sided and left-sided colon cancer may arise by different mechanisms. However, there have been few studies of colonic carcinoma in relation to location.

Aim: We compared the clinicopathologic characteristics in relation to tumor location and histological type.

Methods: One hundred twenty-four patients who had undergone surgical treatment for colorectal carcinoma in the local hospital in 2009 were studied. Paraffin sections were stained with H&E, HID-AB (pH-2.5) and AB-PAS (pH-2.5) methods. The pathology report of a cancer resection specimens was documented the localization of malignancy, the histologic type, the histologic grade, and the parameters that determinate the tumor stage. Right-sided colon cancers were classified as tumors proximal to the splenic flexure and remaining tumors were defined as left-sided lesions.

Results: The incidence of carcinoma is higher in males (64.52%) than in females (35.48%). The highest number of carcinoma (77/124, or 62.10%) is located in the rectosigmoid colon. Most patients (57.26%) are in the seventh decade of life. Statistical analysis has not shown significant differences between of the right and left colon carcinoma in relation to sex, age, histological grade and tumor stage ($p > 0.05$), except in the histologic types ($p < 0.05$). The younger patients had greater preponderance of mucinous adenocarcinomas ($p < 0.05$).

Conclusions: The establishment of differences between right-sided and left-sided colon carcinoma demands to usage of separate prognostic parameters for the patients with carcinoma of the colon with different location. The formation of a unique information base with complete epidemiological, clinical and histopathological details would contribute to the success of treatment and postoperative follow-up of the patients with colon carcinoma.

Is eradication of helicobacter pylori sufficient for stomach cancer prophylaxis in peptic ulcer disease?

ESC-ID: 607
Authors: Mazur D, Semen K
Country: Poland
University: Danylo Halytsky Lviv National Medical University, Lviv, Ukraine , Department: General Medicine

Background: Helicobacter pylori colonization of the stomach is recognized strong risk factor for the development of gastric cancer; however, only a small proportion of infected individuals ultimately develops this malignancy. Controversy exists concerning the effects of eradication therapy on the carcinogenic risk in human, proving that not only microbial factor, but also the host responses, particularly potency of aerobic metabolism to withstand oxidative stress and adaptive potential of an organism, seem to be important in the progression of the H.pylori associated continuum. The aim of present research was to study the influence of eradication therapy on the histomorphological changes and level of 4-hydroxynonenal (HNE) in the gastric mucosa and parameters of heart rate variability (HRV) in patients with H.pylori associated duodenal peptic ulcer disease (DPUD).

Materials and methods: 40 subjects (mean age 32.1 ± 1.7 yy, 24 males, 16 females) with endoscopically proved DPUD were enrolled into the study. Infection with H.pylori was proved by rapid urease testing and histological evaluation of the gastric biopsy samples in all cases. Control group consisted of 40 healthy volunteers (mean age 29,7 ± 3,5 yy, 25 males, 16 females). Triple eradication therapy was administered to patients for seven days, followed by four-week course of 30 mg Lansoprazole. Before and four weeks after eradication patients underwent complex evaluation including clinical examination, endoscopy with gastric mucosa biopsy sampling and its histological study. Depth of oxidative stress in the mucosa of the antrum and corpus of the stomach was evaluated by the HNE level determined immunohistochemically. Functional metabolic potential of an organism was assessed by parameters of HRV.

Results: Our current study revealed that eradication of H. pylori improves clinical symptoms and dramatically reduces inflammatory cells infiltration of mucosa except of mononuclear infiltration observed in 28.6% one month after treatment completion. Immunohistochemical analysis revealed the presence of the HNE-histidine conjugates in gastric mucosa of DPU patients, as well as in control group. However, study group demonstrated more prominent accumulation of this oxidative stress marker in epithelial structures and, of note, its presence in nuclei of glandulocytes comparing to the control group. Eradication therapy was associated with persistence in initially high immunopositivity for the HNE-protein adducts in antrum and its further increase in stomach corpus. Decrease in adaptive potential in DPUD patients was demonstrated by lower time (SDNN, RMSSD, pNN50) and frequency (TP, VLF, LF, HF) domain parameters of HRV in

supine position, which were further reduced after eradication therapy.
Conclusions: Eradication therapy in H. pylori associated DPUD, although associated with reduction of clinical manifestations and inflammation, failed to reduce 4-HNE content in the gastric mucosa and to improve HRV, which might further increase risk of cancerogenesis in these patients. In our opinion, efficient stomach cancer prophylaxis requires standard eradication therapy to be complemented with antioxidant treatments aimed at improvement of functional metabolic potential of an organism.
Acknowledgement This work was supported by COST B35 Action „Lipid peroxidation associated disorders".

Prevalence of helicobacter pylori in patients with gastric precancerous lesions in Ilam, Iran

ESC-ID: 659
Authors: Abdolkarimi A, Alizadeh S, Cheraghi M, Soheili F, Yousefi A, Ehsanbakhsh S, Soroush S, Taherikalani M, Jaafarihaidarlo A
Country: Iran
University: Ilam university of medical science , Department: students research committee

Aim: Helicobacter pylori infection is an important cause of cancerous lesions in the gastrointestinal tract . Helicobacter pylori causes chronic non atrophic gastritis lesions initially, Then the waste can progress to atrophic gastritis and intestinal metaplasia and finally is converted to dysplasia and adenocarcinoma. The aim of this study is determined the prevalence of Helicobacter pylori in lesions and gastric precancerous ulcers and the relationship between them .
Materials and Methods: In this cross - sectional study, On patients referred to health centers in Ilam (2009) with gastrointestinal symptoms such as Dyspepsia, biopsy sampling method and endoscopy was performed. Samples of 91 patients with endoscopic had Gastric precancerous lesions . The samples were sent to pathology laboratory for determine the existence of Helicobacter pylori by UBT test and determining the type of lesion (chronic non atrophic gastritis , atrophic gastritis , intestinal metaplasia) by Sydney system.
Results: The mean age of participants in this project was 42.5 and Among these, 33% female and 67% were male. 96% of people had Helicobacter pylori infection. prevalence of Normal mocosa 0% , chronic non atrophic gastritis waste 6.6% , atrophic gastritis 93.4% Was observed, In atrophic gastritis samples, 5.6% had a gastrointestinal metaplasia.
Conclusion: Considering the high prevalence of Helicobacter pylori infection among people with Gastric Precancerous lesions and High risk of exposure to waste in patients with this infection (Odd Ratio = 2) , Seems to be effective treatment of infections become more malignant and cancerous lesions to be avoided.

Expression of bcl-2 oncoprotein in patients with alcoholic liver cirrhosis after autologous stem cell transplantation

ESC-ID: 676
Authors: Burganova G, Abdulkhakov S, Gumerova A, Gazizov I, Titova T, Odintcova A, Kiassov A
Country: Russia
University: Kazan State Medical University , Department: Department of Normal Anatomy

Background: Expression of anti-apoptotic protein Bcl-2 is considered as one of the signs of malignant transformation of cells. In many cases of chronic liver disease apoptosis is a significant mechanism of cell death, and very often the outcome of such diseases is primary liver cancer. Furthermore the possibility of tumor development as a result of stem cell (SC) transplantation is widely discussed recently.
Aim: In this regard the aim of our study was to investigate the effect of autologous hematopoietic SC transplantation on the expression of Bcl-2 in patients with alcoholic liver cirrhosis.
Materials and Methods: The study was performed on liver biopsies of 10 patients with alcoholic liver cirrhosis. Biopsies were taken before the injection of autologous peripheral blood stem cells mobilized by granulocyte colony-stimulating factor (G-CSF) into celiac trunk and 3 months after the procedure. Formalin-fixed, paraffin-embedded liver biopsy specimens were stained immunohistochemically with antibodies against Bcl-2.
Results: A significant number of Bcl-2-positive cells were found in liver biopsies before transplantation; they were localized in liver parenchyma and in inflammatory infiltrates around the portal tracts. In large infiltrates the number of Bcl-2-positive cells was the highest, positive cells could be divided into 3 types of cells: inflammatory cells with round or oval nucleus, cells with processes (sinusoidal cells) and single hepatocytes. Cells with processes were predominantly located in the parenchyma and in small infiltrates. We also observed weak expression of Bcl-2 in cholangiocytes. Three months after transplantation along with the improvement of liver structure expression of Bcl-2 diminished: in large infiltrates the number of Bcl-2-positive cells decreased, and in small infiltrates they disappeared.
Conclusions: These results might indicate a reduction of liver carcinogenesis risk as a result of SC therapy.
Acknowledgements: Our research was performed as a part of the Program «Development of Cell Medicine in Tatarstan» on the base of Republican Clinical Hospital.

Parallel analysis of endoscopic findings and pathohistological findings at chronic gastritis.

ESC-ID: 806
Authors: Hulali M, Vlajankov A, Popovic D
Country: Serbia
University: University of Novi Sad, Faculty of medicine , Department: Gastroenterology and hepatology

The aim: The aim of research is comparison between endoscopic findings and pathohistological findings at patients with diagnosis of chonical gastritis.
Material and Methods: At the Clinic of gastroenterology and hepatology, it was analised 100 patients with

chronic gastritis. From all patients was taken two standard cuttings from antrum and corpus of stomach, elaborated on Institute of pathology and histology. We analised a results of endoscopical and pathohistological findings, indications, gender and age of patients.
Results: It was evidenced frequency of female gender. Analising biopsies of antrum and corpus, it was observed that ph finding of atrophy, intestinal metaplasia are more frequent in ph biopsy findings of antrum and Helicobacter pylori infection in corpus. In examined sampler, totally presence of Helicobacter pylori infection presents 43% of cases, atrophy in 41% . The most frequency conjunction is ph findings of atrophy with ph findings of intestinal metaplasia. The most common classe of gastritis was erytematosis - exudativa. Researching a presence of associate findings, largest procent correspond to Hiatus hernia.
Conclusion: We have noting a high correlation between assigned diagnosis of atrophic gastritis with pathohistological findings, until the low correlation is noting between total endoscopic and total patohistological findings. Results that we got are inductive and tend on further comparatively analysis of endoscopic and pathohistological findings at chronic gastritis.

Serum leptin level in patients with gastric ulcer

ESC-ID: 826
Authors: Assefi M, Mina M, Behzad S, Saeed Gh, Lida M
Country: Iran
University: Iran university of medical sciences , Department: Gastroenterology

Background: Previous studies have shown that leptin plays a major role in the amount of food consumption. Recently leptin and its receptors have been found in the human gastric mucosa. Its secretion by gastric mucosa has generated interest in its probable role in the gastrointestinaltract and pathophysiology of diseases. On the other hand, changes in gastric and serum leptin levels in Helicobacter infected patients have been the subject of several investigations with controversial results. We aim to determine any possible correlation between serum leptin level and pathological findings in patients with gastric ulcer (GU).
Methods: In a cross-sectional study, 35 patients endoscopically-proven as GU were randomly selected and compared with 35age- and sex-matched healthy controls. From each participant a fasting blood sample for measurement of serum leptin level and anti-H pylori antibody IgG was taken. Two antral biopsies for evaluating the intensity of gastritis and H. pylori infection were also taken from patients with GU. All data were analyzed with SPSS 15. Values were expressed as mean ± SD. P values of less than 0.05 were considered significant.
Results: Serum leptin level was significantly ($p<0.001$) higher in patients with GU (11.60 ± 8.69 ng/ml) than normal group (3.97 ± 1.90 ng/ml).Leptin level also significantly ($p<0.05$) correlated with the presence of gastritis and H. pylori infection. There was no correlation between serum leptin level in GU patients and sex.There was no differences in prevalence of H pylori infection between the two groups.
Conclusion: An increase in serum leptin level in patients with GU may be a defense mechanism. There is a possibility that leptin accelerates ulcer healing.This is probably a defense mechanism related to the release of gastric leptin both into the lumen and circulation.Our findings may help in better understanding of the pathogenesis of GU which may lead to development of more effective treatments.

The effect of human umbilical cord blood stem cells on fibrosis in mice.

ESC-ID: 927
Authors: Elshaarawy O, Joe S, Mohamed F
Country: Egypt
University: Menofia University, Department: Internal Medicine

The aim of this study was to evaluate the effect of human umbilical cord blood stem cells on fibrosis induced by carbon tetrachloride and on liver functions in mice. Liver fibrosis is seen as scar formation and considered as a sign of hepatic injury in many chronic liver diseases. Currently there is no effective treatment available. Human Umbilical Cord stem cells contain stem/progenitor cells, which can differentiate into a variety of cell types. They can differentiate into hepatocytes in vitro and in vivo and can ameliorate fibrosis to great extent. Hepatic fibrosis was induced by carbon tetrachloride , human umbilical cord blood stem cells were infused systemically through the tail vein immediately (group 1) or after one week of receiving carbon tetrachloride (group 2) and group 3 received only carbon tetrachloride. Administration of carbon tetrachloride was continued for 10 weeks in group 1 ,2 and 3 while group 4 (control mice) received only saline infusion for 10 weeks . After that blood from all groups was collected for assessment of liver functions, then all mice were sacrificed under anesthesia and the liver was taken for histopathological examination. It was found that the level of alanine amino transferase (ALT) in mice treated with stem cells after carbon tetrachloride administration was significantly lower while serum albumin was significantly higher compared to group 3 mice who received carbon tetrachloride without stem cell treatment , whereas serum total and direct bilirubin levels were similar among all groups. Histopathological examination revealed that hepatic damage was less in the stem cell treated mice (group 1,2) than in non treated group (as regard the liver cell changes , portal tract inflammation , piecemeal necrosis, portal tract fibrosis and bridging fibrosis). The results were statically significant. However , liver inflammation and fibrosis were more in mice treated after 1 week than in immediately treated mice. The results suggest that human umbilical cord blood stem cells can improve liver function and ameliorate fibrosis in mice.

Apoptosis rate after selective thermolysis of hepatocarcinoma cell lines treated with bovine serum albumin conjugated carbon nanotubes

ESC-ID: 1007
Authors: Iorga O, Fustos T, Cozar O, Mocan L, Iancu C
Country: Romania
University: University of Medicine and Pharmacy „Iuliu Hatieganu“, Cluj-Napoca, 3rd Surgical Clinic

Aim: During our study we focused on albumin, one of the most widespread serum proteins, as a conjugation agent for carbon nanotubes. Considering that highly prolifera-

tive tumours present albumin deposits formation capacity, we saw a good potential for its usage as part of a carrier linked carbon nanotubes system. We demonstrated its superior apoptosis rates in comparison to the frequently used DNA conjugated multiple wall carbon nanotubes (DNA-MWCNT) when thermal ablation was applied to the treated hepatocarcinoma cells.
Methods and materials: We managed to conjugate multiple wall carbon nanotubes (MWCNT) with bovine serum albumin (BSA). We used 2 groups of Hep G2 cell lines, one treated with DNA-MWCNT and the other one treated with BSA-MWCNT. The conjugated carbon nanotubes were administered to the cell lines in different concentrations and were incubated for different periods of time. Afterwards the 2 groups of treated liver cancer cells were irradiated for 2 minutes using 2W of power laser at 808 nm. The confocal microscopy was used to verify the internalization of the BSA-MWCNT and DNA-MWCNT into the hepatocarcinoma cell lines.
Results: The conjugation of the BSA and the carbon nanotubes was confirmed by atomic force microscopy analysis. The ability of the BSA-MWCNT to internalize within the Hep G2 cell lines was proven using confocal microscopy imaging. The apoptosis rate of the Hep G2 cells treated with 50 mg/l of BSA-MWCNT post-irradiation was of 88.24% at 60 seconds while at 30 minutes it increased up to 92.34%. The results for the second group of cell lines that was treated with 50mg/l of DNA-MWCNT were of 64.32% at 60 seconds and of 70.78% at 30 minutes.
Conclusions: As we know it, this is the first demonstration of improved selective thermal ablation of liver cancer cells using BSA-MWCNTs by comparing it to the efficiency of DNA-MWCNTs. The results represent a breakthrough in the in vitro complete eradication of cancer cells using thermal irradiation targeted on hepatocarcinoma cell lines that internalized carbon nanotubes. However, in vivo experiments must be performed to establish a valid treatment protocol for malignant liver tumours.

Comparison of abdominal paracentesis and diuretics in terms of overall efficiency in ascites therapy

ESC-ID: 1011
Authors: Mavija S, Vukadinovic G, Kremenovic M
Country: Bosnia-Herzegovina
University: University of Banja Luka , Department: Department of gastroenterology

Aim: Ascites is the fluid accumulated in the peritoneal cavity under the influence of various factors. Treatment of ascites is among the most complicated therapeutic procedures. Ascites is still diagnosed and treated by no standardized criteria. Treament of ascites in any single patient depends on the circumstances that had led to its accumulation. In the clinical practice therapy of ascites is mostly unsatisfactory and followed by numerous complications. The objective of the research is to make a comparison of the treatment outcome efficiency of ascites by abdominal paracetesis as opposed to diuretics treatment.
Method: Study researched 60 patients admitted for ascites in stages 3+ and 4+. Research was conducted according to type of prospective study in the period of two years. In accordance with the stated objectives patients were divided into two equal groups. The first group of patients was treated with abdominal paracentesis wich were performed three times a week and app 4 liters of ascites were evacuated. Patients did not receive diuretics in between each paracentesis. Second group of patients was treated by diuretics, either as mono-therapy or as combined. Therapeutics efficiency was observed through therapy endurance, effect of applied method, duration of therapy, and overall grading of ascites treatment outcome.
Results: The group treated by abdominal paracentesis achieved significantly better treatment effect ($p<0,05$), had a shorter period of hospital admission ($p<0,01$), and better overall efficiency grading in relation to patients treated by diuretics ($p<0,05$).
Conclusion: The study shows that abdominal paracentesis should be included in the first line of treatment of ascites in the phases 3+ and 4+ because of its greater clinical benefit , shorter hospitalisation period and dramatic reduction of hospitalization expanses.

Low dose ribavirin for treatment of thalassemia major patients with hcv infection; new Indications for Combination Therapy

ESC-ID: 1346
Authors: Tabatabaei SV, Mahboobi N, Khazane Dari S
Country: Iran
University: Baqiyatallah University of Medical Science , Department: Research Center for Gastroenterology

Background and aims: Treatment guidelines generally contraindicated the use of ribavirin for treatment of hepatitis C virus (HCV) infection in patients with thalassemia major. The Current evidence suggests that ribavirin may be tolerated by these patients. However, low dose ribavirin combination therapy and peginterferon monotherapy have not been compared in these patients.
Material and methods: 280 thalassemia patients with detectable HCV-RNA PCR (≥50 IU/mL) and liver histology consistent with chronic HCV infection were self-assigned to undergo treatment with peginterferon alpha-2a (n=81) or combination therapy with ribavirin 600-800 mg QD according to the hemoglobin levels (n = 199).
Results: sustained virological response (SVR) was significantly more common in patients who received ribavirin (51% vs. 38% P=0.02). In multivariate regression OR of ribavirin for SVR was 2.3 (95% CI 1.1-4.5). In the following subgroups, SVR was significantly higher in the ribavirin group; age ≥24, elevated ALT, ferritin<2006 ng/mL, previous treatment failure, genotype 1, the splenectomized, fibrosis score 0-4 HAI, viral load <600,000 IU/mL. The treatment discontinuations due to safety concerns were comparable between the treatment groups (6.5 and 8%). The transfusion interval almost halved in patients who received low dose ribavirin.
Conclusion: thalassemia patients with HCV infection can be treated successfully with low dose ribavirin. We strongly advise combination therapy with ribavirin in thalassemia patients with aforementioned clinical characteristics.

The value of video-endoscopic capsule in the small bowel Crohn`s disease diagnosis

ESC-ID: 1400
Authors: Navala LI, Nechita AN, Muresan EM, Nedelcut DS
Country: Romania
University: UMF ``Iuliu Hatieganu`` Cluj-Napoca, Romania , Department: General Medicine

Aim Determining indications of video-endoscopic capsule examination at suspected small bowel Crohn`s disease patients and of the suggestive lesions specificity.
Methods and Materials: We realized a retrospective, analytical and observational study on a lot of 31 patients suspected of Crohn's disease on clinical criteria (diarrheic syndrome or pain), biological criteria (inflammatory), imagistic or pathological criteria (biopsy). We defined clinical/biochemical or imagistic criteria associations for identifying the justification of video-endoscopic capsule examination. We identified most suggestive lesions for patients in which Crohn`s disease was confirmed (erosions, ulcers, sores, stenosis, areas of edema and eritema).
Results: Video-endoscopic capsule examination was indicated in 31 patients for Crohn`s disease suspicion. Final diagnosis was sustained in 61% of patients. If the indication was made purely on clinical criteria the diagnosis was found in 57%. Video-endoscopic capsule sensibility of significant lesion detection is over 70% if here were added inflammatory syndrome and imaging or biopsy evidence. Most significant lesions were thrush (83.3%), stenosis (88.8%).
Conclusions: Indications of video-endoscopic capsule examination should be based on more than the clinical criteria. Stenosis lesions are most suggestive.

Session: Gastroenterology / Endocrinology POSTER

Non-alcoholic fat liver disease in obese and prediabetic patients

ESC-ID: 518
Authors: Petrovic H, Stojanovic M, Stamenkovic A, Sreckovic-Dimitrijevic V
Country: Serbia
University: University of Belgrade , Department: School of Medicine

Background and Aims: Hepatic fat accumulation in obesity is associated with increased visceral fat and insulin resistance (IR). IR results in fat deposition in the liver and occurrence of non-alcoholic fat liver disease (NAFLD). Aims of this study were to research the frequency of NAFLD in obese and impaired glucose tolerance (IGT) patients, as well as its connection with visceral obesity and lipid disorders.
Methods: The study included 312 obese individuals (age over 45, body mass index (BMI) > 25 kg/m2) who, after proceding to 75g glucose OGTT test, were classified into two groups: I-obese (214) and II-IGT (88); OGTT included 0, 30 and 120 minutes glycemia. Anthropometric parameters measured were waist circumference (WC) and BMI. Lipid status was determined by total cholesterol, HDL-cholesterol, LDL-cholesterol, tryglicerides spectrophotometry. HbA1C was determined by spectrophotometry. SGOT, SGPT, SGPT/SGOT ratio and (-GT were liver function parameters. Increased SGPT and SGPT/SGOT ≥ 1 were used as NAFLD criteria. Liver ultrasonography was used to diagnose NAFLD.
Results: Obesity parameters found were as follows: waist circumference (WC): I-103.1 ± 15.3, II-100.5 ± 16.4, cm; body mass index (BMI): I-33.6 ± 16.2, II-31.8 ± 6.7%. Blood pressure, glycemia, HbA1C, lipid status values followed the progression of disorders: Blood pressure: I-131.1 ± 17.7/84.9 ± 12.4, II-137.7 ± 17,5/86.3 ± 10.8 mmHg; Glycemia: I-5.1 ± 0.68, II-6.0 ± 1.1 mmol/l; HbA1C: I-5.53 ± 0.64, II-5.8 ± 0.54%; Cholesterol: I-6.1 ± 1.2, II-6.2 ± 1.1; HDL-cholesterol: I-1.27 ± 0.33, II-1.34 ± 0.34; LDL-cholesterol: I-4.0 ± 1.0, II-3.92 ± 1.0; Triglycerides: I-1.98 ± 1.1, II-2.14 ± 1.5mmol/l. NAFLD was found in 7.5% IGT patients and 11.9% obese patients. SGPT/SGOT was higher in obese (1.88 ± 0.45) than in NAFLD (1.58 ± 0.42) patients. Patients with NAFLD had increased BMI (36.4 ± 6.4kg/m^2), WC (112.6 ± 11.2cm), cholesterol (6.2 ± 1.2 mmol/l), LDL-cholesterol (3.9 ± 1.0mmol/l), triglycerides (2.14 ± 1.1mmol/l), SGPT (61.4 ± 13.2U/l), SGPT/SGOT ratio (1.81 ± 0.41), (-GT (52.2 ± 13.4U/l). Patients without NAFLD had normal SGOT, SGPT, (-GT and increased BMI (32.8 ± 5.2kg/m2), WC (101.2 ± 10.cm), cholesterol (6.1 ± 1.1 mmol/l), LDL-cholesterol (3.9 ± 1.0mmol/l) and triglycerides (1.9 ± 1.0mmol/l), but lower than in presence of NAFLD.
Conclusion: Patients with NAFLD were characterized by pronounced obesity (monitored through BMI and abdominal obesity), lipid status disorder, and increased SGPT, SGPT/SGOT ratio and (-GT. Mediterranean diet and physical activity can be useful for reducing obesity and improving lipid status and glycoregulation; this will result by NAFLD normalization.

The role of history, physical examination and the evaluation of fecal calprotectin in the Diagnosis of Irritable Bowel Syndrome

ESC-ID: 604
Authors: Nakov R, Tsekova R, Nakov V
Country: Bulgaria
University: Medical University of Sofia , Department: Medical Faculty

Introduction: Irritable Bowel Syndrome (IBS) is the most common functional gastrointestinal disorder. Its high prevalence makes it a problem comparable with the social diseases. Various statistics show that it affects approximately 15% of the population in the developed countries. The determination of the diagnosis IBS is one of the most difficult in the medicine and its correctness is often a challenge for the physician. Recently, the evaluation of fecal calprotectin (FCP) was suggested as a novel, non-invasive, cheap and simple method for distinguishing IBS from the organic gastrointestinal disorders.
Aim: Our aim is to determine the role of history, physical examination and the evaluation of FCP in the diagnosis of IBS.
Materials and Methods: This study enrolled 16 patients (12 females and 4 males ; age range 19-67, median 39), with IBS-like symptoms , hospitalized in our clinic for

the period from the 20th of October 2009 to the 21st of February 2010.The patients underwent the following diagnostic evaluations in clinical conditions: blood count and biochemistry, microbiological and parasitological examination of the feces, hydrogen breath test, abdominal ultrasonography, fibrogastroscopy and fibrocolonoscopy with staging biopsy. The diagnosis IBS was concluded on the basis of rejection of organic disease with these methods. In all patients, we took detailed history, we made physical examination and evaluation of FCP with Quantum Blue Rapid Test.
Results: In all the patients was found a presence of the Rome III criteria and absence of any „alarm" features. The persistent abdominal pain was an indication for hospitalization in 7 (44 %) of them, while diarrhea in 6 (37,5%). Cancerophobia was observed in 5 (31%) participants. The history showed that the patients' complaints were exclusively during the day. In 12 of the patients (75%) was found an exacerbation of the symptoms by life events. Disappearance of the complaints in all of the patients in our study group, using moderately alcohol was noticed - 9 (56%) Irregular sexual life and sexual disorders were found as a conditions exacerbating the symptoms in all younger women -7 (44%).The physical examination found a tense face expression and uneasiness in the eyes of 10 participants (62,5%). Tenderness over the colon was noticed in 14 patients (87,5%), and spasmodically contracted sigma in 4 (25%).The results from the evaluation of FCP in all the patients were below the accepted cut-off level of 50 mcg /g . The normal values of FCP practically exclude a bowel inflammation and in some cases a colorectal cancer.
Conclusion: We believe that a detailed and correct history that meets the Rome III criteria (with absence of „alarm" features) , presence of the mentioned findings from the physical examination and the normal values of FCP with a great certainty prove the diagnosis IBS. Unnecessary, expensive, invasive and burdensome for the patient examinations can be avoided, if the evaluation of FCP is used more frequently.

Long term insulin therapy in patients with type 2 Diabetes Mellitus induces an important weight gain

ESC-ID: 752
Authors: Khaja Roman S, Joseph DJ
Country: Romania
University: Victor Babes University Of Medicine And Pharmacy Timisoara , Department: General Medicine

Background and aims: Insulin therapy improves glycemic control in patients with type 2 diabetes mellitus (DM), but may lead to important weight gain. The purpose was to study, on long-term (8 years), the weight behaviour of patients with type 2 DM, started on insulin, and to find the factors that influence it.
Patients and methods: Study group composed 118 patients, 52 male (44.1%) and 66 female (55.9%), mean age ± SD 57.2 ± 7.1 years (range 34-73 years), were started on insulin due to poor glycemic control. Body weight and therapy of patients were followed. Statistical methods used were unpaired t-test, linear regression and ANOVA. Threshold for statistical significance for p was considered 0.05.
Results: Mean weight increased significantly, with 9.7 ± 8.1 kg, from 78.1 ± 12.7kg to 87.8 ± 11.9kg ($p < 0.0001$). Weight increase maximal in first year of therapy (4.4 ± 6.1 kg). According to weight behaviour there are 4 subgroups: 1)Constant weight or weight loss (n=12, 10.2%); 2)Increase <5% from baseline body weight (n=18, 15.3%); 3)Increase 5-10% (n=20, 16.9%); 4)Increase >10% (n=68, 57.6%). Weight gain more important in women than men (16.3 ± 11.6% vs. 10.1 ± 12.6%, p=0.0545). Age didn't influence weight increase (r=0.02, p=0.87). Baseline weight and weight gain had a significant indirect correlation (r=-0.58, $p < 0.0001$). Ponderal status influenced further evolution (increase of 25.6 ± 13.2% vs. 13.2 ± 12.5% vs. 9.3 ± 8.8%, respectively, p=0.004). Insulin dose (IU/kg) influenced significantly weight increase (r=0.3654, p=0.0044), but regimen didn't seem to have an impact (13 ± 12.8% in patients receiving 2/3 injections vs. 14.1 ± 12% in case of 4 injections, p=0.75).
Conclusions: Weight behaviour was heterogeneous, most presented significant weight gain in time with maximum in first year of therapy. Weight increase is directly correlated with insulin dose and inversely with baseline weight. Risks and benefits have to be weighed before initiating therapy and evolution thoroughly monitored, to prevent important weight increases that diminish benefits of insulin.

In vivo molecular imaging of VEGF in gastrointestinal cancer using confocal laser endomicroscopy

ESC-ID: 770
Authors: Foersch S, Kiesslich R, Waldner MJ, Galle PR, Neurath MF, Goetz M
Country: Germany
University: Johannes Gutenberg-University , Department: I. Medical Clinic

Introduction: Vascular endothelial growth factor (VEGF) is a promising therapeutic target in colorectal cancer (CRC). However, its in vivo visualization in CRC could not be achieved so far with standard endoscopic techniques. Confocal laser endomicroscopy (CLE) is a novel imaging technique for GI endoscopy in humans and animal research providing in vivo microscopy at subcellular resolution at real time. Aim of the current study was to evaluate CLE for in vivo molecular imaging of VEGF in different models of CRC (in vivo immunohistology).
Methods: Tumors were visualized in APCmin mice (n=22), in a nude mouse xenograft model after tumor induction with human CRC cell lines (n=11) and in surgical specimens of CRC-patients (n=13). VEGF was targeted with fluorescence-labeled antibodies injected i.v. in mouse models or after topical application in human specimens. In vivo tumor morphology was achieved with acriflavine staining (n=5). From all tumor sites examined with CLE in vivo, tissue specimens were obtained for correlation with histology (H and E), immunohistochemistry (IHC), and fluorescence microscopy. C57BL/6 mice (n=3) and tumors treated with isotype IgG (n=2) served as negative controls. Injection of excess unlabeled AB resulted in inhibition of VEGF specific signal.
Results: A VEGF-specific signal was visualized in vivo in 13/15 APCmin mice and in 6/7 human xenograft tumors

and correlated with VEGF expression in IHC and benchtop fluorescence microscopy. CLE even enabled to display the cytoplasmatic distribution of VEGF due to its subcellular resolution. In APCmin mice, a weak specific signal was observed in healthy mucosa in close proximity to the tumor whereas distant areas were VEGF-negative. In human tissue, 8/8 malignant specimens showed VEGF staining by CLE, whereas only 1/5 samples from healthy mucosa from the same resection specimens was positive ($p<0.03$). In vivo findings by CLE correlated well with ex vivo microscopy.
Conclusion: In vivo molecular imaging with specific targeting of VEGF is possible in murine tumors, human xenografts and human tissue specimens using CLE. Intravital immunohistological discrimination between neoplastic and healthy tissue was possible based on its molecular fingerprint. Since CLE with similar probes can be performed in human colonoscopy , in vivo molecular imaging is transferable to molecular stratification of patients with CRC during ongoing colonoscopy even today. CLE could thus contribute to the identification of lesions at risk and potentially predict response to targeted therapy.

TPO antibodies during Graves-Basedow disease therapy

ESC-ID: 874
Authors: Ostojic M, Romana M
Country: Serbia
University: University of Novi Sad , Department: Department of pathophysiology

Introduction: During Graves-Basedow disease antibodies to thyroglobulin (Tg), thyroid peroxidase (TPO), and TSH receptor are produced. Importance of these antibodies estimation due to follow up of the disease course and the therapy outcome has not yet been clarified.
Aim of this study was to compare values of TPOAb in patients with Graves Basedow disease treated with radioiodine therapy (RAI Th) and those once treated with medicamentose thyrosupressive therapy (MTh) and to evaluate connection between TPOAb levels and indicators of thyroid gland function.
Material and methods: We investigated 15 female patients with Graves-Basedow disease treated with radioiodine therapy and 15 female patients treated with medicamentose thyrosuppressive therapy. 15 healthy sex and aged matched women were control group. Levels of TT3, TT4, TSH and TPOAb were measured by electrochemiluminescens immunoassay using Elecsys 2010. These parameters were estimated before treatment and after three months. The results were analysed by standard statistical methods.
Results: Basal values of TPOAb in both patients groups were significantly higher compared to the controls. TPOAb values decreased after three months of MTh (332,19 vs. 270,41 IU/mL) while after radioiodine therapy values of TPOAb increased (814,35 vs. 1579,35 IU/mL). There were no significant correlations between TPOAb levels and thyroid gland function indicators.
Conclusion: Course of TPOAb during MTh and RAI Th indicate importance of TPOAb estimation due to evaluation of disease course and the therapy outcome. An absence of correlation of TPOAb and TSH values points out that we can`t use TPOAb values to assess functional state of thyroid gland.

Analysis of the facts that have influence on the eradication of Helicobacter pylori infection

ESC-ID: 979
Authors: Stulic M, Stefanovic M, Suvajac J, Culafic DJ
Country: Serbia
University: University of Belgrade , Department: Clinic for gastroenterology and hepatology

Introduction: Since 1983, when Helicobacter pylori was discovered, attracted great interest of professional public, both because of its high prevalence, and because of connection with numerous diseases of gastointestinal tract.
Aim: The aim of our study was to explore factors that have influence on eradication of Helicobacter pylori infection.
Methods and materials: Our study is a retrospective study of intersection. The sample included 52 patients. Criteria for inclusion of patients in this study was diagnosis of Helicobacter pylori infection. Patients were divided into two groups, first group included 15 patients in whom eradication was achieved, and the second group, 37 patients in whom treatment was not successful. We analyzed the following parameters: connection between sex and age with the infection, symptoms (pain in the upper part of abdomen, bloating, nausea, vomiting, heartburn), duration of symptoms (less than 6 months, between 6 months and one year, more than a year, many years), method of diagnosing infection, endoscopic findings (gastritis chronic, bulbus duodenal ulcer), used therapy, duration of therapy.
Results: The average age of patients in the first group was 51 ± 12 years, and in second one 50 ± 13 years. The most common symptoms in both groups of patients were pain (86.7% of patients in the first group and 83.8% in the second group) and bloating (60% of patients in the first group and even 91.9% in the second one). The biggest difference between the two groups of patients was length of symptoms. In the first group, 80% of patients had symptoms for less than a year, while in the second group, where treatment was not successful, even 78.3% of patients had symptoms for more than a year, and 43.2% for many years ($p<0.01$). Analysis of other parameters was not statistically significant.
Conclusion: Our study shows that duration of symptoms is parameter that had the biggest influence on the outcome of therapy. Therefore, in patients with symptoms lasting longer than one year, the combination of different antibiotics and their longer use, lasting from 10 - 14 days, as opposed the standard recommended 7 days, should be the first line therapy.

Differentiation of benign from malignant induced ascites by measuring gall bladder wall thickness

ESC-ID: 994
Authors: Behmagham E, Mohamadi A, Mohammadifar M, Behrozian R, Sadredini M, Ghasemi-rad M, Mirzaie A
Country: Iran
University: Urmia medical univercity , Department: urmia's student research committee

Background: Among the causes for ascites, are the two kinds, the cirrhotic and malignant ascites, for both of which conventional diagnostic method is paracentesis .This method is invasive and time consuming. However, Sonography is an easily available method for providing valuable results in a short period of time. The aim of this study is to survey the reliability of measuring gallbladder wall thickness to discriminate between cirrhotic and malignant ascites.
Materials and Methods: In our study the gallbladder wall thickness was measured by Ultrasonography in 100 patients with portal hypertension induced ascites and in 100 patients with peritoneal carcinomatosis induced ascites. This study was performed to evaluate the gallbladder wall thickness by using 3.5-5 MHZ curve linear ultrasound probe.
Results: Gallbladder wall thickness was 3.948 ± 0.6984mm in cirrhotic patients and 2.268 ± 0.627mm in non-cirrhotic patients. Gallbladder wall thickening was significantly more in patients with cirrhotic ascites than in patients with non-cirrhotic ascites (p-value<0.001.)
Conclusion: This study revealed that the ultrasound finding of gallbladder wall thickening in patients with ascites is highly predictive for portal hypertension induced ascites.

Experimental approach of pancreatic cancer cell lines using biofunctionalized single wall carbon nanotubes

ESC-ID: 1001
Authors: Fustos T, Iorga O, Cozar O, Mocan L, Iancu C
Country: Romania
University: „Iuliu Hatieganu“ University of Medicine and Pharmacy, Cluj-Napoca, Department: 3rd Surgical Clinic

Aim: In our study we have tested the nanophotothermolytic effect of laser irradiation on human pancreatic cancer cell lines (PANC-1) treated with single wall carbon nanotubes (SWCNT).
Materials and methods: For our study we used PANC-1 pancreatic cancer cell lines that were divided into 3 groups. The first group was considered to be the control group and was not treated with nanoparticles. The second group was treated with SWCNT functionalized with DNA (DNA-SWCNT), while to the last one we administered SWCNT functionalized with epidermal growth factor (EGF-SWCNT). We verified the viability of the cells and the citotoxicity of the nanotubes by using Trypan Blue dye and counted the cells with a hemocytometer. The PANC-1 cells were treated with 1mg/l, 5mg/l, 20mg/l and 50 mg/l of nanoparticles and were incubated afterwards for 30 minutes, 1 hour, 2 hours, 3 hours, 5 hours and 24 hours. The pancreatic cancer cells were further irradiated using a laser source operating at 808 nm and 1w/cm2 for a continuos time of 2 minutes.
Results: The internalization of the nanotubes was demonstrated by optic microscopy and it was proven that the phenomenon which determined the uptake was cellular endocytosis. At concentrations of 1mg/l and 5mg/l of nanoparticles and after an incubation time of less than 5 hours the internalization rate was higher for the EGF-SWCNT than for DNA-SWCNT. Analyzing the global results we observed an increased apoptotic rate for the EGF-SWCNT treated cells at all concentration levels and for all the incubation intervals. The apoptotic rate after irradiation for the minimal concentrations of 1mg/l of EGF-SWCNTs was 87.24% at 3 hours, 94.9% at 5 hours with a peak of 100% at 24 hours. Meanwhile for the 1 mg/l DNA-SWCNT treated groups at 3 hours the apoptotic rate was of 29.11%, at 5 hours of 37.5% and at 24 hours of 52.2%. The irradiation of the first group had no effect on the apoptotic rate.
Conclusions: Consistent with this findings we observed that the irradiation of PANC-1 cell line with EGF-SWCNT is a viable method of cancer treatment in vitro, being efficient in inducing selective apoptosis with a low level of citotoxicity. This results encourage us to extend our research regarding nanotechnology to new in vitro and in vivo models.

GATA6 regulates colonic cell proliferation and differentiation

ESC-ID: 1126
Authors: Tran LMD, Beuling E, Krasinski SD
Country: The Netherlands
University: University of Amsterdam , Department: Medicine

Introduction: Colonic epithelium regenerates rapidly, with pluripotent stem cells yielding three principal cell types: colonocytes, goblet cells and enteroendocrine cells. While little is known about factors determining cell fate in the colon, our previous intestinal models suggest involvement of transcription factor GATA6. Intestinal deletion of Gata6 in mice causes decreased proliferation with striking changes in ileal differentiation: Paneth precursors fail to mature and default to goblet-like cells. Since GATA6 is expressed throughout the gastrointestinal epithelium, we hypothesized that GATA6 also regulates proliferation and differentiation in the colon.
Material and methods: Inducible, intestine-specific Gata6 deletion was produced in Gata6loxP/loxP, VillinCreERT2-positive mice (n=8 per group), from which colon samples were collected for sectioning and RNA isolation. Protein and gene expression analysis was carried out by immunohistochemistry/-fluorescence and real-time reverse transcriptase (RT)-PCR respectively. Data as mean ± SD; analyzed by two-tailed Student's t test.
Results: Intestinal Gata6 deletion resulted in a 40% decrease in number of cells positive for proliferation markers Ki67 and bromodeoxyuridine per colonic cross section (P<0.001). Of the key transporters and enzymes identified in colonocyte function, expression of the sodium hydrogen exchangers NHE2 and NHE3, and the enzyme carbonic anhydrase (Car)1 was down-regulated (P<0.05), yet Car2 and anion exchangers 1 and 2 remained unchanged. Furthermore, the mRNA abundance of goblet cell marker mucin 2 was reduced by 64% (P<0.01). The enteroendocrine cell population exhibited several shifts

in sub-lineages, of which the loss of glucagon- and doubling of peptide YY-producing cells was most obvious (P<0.01).
Conclusion: GATA6 regulates organ and cell type specific differentiation, activating particular colonocyte genes, while directing sub-lineage commitment of colonic enteroendocrine cells. Proliferation is significantly compromised in both the small intestine and colon lacking Gata6. These data support the idea that GATA6 might be an intestinal oncogene and candidate target for future treatment strategies against GATA6-dependent malignancies.

Influence of intracerebroventricular application of ghrelin on inflammation in blood and heart in the rat models of obesity and malnutrition.

ESC-ID: 1171
Authors: Prica M, Ivkovic I, Prijovic B, Stojanovic M, Trajkovic V
Country: Serbia
University: University of Belgrade , Department: Faculty of medicine

Introduction: Ghrelin is a principal orexigenic peptide hormone that plays, together with leptin, central role in regulation of food intake and pathophysiology of obesity. Obesity and starvation are conditions that change immune responses, and it is interesting to investigate relations between ghrelin and inflammation. While direct immunosuppressive effects of ghrelin on the immune cells have previously been reported, the effects of central application of ghrelin on immune system have not been investigated yet.
Aim: To investigate if intracerebroventricular (ICV) application of ghrelin has influence on inflammation in the rat models of obesity and malnutrition.
Matherials and methods: Our investigation included 36 4-week old male Wistar rats divided into three groups according to dietary regime: 1. normal (normally fed - NF, body mass 219.7 ± 9.2 g); 2. starved (food-restricted - FR, 111,1 ± 3,2 g); 3. obese (high fat diet – HF, 316,4 ± 16,4 g). After intracerebroventricular cannulation, 6 rats from each group were treated with ICV ghrelin (1 μg daily) for 5 days, while other 6 animals received the same amount of phosphate-buffered saline (control). After the animals were sacrificed, blood, heart and hypothalamic tissues were prepared for analysis. Immunoblot assay was used for detection of AMP-activated protein kinase (AMPK) activity in hypothalamus. ELISA was performed for quantification of serum levels of pro-inflammatory and anti-inflammatory cytokines (TNF, IL-1, IFN-gamma and TGF-beta), corticosterone and ACTH. RT-PCR was used for detection of mRNA for pro-inflammatory and anti-inflammatory cytokines (TNF, IL-1, IFN-gamma and TGF beta) in the heart tissue.
Results: Hypothalamic AMPK activity was reduced in HF and increased in FR group compared to control. ICV application of ghrelin increased the AMPK activity in the hypothalamic tissue of NF and HF rats, but did not affect already augmented AMPK activation in FR group. The serum levels of proinflammatory cytokines (IFN-gamma, TNF, IL-1) were higher in starved rats compared to control group, while only anti-inflammatory TGF-beta was increased in obese rats. ICV ghrelin significantly reduced serum concentrations of proinflammatory cytokines in FR group without affecting TGF-beta levels. Production of ACTH and corticosterone was increased in both obese and starved rats, with the highest levels observed in the latter group. ICV ghrelin caused further increase in both ACTH and corticosterone serum levels in FR, but not in HF group. Finally, an increase in pro-inflammatory cytokine (TNF, IL-1, IFN-gamma) mRNA concentrations was observed in the heart tissue of both starved and obese rats, but ICV application of ghrelin failed to affect mRNA levels in either group.
Conclusion: While the ICV application of ghrelin did not affect local inflammation in the hearts of either starved or obese rats, it significantly reduced systemic inflammation, measured by increase in pro-inflammatory cytokine levels in the blood of starved rats. The observed anti-inflammatory effect of ghrelin was independent of hypothalamic AMPK signaling, and probably mediated by increase in ACTH production and subsequent release of an immunosuppressive hormone corticosterone. Results of this study indicate that ghrelin might be useful in treatment of malnutrition-associated inflammation, such as that seen in cancer cachexia.

Correlation of thyroid autoantibodies and sonographical image in pregnant and non-pregnant women with history of spontaneous abortion

ESC-ID: 1181
Authors: Bartakova J, Jiskra J, Potlukova E
Country: Czech Republic
University: Charles University in Prague, Faculty of Medicine, Department: Faculty of Medicine

Introduction: Autoantibodies against thyroperoxidase (TPOAb), thyroid ultrasound (US) and laboratory assessment of thyroid function are crucial in the diagnostics of autoimmune thyroid disorders (AITD). The aim of this project was to analyse the relationship between TPOAb and US findings in pregnant women and in women after spontaneous abortion (SpA).
Methods: Using a self-developed classification system for semi-quantitative assessment of thyroid disorders we analysed data of 186 pregnant women screened positive for thyroid disorders during first trimester of pregnancy and 119 women with history of recent early SpA. Statistical analysis was performed using Chi-square, Mann-Whitney and ANOVA tests.
Results: Nearly half of the positively screened pregnant women had normal thyroid US (86/186, 46.2 %); thyroid nodules were found in 34 (18.3 %) and US signs of AITD in 66 (35.5 %). More than half of the TPOAb-positive pregnant women had normal thyroid US (71/131, 54.2 %). However, normal thyroid US was found only in 2/12 (16.6 %) of TPOAb-positive women after SpA (p=0.029). Pregnant women with pathological thyroid US had significantly higher serum concentrations of TPOAb compared to women with normal US (1487 kIU/l vs. 354 kIU/l; p<0.001). Furthermore, pregnant TPOAb-positive women with US signs of AITD had a higher frequency of premature delivery compared to women with normal thyroid US (9/60; 15,0 % vs. 2/71; 2.8 %; p=0.029).
Conclusions: TPOAb-positivity correlates better with US image in women after SpA than in pregnant women. US is not sufficiently sensitive for AITD screening in

pregnant women. However, it seems that the combination of TPOAb-positivity and pathological US image might carry an increased risk of premature delivery.

Role of yoga-asanas and pranayama on BMI in type II diabetes

ESC-ID: 1272
Authors: Munish K, Sachdeva M, Kyizom T, Singh KP,Singh S
Country: Bulgaria
University: Medical University - Pleven , Department: Medicine

Yoga is assuming importance in the treatment of Lifestyle diseases (Diabetes Mellitus, Obesity, Hypertension, Coronary Artery Disease) and also in the improvement of mental health and Quality of Life with obesity being an integral part of the Lifestyle disease. Body Mass Index (BMI) is currently the primary focus in Obesity treatment. Present study was conducted to explore short term impact of comprehensive but brief lifestyle intervention in the form of yoga on BMI of Type II Diabetes, which is a chronic metabolic disease caused due to peripheral resistance to insulin. 43 patients of uncomplicated Type II Diabetics were recruited from the Medicine OPD of Guru Teg Bahadur Hospital, Delhi. On the basis of current medical Obesity guidelines of India, the patients were divided into two groups- Obese group (n=34, BMI 25) and Overweight group (n=9, BMI 23-24.9). Both the groups performed yoga-asanas and pranayamas for one hour everyday under the guidance of a yoga instructor for a duration of two months and their respective BMI were calculated once again. Statistical analysis using paired t-test showed a significant fall in BMI in the Overweight group from 23.8 ± 0.5 to 22.63 ± 1.04, p =<0.05 and Obese group from 27.8 ± 3.61 to 26.06 ± 3.58, p ≤0.05. These observations suggest that yoga leads to a remarkable improvement in BMI of obese and overweight Type II Diabetics, thereby making an appreciable contribution to the primary prevention as well as in the management of Lifestyle diseases.

Assessment of Gastrointestinal disorders in renal transplantation reciepients

ESC-ID: 1361
Authors: Hassani R,Bahrami A,Nejat A
Country: Iran
University: Mashhad University of Medical Sciences , Department: Medicine

Background: Renat transplantation is the best choice for patients with ESRD. Gastrointestinal (Gl) disorders are the most non-nephrologic complications, have an important role in decreasing of quality of life ofrenal transplantation recipients. We assessed the frequency of Gl disorders in a large group of these patients.
Methods: Findings of 207 transplant patients recorded through 3 years (1988-2001) in the regular periods of time (+ episodes of coming for a symptom). 113 files were completed, able to be assessed (the assessment and recording of all data was performed with one team only). The relationship between biochemical results, medicament diet, individual factors and GI complications regarding the period of time after transplantation was statistically analyzed with Chi-square test. Paired test , Mann-Whitney test, and T- students test.
Results: Out of 113 patients, 71 males and 42 females, the average age was 32.6 years (SD-12.4) Second two week after transplantation was the most period of time that GI complications were seen. The three complications of dyspepsia, nausea vomiting, and diarrhea were seen more frequent than others. The most frequent sign was Epigastric pain (2.7% in second two week there was no relationship between Dyspepsia and cyclosporine dosage (p = O.08), there was also no relationship between dyspepsia and creatinine level (indicator of the kidney function) (p = 0.09), comparable with an other researches.
Conclusions: Because of high incidence of GI complications (inspite of kidney function and cyclosporine dosage), the doctor should be aware of them to follow up patients especially in the end of the first month.

Session: Genetics

Y chromosome microdeletions in infertile men with azoospermia

ESC-ID: 479
Authors: Radakovic D, Repac S
Country: Serbia
University: University og Belgrade , Department: School of medicine

Introduction: Infertility is a problem affecting many couples with a child wish. Impaired fertility of a male partner is the main cause of infertility in up to one half of all infertile couples. The genes responsible for spermatogenesis are located on the long arm of Y chromosome.
Purpose: The aim of the study was to analyze Y chromosome microdeletions in regions of azoospermia factors (AZF) as potential cause of male infertility.
Materials and methods: The study has encompassed 30 men with azoospermia and normal cytogenetic findings. In these patients microdeletion analysis was performed by multiplex polymerase chain reaction (PCR) on DNA extracted from peripheral blood. Three markers of azoospermia factor (AZF) regions were tested: sY86 (AZFa); sY127 (AZFb); sY254 (AZFc).
Results: Deletions on Y chromosome were detected in two patients (6,67%), in AZFc region. Size of deleted regions were 400bp.
Conclusion: This study confirmed that microdeletions in the AZF regions on the long arm of the Y-chromosome are associated with idiopathic azoospermic men. These genetic results have potential prognostic value so it is recommended that testing for Y chromosome microdeletions should be considered as an important element in diagnosis and genetic counseling of infertile man.

Synthetic phytoestrogens and the native flax plant extract from Linum usitatissimum effect human bone cells in vitro

ESC-ID: 497
Authors: Bügel V, Müller P, Abarzua S, Nebe B
Country: Germany
University: University of Rostock , Department: Faculty of Medicine

Background: Osteoporosis especially the post-menopausal type is one of the most common bone diseases among women. Many studies have shown that a soybean-rich diet is protecting from osteoporosis and cancer. However, in vitro studies demonstrate converse effects of phytoestrogens, in particular the isoflavones, on osteoblasts. Until now, lignans were not in the focus of the current research.
Aim: The aim of the present in vitro investigation is to enlighten the osteogenic potential and the mode of action of the synthetic phytoestrogens Matairesinol (Mata), Secoisolarici-resinol (Seco) (structural class of the lignans) and Enterodiol (a metabolite of the lignans) as well as the native flax plant extract from Linum usitatissimum (L. u.).
Methods and Materials: Human MG-63 osteoblasts were cultured for 48 h in DMEM without phenol-red and without FCS containing different concentrations of synthetic phytoestrogens (Seco, Mata: 100 nM, 10, 100 μM; Enterodiol: 10, 20, 50 μM) as well as the phytoestrogen containing plant extract from L. u. (0.01, 1, 50 μg/ml). For the assessment of osteoblast function we detected collagen I. The cell growth was investigated by analyzing (i) the cell cycle phases S+G2/M via flow cytometry, (ii) the proliferating cell nuclear antigen (PCNA) by western blotting, and (iii) the cell number. The expression of the estrogen receptor was observed by immuno-fluorescence using confocal microscopy.
Results: MG-63 osteoblastic cells expressed the estrogen receptor alpha and beta. Cell cycle phases were moderately increased by treatment with 100 nM Seco but slightly inhibited with 50 μM Enterodiol. The cell number was decreased 3.8-times with 50 μg/ml L. u. (L. u. 0.5x105 cells/ml; control: 1.9x105 cells/ml) as well as 2.9-times with 10 μM Mata (0.65x105 cells/ml). The expression of PCNA was not effected by the synthetic phytoestrogens, but was dose dependently reduced by L. u.. The protein expression of collagen I was increased if cells were treated with Mata. In contrast, the incubation of cells with Seco, Enterodiol and L. u. resulted in a dose depended decrease of collagen I.
Conclusion: Our first investigations on lignan effects on osteoblast functions reveal that the lignans possibly do not stimulate the cell cycle but may have importance for the synthesis of the extracellular matrix protein collagen I which was obviously using the lignan Matairesinol. Collagen I is the basis for the organic component of the bone architecture and the precondition for the mineralized noduli. To get insights in the lignan effects on osteoblast behavior is of importance for the prevention of osteoporosis and also for the regenerative medicine.

Selecting of the research object for experimental models of cerebrovascular diseases in terms of bioinformatics

ESC-ID: 593
Authors: Chubukova T
Country: Belarus
University: Gomel State Medical University , Department: Pathological Physiology

One of the most important stages of planning a pilot study using laboratory animals is the choice of an appropriate model. Currently, there are a large number of experimental models of cerebrovascular diseases (stroke), using small animals (rodents) and large animals (dogs, cats, monkeys). The most common of these are models of the stroke in rodents. One of the criteria for selection of the animal as an object of study is the similarity of genotypes that is necessary for adequate evaluation of the results. The relevant issue for experimental Biology and medicine is investigation of measures of similarity (homology) of genetic sequences of human and experimental animals. Bioinformatics is an integrated science, which deals with biological objects and processes from the viewpoint of cybernetics. The application of bioinformatics to study the genome of humans and animals can quantitatively describe the structure of genetic sequences and establish phylogenetic similarity. Currently, the analysis of genetic sequences using a variety of application software packages. Mega (Molecular Evolutionary Genetics Analysis) is software, designed for evolutionary analysis, classification, study of the phylogenetic relationships of the nucleotide sequences of genes, multigenic families, and the structures of peptides using the methods of multivariate statistical analysis.
Aim: to choose an object of research for experimental models of cerebrovascular diseases from the position of bioinformatics. Objectives: to choose the research object for experimental models of the stroke, on the basis of data about homologous metallothionein-III genes sequences.
Materials and Methods: The nucleotide metallothionein-III genes sequences of a human (Homo Sapiens), rat (Rattus Norvegicus), mouse (Mus Musculus), dog (Canis familiaris), macaque (Macaca Mulata) were obtained from the database of NCBI. The analysis of homologous sequences conducted using Mega 4.1 software.
Results: Evaluation was conducted using the maximum likelihood method. Homologous nucleotide DNA sequences of metallothionein-III genes in different species of animals and humans were assessed in terms of d (distances). The smallest value of d interpreted as a sign of a high homology of nucleotide sequences in different species. In studying the homology of nucleotide sequences of human and large mammals smallest value of d = 0,055 was found for human and macaque (Macaca Mulata). When comparing the nucleotide sequences of human and small mammals the least values of d = 0,649 have been identified for human and rat (Rattus norvegicus). Thus, the nucleotide DNA sequences of metallothionein-III genes of a human have a great affinity with sequences of genes of macaques and rats as compared with other mammals. In this regard, using of this animals in the experiments investigation is preferable.
Conclusions: nucleotide DNA sequence of metallothionein-III genes of a human have a great affinity with sequences of macaque's and rat's genes , which justifies the choice of these animals as an object of study in experimental models of stroke.

BCL3 gene importance in non-syndromal orofacial clefts' development.

ESC-ID: 621
Authors: Martinkevich O, Prane I, Krumina A, Akota I, Barkane B, Klovins J, Lace B.
Country: Latvia
University: Riga Stradins University , Department: Medicine

Introduction: Cleft lip and/or cleft palate is among the most common human birth defects, with a prevalence of approximately 1 in 300-1 in 2500, the prevalence in Latvia is around 1 in 700. Still up to now the exact mechanism or mechanisms of how the clefts form are not known. This is why it is so important to explore and investigate on the genes constituting to this process. The aim of the study was to carry out the association analyses on possibly candidate gene of nonsyndromic orofacial clefts - BCL3 gene.
Materials and methods: 162 DNS samples were analyzed during the study. 108 DNS samples out of these were presenting the control group, but 54 were DNS samples of nonsyndromic cleft lip and/or cleft palate patients. During the study 3 markers (SNP) were selected for further genotyping using the MALDI-TOF technology.
Results: PLINK was carried out in order to characterize the role of the SNPs of the BCL3 gene in the ethiology of nonsyndromic orofacial clefts: rs8103315, rs1979377, rs2927456 - were polymorphic, one of them showed to have results of good statistical value (rs8103315, p=0.01731).
Conclusion: The results of study present evidence on the possible effect of the BCL3 gene in the development of nonsyndromic cleft lip and/or cleft palate.

Games: a new tool for genomic annotation of next generation sequencing datA

ESC-ID: 784
Authors: Sana ME, Iascone M, Marchetti D, Galasso M, Volinia S
Country: Italy
University: Universita' degli Studi di Ferrara, Department: Morphology and Embriology

Next-Generation Sequencing (NGS) methods are rapidly revolutionizing the landscape of biomedical science, but at the same time pose the problem of rationale data analysis. Detection of single nucleotide polymorphisms (SNPs), insertions and deletions (InDels) and other genetic rearrangements is one of major goals for clinical and pathogenetic studies. Nowadays, there are many commercial and public software packages for processing NGS data. However, the output of these tools often seems to be insufficiently annotated or of difficult functional interpretation. We present GAMES (Genomic Analysis of Mutations Extracted by Sequencing), a new genetic variation annotation tool for mining functional SNPs and InDels. Our program aims to be a middleman between hard data and their interpretation by the investigator. GAMES is divided into two steps. The first step generates per-position information in the pileup format. The input of the software is the alignment in standard SAM (Sequence Alignment/Map) format. GAMES, for each mismatch in the alignment, extracts the position and the respective base in the reference sequence, consensus quality score, per-base sequence coverage, counts and frequencies, and the repetitivity, defined as the number of reads that can be uniquely mapped to cover this location. GAMES evaluates heterozygosity and implements quality parameters. Then, in the second step, GAMES extracts information and annotation about each mismatch. GAMES calculates, by interface to UCSC, the genomic location, namely the gene, the chromosomic coordinates, the exon count (considering all gene isoforms), and the position in exon, intron, UTR region and junctions (intronic regions contiguous to exon starts and exon ends). Addition information regards the calculation of PhyloP conservation score in vertebrates. GAMES underlines the effect of the mutation on the protein. The integration to dbSNP (NCBI) and HapMap allows the confirmation of known polymorphisms. We validated GAMES using reads obtained by Genome Analyzer (Illumina) after SureSelect Target Enrichment of 36 genes involved in hypertrophic cardiomyopathy. The selected regions include 1.9 Mb of DNA from different human chromosomes (NCBI build 36). We used BWA (Burrows-Wheeler Alignment) to align short reads to the human genome. GAMES implements various formats for post-processing and presentation of the analysis, such as html pages of the selected genome and protein alterations with links to major databases, BED files for coordinates and coverage of reads, and MAF files for multiple alignment of mismatches. The sensitivity of GAMES and the accuracy of SNP calling are guaranteed by considering multiple parameters.
In conclusion, the main purpose of GAMES is to allow biological insight into the mutational events to life science investigators, even in absence of bioinformatic expertise.

G20210A protrombin gene polymorphism in women with spontaneous miscarriage

ESC-ID: 860
Authors: Stojkovic T
Country: Serbia
University: University of Belgrade, Department: Faculty of Medicine

Introduction: Factor II (protrombin) converts to trombin. This leads to polymerization of fibrinogen in fibrin in the process of coagulation. G20210A polymorphism for the gene that encodes FII is the cause trombophilia. Factors that increase the process of coagulation may be associated with the emergence of spontaneous abortion.
Aim: The aim of this study was to determine frequency of allele and genotypes of FII gene G20210A polymorphism in women with spontaneous abortions and a control group, and then examine association polymorphism and the manifestation of spontaneous abortion.
Material and methods: Study included 45 women with repeated spontaneous abortions and 19 women without abortions. The analysis of G20210A polymorphism was done by using polymerase chain reaction (PCR) and followed digestion of the PCR products with HhaI. Electrophoresis of products was performed on a 8% polyacrilamyde gel. Investigation of difference between G20210A genotypes frequency and mutated allele frequency in group of patients and control group was done by using Fisher's test of exact probability.
Results: Frequency of genotypes GG and GA was 92,86% and 7,14% in group of patients, and 94,44% and 5,56% in

healthy control. Frequency of mutated allele is 3,45% in group of patiens with MI and 2,71% in healthy control. There was no statistically significant difference in the frequency of G20210A FII gene polymorphism in patients with spontaneous abortions and in the control group (P = 0, 2657).
Conclusion: In our study, G20210A polymorphism is not risk factor related with spontaneus abortion.

New evidence for the fetal insulin hypothesis: fetal angiotensinogen M235T polymorphism is associated with birth weight and elevated fetal total glycated hemoglobin at birth

ESC-ID: 870
Authors: Schlemm L, Haumann HM, Ziegner M, Stirnberg B, Sohn A, Alter M, Pfab T, Kalache KD, Guthmann F, Hocher B
Country: Germany
University: Charieté-Universitätsmedizin, Berlin, Center for Cardiovascular Research

Background: Low birth weight is associated with an increased risk of cardiovascular events in later life. Insulin resistance is a key finding in adult patients with cardiovascular diseases. The neonatal phenotype of an individual with insulin resistance might be low birth weight, as insulin influences fetal growth. The renin-angiotensin-aldosterone system has been associated with cardiovascular disease and insulin resistance. We analyzed whether fetal polymorphisms of the angiotensinogen (AGT) and angiotensin-converting enzyme genes influence birth weight and/or fetal total glycated hemoglobin (fTGH), a surrogate parameter of fetal insulin resistance at birth.
Methods: In 1132 white women delivering singletons, neonatal umbilical blood samples and clinical data of the mothers and newborns were obtained. Newborns were genotyped with respect to the AGT M235T and angiotensinconverting enzyme insertion/deletion polymorphism.
Results: The AGT M235T TT polymorphism is associated with reduced birth weight (TT: 3288 g versus TMRMM: 3435 g, P<0.05). Furthermore, newborns with a high percentage of fTGH (>6.5%) are more likely to have the TT genotype than those with normal fTGH (<-6.5%, P<0.05). With higher cutoffs for fTGH, the significance increases to P less than 0.005. No association was seen between these parameters and the fetal angiotensin-converting enzyme insertion/deletion phenotype.
Conclusions: The fetal AGT M235T polymorphism is associated with low birth weight and elevated fetal fTGH at birth. Previous findings show that elevated fetal fTGH correlates with low birth weight and that higher activity of the renin-angiotensin-aldosterone system is an independent risk factor for the development of diabetes mellitus and coronary artery disease. Therefore, our data are supportive of the fetal insulin hypothesis.

The effect of folic acid supplementation on the expression of genes involved in pluripotency

ESC-ID: 962
Authors: Dormandy L, Burdge G, Lillycrop K
Country: United Kingdom
University: University of Southhampton, Department of Developmental Origins of Health and Disease

Aim: Nutrition in early life induces persistent changes in phenotype associated with differential risk of non-communicable diseases including obesity and cancer. This involves induction of stable changes in gene expression through altered epigenetic regulation of transcription. Recent studies have shown that folic acid supplementation during pregnancy or in the juvenile-pubertal (J-P) period induces specific changes in phenotype and gene expression contigent on maternal protein intake. This study examined the effect of folic acid supplementation during the J-P period and the quality of the maternal diet on the mRNA expression of the pluripotency-associated genes Oct 4 and Sox 2.
Methods and materials: Rats were fed either a control (C; 18% protein) or protein restricted (PR; 9% protein) diet during pregnancy and a nutritionally adequate diet during lactation. Offspring were fed, either a folic acid adequate diet (AF; 1 mg/kg feed) or a folic acid supplemented diet (FS; 5mg/kg feed) for 28 days from weaning and then a high fat diet until postnatal day 84 when offspring were killed. The mRNA expression of Oct4 and Sox2 was measured by quantitative real time RTPCR Statistical significance was analysed using one way ANOVA.
Results: There was no difference in plasma folate concentration between offspring on day 84. Both Oct 4 and Sox 2 showed changes in expression following postnatal folic acid supplementation. In adipose tissue, Oct 4 and Sox2 expression was decreased in FS offspring in both C ($p<0.001$) and PR ($p<0.001$) groups. In liver, Oct 4 expression was reduced in the FS group C ($p<0.01$) and PR ($p<0.05$) maternal diets. However, Sox 2 expression was increased in FS offspring C ($p<0.001$) and PR ($p<0.001$) diets.
Conclusions: This study shows that supplementation with folic acid during the J-P period induced tissue-specific changes in Oct 4 and Sox 2 expression independent of the protein content of the maternal diet. Such effects persisted beyond the period of supplementation and altered folate status which suggests that these changes may be stable, possibly as a result of epigenetic processes. The reduction in Oct4 and Sox2 in adipose tissue suggests a smaller adipocyte progenitor population which may impair production of new, insulin-sensitive adipocytes and so contribute to insulin resistance. The opposing changes in Oct4 and Sox2 expression in liver suggest dysregulation of stem cells which may alter capacity of regeneration or increase risk of hepatic cancer. Together these data suggest that induced changes in the regulation of pluripotency genes may be an important mechanism in the early life origins of disease.

Association between TP53 gene ARG72PRO polymorphism and gastric cancer in Ardabil province, Iran.

ESC-ID: 1263
Authors: Akhavan H, Barzegar A, Nickmanesh M, Yazdanbod A, Mazani M, Pourfarzi F, Didevar R, Nobakht H, Bashiri J, Malekzadeh R, Hosseini-Asl SS
Country: Iran
University: Ardabil University of Medical Sciences (ARUMS) , Department: Medical Genetics

Introduction: Gastric cancer (GC) as the 3rd most common malignancy in Iran, accounts for ~50% of all GI cancers who cause 55% of all cancer-related deaths in Iran. The rates of GC reported from Ardabil province, Iran, are among the highest in the world. Upper gastrointestinal cancer accounts for more than 50% of all cancer deaths in this area. Codon 72 polymorphism of the tumor suppressor gene TP53 has been associated with a higher risk in the development of several types of cancer. The polymorphism results in a variant protein with either an arginine (CGC) or a proline residue (CCC). We aimed analyze the association of the TP53 codon 72 polymorphism with the risk of developing gastric cancer in a high-risk population around the world.
Materials and Methods: We enrolled 87 patients with mean age 65.9 (range: 37-87; std.=11.1) affected with primary gastric cancer (GC) and same age- and sex-matched healthy control participants. The analysis has been done by PCR-RFLP on DNA extractions from peripheral blood.
Results: In case group the genotype was 16.1%, 42.5%, and 41.4% for Arg/Arg, Arg/Pro, and Pro/Pro, respectively. And for controls those were 18.5%, 40.2%, and 41.4%. In comparing case and control group, no significant correlation was found (p=0.9). Also, there was any significant correlation between codon 72 status and pathologic data.
Conclusion: Because of the high frequency of GC in our province, the investigations about the role of genetic susceptibilities for GC are very important. In spite of finding no relationship between P53 polymorphisms, studying other genetic variations is recommended.

Study of extracellular DNA associated with erythrocytes in healthy peoples and with chronic pyelonephritis.

ESC-ID: 1412
Authors: Kapoor R , Tankibayeva NU
Country: Kazakhstan
University: Karaganda State Medical University , Department: General Medicine

Introduction: At present, the origin of extra cellular DNA in plasma (serum) in human blood by the release of living cells do not arise any doubts.Therefore, we currently focus on the composition of these nucleic acids and their correlation with different diseases or phases of the physiological state of man. Thus the use of analysis of extra cellular DNA may have to address all four objectives of Laboratory Medicine - screening, diagnosis, monitoring and forecasting. For screening and as a noninvasive diagnostic method it is possible to use definition of level of extra cellular DNA and its predecessors-ASF (acid-soluble fraction) in the blood of patients with renal pathology.In our work we have distinguished two objectives: The study of content of extra cellular DNA and ASF associated with erythrocytes in the blood of healthy individuals and patients with common renal pathologies - chronic pyelonephritis (CP)Previously, it was found that an increased level of nucleic acids in blood was observed in a number of cancers, radiation damage, autoimmune diseases, aging and pregnancy.
Material and Method: 50 Patients (age 25- 55 years) with clinically verified CP and 50 healthy peoples were included in the study. Epidemiological data (as Personal, family, smoking and drinking history, nutritional information) and clinical pathological data were collected from the medical records and face to face survey questionnaire Their blood sample was collected for study of extra cellular DNA & ASF (Acid Soluble Fraction) by using Marusheva L.E equilibrium test and spectrophotometery.
Result: Our analysis shows an increase of ASF compared with control by 2.02 times which represents a significant decay of extra cellular DNA on its fragmentation, since endonuclease activity in blood significantly increased in CP.The number of extra cellular DNA associated with erythrocytes is decreases by 2.18 times compared with control.This result confirms our data on the accelerated degradation of extra cellular DNA in blood in CP.
Conclusion: Extra cellular DNA & ASF associated with erythrocytes in blood of healthy people and in patients with Chronic Pyelonephritis was differentiated by increased level of ASF by 2.02 times & decreased level of extra cellular DNA content by 2.18 times..

Apert Syndrome

ESC-ID: 1446
Authors: Onofrei A, Onutu R
Country: Romania
University: Univesity of Medicine and Pharmacy "Grigore T. Popa", Iasi , Department: Genetics

Introduction: Apert syndrome is a genetic disease, caused by a mutation transmitted autosomal dominant gene FGFR2 (location: 10q25-q26). Major clinical manifestations include oxicefalie, brachycephalism, hipertelorism, protruding cardiovascular anomalies and genito-urinary and musculoskeletal sindactilie. Objective: This paper aims at presenting a patient with Apert Syndrome, focusing on multidisciplinary aspects of disease management (genetic screening, pediatric, orthopedic, dental and neurological), and problems occurring in providing genetic counseling. The patient is the 3rd child of a couple young mother 30 years, father 36 years, neconsangvin. Pregnancy developed normally birth occurred at term, naturally, cranial presentation and postnatal development is normal, appropriate age of 1 month.
Results: Based on clinical picture and paraclinical Apert Syndrome is suspected. Certainly positive diagnosis: molecular diagnosis, identification of gene mutations in FGFR2.
In conclusion we mark the importance of clinical examination and radiological diagnosis Syndrome Apert, patients requiring a multidisciplinary assessment (neurosurgeon, radiologist, oral-maxillo-facial surgery, orthopedic surgeon, geneticist, a psychiatrist) for preoperative evaluation and identification of other malformations associated / complications (hydrocephalus).

Session: Gynaecology / Obstetrics

Use of hormonal contraception in italian university students

ESC-ID: 585
Authors: Grandi G, Generali M, Volpe A, Cagnacci A
Country: Italy
University: University di Modena e Reggio Emilia , Department: Facoltà di Medicina e Chirurgia

Aim: The aim of our study was to assess in University students the diffusion of the use of hormonal contraception, the types used and to compare features of users versus non-users.
Matherials and Methods: A self-administrated questionnaire was submitted in April 2010 to 360 students chosen randomly from various degree courses of the University of Modena e Reggio Emilia.
Results: The average age of our sample was 23.03 ± 3.106. Most students had no pregnancies (95.8%, 345/360). Two.five % who had at least one child (9/360), and 1.38% had a voluntary abortion in gynaecological history (5/360). Current users of hormonal contraception were 30.3% (109/360). The average time of use was 27.9 months ± 28.3. Types of hormonal contraceptive useds were: vaginal ring (26/109; 23.8%), transdermal patch (1/109; 0.9%) and oral contraceptive (82/109; 75.2%). In this last group 93.9% (77/82) used a monophasic pill and 6.1% (5/82) used a multiphasic pill. In the group of the oral contraception the progestin component most widely used was drospirenone (50/82; 60.97%) chemically related to spironolactone, followed by gestodene (11/82; 13.4%) and desogestrel (7/82; 8.5%) and other poorly represented. The average age of the contraceptive users was lower than that of non users (Mean diff: 0.828, p:0,0201), while the average age of menarche similar in the two groups. As expected students who live a stable relationship were more in the users group (80.73% Vs 50.6%, Chi square:28.7, p:<0,001), but if we consider the parameter „length in month of the relationship", in the coupled students group it didn't change between the users and the non-users. Smokers are divided in: Regular smokers 17.5% (63/360), Occasional smokers 12.2% (44/360), Former smokers 10.5% (38/360), Non-smokers 59.7% (215/360). These subgroups seems to be equally divided between users and in non-users but, users of hormonal contraceptives tend to smoke more cigarette per day (Mean diff:2.25, p:0,0399). Total mean BMI was 20.65 ± 2.7 and it was similar between the two groups. The only subgroup that seems to have a statistically lower BMI are drospirenone users vs. non-users (Mean Diff:0.696; p:0,049), but not vs.other hormonal methods users. The 20.55% (74/360) of the whole sample reported that they never performed a gynaecological examination in their life and this aspect is present also in the group of the hormonal contraception users (8.3%; 9/109).
Conclusions: University female students population represent an excellent model to assess the current postponement of the reproductive life and then the necessity of hormonal contraception. Transdermal contraception isn't a widespread method and we assist to an important increase of the transvaginal contraception. Oral contraceptives remain the most common methods, especially those monophasic drospirenone based. Smoke seems to remain an important problem while overweight isn't so alarming in this life stage.

Synchronous primary carcinomas of the endometrium and ovary

ESC-ID: 601
Authors: Djordjevic I, Skakic A, Misic J
Country: Serbia
University: University of Nis , Department: Faculty of Medicine

Heading: The term synchronous tumors is applied when two or more tumors occur in a patient simultaneously. Among women with gynecologic cancer, the simultaneous presence of primary carcinomas of the endometrium and ovary is relatively uncommon.
Aim: The aim of this study was to analyze the clinicopathologic features and survival outcome of patients with synchronous primary carcinomas of the endometrium and ovary.
Method: Between 1996 and 2005, 45 patients fulfilled the criteria of synchronous primary carcinomas of the endometrium and ovary and were included in the study. The medical records and the pathologic reports were retrieved. Kaplan-Meier survival analyses were performed and compared using the log rank test.
Results: The incidence of synchronous primary endometrial and ovarian carcinomas was 3.3% in patients with endometrial carcinoma and 7.2% in patients with ovarian carcinoma. Median age of patients with synchronous primary endometrial and ovarian carcinomas at diagnosis was 52 years (range: 37-70 years). The majority of patients (64.4%) were premenopausal and (53.3%) nulliparous. Twenty-nine patients (64.4%) had similar (endometrioid/endometrioid) carcinomas in both the endometrium and ovary. There was no significant difference in survival outcome in patients who had similar histopathology and those who had dissimilar histopathology (p=0.849).
Conclusions: The correct classification of synchronous primary carcinomas of the endometrium and ovary is often problematic because of the frequent confusion with their metastatic counterparts. The majority of patients with synchronous primary carcinomas of the endometrium and ovary belonged to concordant endometrioid histopathology in the endometrium and ovary.

Fetal blood flow in the presence of the IUGR - three dimensional assessment using CFD

ESC-ID: 668
Authors: Brisan C, Albulescu VI, Bernad SI, Bernad ES
Country: Romania
University: University of medicine and Pharmacy "Victor Babes" of Timisoara , Department: Obstetrics an Gynecology

Aim: The purpose of this paper was to non-invasively assess hemodynamic parameters in the vasculature of the placenta in normal and intrauterine growth restricted (IUGR) fetus using ultrasound biometry and Doppler

velocimetry and computational fluid dynamics (CFD) techniques.
Introduction: In normal pregnancies, the vasculature of the placenta offers little resistance to blood flow, so enabling an adequate supply of blood for gaseous and nutrient exchange with the maternal circulation. In human pregnancies associated with growth retardation or pre-eclampsia, the fetoplacental vascular resistance may rise, which is highly indicative of poor pregnancy outcome. Intrauterine growth restriction (IUGR) occurs when the fetus fails to achieve its full growth potential. IUGR is the most important cause of perinatal mortality and morbidity.
Methods and Materials: The subjects belonged to 2 cohorts examined prospectively during fetal life over a 1.5-year period at the Department of Obstetrics and Gynecology Bega Timisoara in 2009 to 2010 (project CNCSIS-UEFISCSU, PNII-IDEI code 798/2008): one cohort consisted of strictly normal subjects participating in a study on fetal physiology, and the other examined subjects because of suspicion of IUGR.
Results: Of the total of 41 pregnant women recruited, 37 completed the study. Twenty-two (59%) were nullipara. The average age of the participants was 30 (range, 19-41) years and the body mass index at booking 25.8 (SD, 3.98) kg/m^2. Onset of labor was spontaneous in 31 (83.7%) women, labor was induced in 2 (0.05%), and 4 (1%) had an elective cesarean section before the onset of labor. The mean gestational age at delivery was 39.8 (SD, 1.36) weeks, birth weight 3565 (range, 1645-4350) g, and placental weight 651 (SD, 145) g. Placentas were obtained from normal pregnancies (n = 26) and the IUGR pregnancies (n = 11) within 30 min of Caesarean section or vaginal delivery. Vascular reactivity has previously been demonstrated to be unaffected by mode of delivery. The placental casts in this study showed in 21 of 37 (57%) placentas showed a dichotomous vascular pattern and in the remaining 16 placentas (43%) showed monopodial vascular pattern. A dynamic model of the placental arterial circulation was constructed as follows: For each fetus, a chorionic arterial tree was constructed. This comprised a number of primary chorionic arteries, which then divided dichotomously. Online measurements were performed and maximum velocity (Vmax) and time-averaged intensity-weighted mean velocity (Vwmean) were determined. Both Vmax and Vwmean were used for the calculation of UV blood flow, since both methods have been suggested in the literature and are currently in use.
Conclusion: The computational results together with the echo-Doppler measurements allowed us to quantify the uterine blood flow rate in pregnant women and its repartition between cervical and corporal branches. A computer model of the fetoplacental circulation has also proven to be a useful tool in the evaluation of the effects of structural changes. Blood flow in the group suffering from IUGR was significantly increased relative to the uncomplicated pregnancies. The authors suggest that volumetric blood flow outcome can be used to predict complicated pregnancies.

Role of sFas-mediated apoptosis by hyperplasia endometrium in the combination with android obesity

ESC-ID: 692
Authors: Gradil O, Kachaylo I, Muryzina I
Country: Ukraine
University: The Kyarkiv National Medical University, Department: 3nd Department Obstetrix and Gynecology

*Introduction:*The perimenopause age (PMA) of woman is critical period when preconditions for development as neoplastic processes in reproductive bodies are created, and the metabolic syndrome (MS), mainly symptom which is android obesity (AO). The conditions hyperplastic endometrial (HE) arise by AO, due to infringement of regulation cellular of proliferation and apoptosis. Purpose. The search of diagnostic criteria which will help to specify potential risk atypical transformations and to develop the most justified medical tactics.
*Material and methods:*This study included 90 women of PMA presenting with non atypical hyperplasia of endometrium (NAHE) and atypical (AHE), and else 60 women of PMA are chosen as the control without HE. To all patients has been realized ultrasonic research of internal genitals by means of medical ultrasonic device Sonoline SL-1 of firm "Siemens" (Switzerland) which works in real time. The contents of sFas and FasL, TNF-α. in serum of blood it was defined with the help ELISA. Basal and induced concentration of insulin was defined by help of radioisotope method.
Results: Minimal parameter sFas was in Ia subgroup (0,86 ± 0,31 ng/ml), in other groups - authentically is higher (II - 4,14 ± 0,39 ng /ml, III - 13,78 ±1,27 ng /ml, IV - 19,86 ± 1,92 ng /ml, Ib - 8,21 ± 0,63 ng /ml, p <0,05). The maximum level sFas has been fixed in patients at AHE, the parameter of III group authentically conceded to him, exceeding values of Ib subgroup.
Conclusions: The level sFas, probably, reflects the worse background for treatment and can be offered in quality prognostic guiding line by development of tactics in management women of PMA with NAHE in combination from android obesity. Due to for patients at whom sFas ≥13 ng /ml, tactics of choice radical treatment - is expedient to count operation. For hyperplasia of endometrial oppression of processes of apoptosis is typical.

Pro-apoptotic B-cell lymphoma oncoprotein 2 -associated X protein expression changes in endometrial carcinoma

ESC-ID: 711
Authors: Sisovsky V, Palkovic M, Kopani M, Gasparovicova N, Hudecova I, Danihel L
Country: Slovakia
University: Comenius University in Bratislava, Faculty of Medicine and Faculty of Natural Sciences , Department: Dept. of Pathology, Molecular Biology

Background: Endometrial carcinoma is the most common invasive neoplasm of the female genital tract. Various histological subtypes of endometrial carcinoma with specific morphologic features (endometrioid, serous, clear

cell, and others) have been identified to date. There are two basic types of endometrial carcinoma that have been designated, type I (endometrioid) (arises from endometrial hyperplasia, is estrogen related, with indolent behavior) and type II (non-endometrioid) (from atrophic endometrium, is unrelated to estrogen, aggressive behavior). Pro-apoptotic B-cell lymphoma oncoprotein 2 - associated X protein (BAX), molecular weight of 21 kDa, belongs to B-cell lymphoma oncoprotein 2 protein group, whose members act as anti- or pro-apoptotic regulators of cells. BAX is in the outer mitochondrial membrane of cells also. Overexpressed Bax accelerates programmed cell death. Its role in endometrial carcinoma is largely unclear. Increased Bax expression is associated with an increased risk of relapse in childhood acute lymphocytic leukemia.
Aim: To evaluate a relationship between the morphological appearance of normal endometrium and endometrial carcinoma, and the degree of Bax expression.
Methods and Materials: A total of 38 archived formalin-fixed and paraffin-embedded human biopsy (hysterectomy and curettage) tissue specimens, with normal proliferative endometrium, endometrioid (prototypic endometrial carcinoma type I) the grade of histological differentiation G1 and G3, and serous (prototypic endometrial carcinoma type II) histological subset of endometrial carcinoma of the Slovak women, were evaluated immunohistochemically, by light microscopy semiquantitatively, for the Bax expression in cytoplasm of endometrial epithelial cells.
Results: The Bax expression was irregular weak in normal proliferative endometrium. In endometrial carcinoma, the Bax expression was gradually going up with the grade of histological differentiation of endometrioid (less aggressive, type I) histological subset of endometrial carcinoma. The expression of Bax was the highest in serous (aggressive, type II) histological subset of endometrial carcinoma.
Conclusions: Malignant changes of human endometrium are accompanied by an increase in Bax expression. The highest Bax expression is related to the endometrial carcinoma with aggressive phenotype. Its evaluation by immunohistochemistry could be relevant component which may be useful in biomedical research, in diagnostic histopathology and clinical practice. Supported by the grant 2007/28-UK-05 MZ SR and the financial donation of Governor Dipl. Ing. T. Bucek, 2006-07 LCI D-122 CR&SR.

Development of low grade cervical lesions in function of age and HPV(human papillomavirus) status, utility of early Pap test

ESC-ID: 975
Authors: Remesova T
Country: Czech
University: Charles University , Department: 1st Faculty of Medicine

Introduction: Low grade HPV lesions are in less then 3% of female population in Europe. We estimated rates of progression and regression of cervical squamous intraepithelial lesions (SILs) according to HPV status and age.
Aim: We analysed group of women who were diagnosed in 2004 with low grade HPV lesion on cervix. The aim was to have detailed overlook in lesion development in age groups with main focus on the youngest patients and therefore reassess recommandations regarding first cervical cancer screening and utility of routine HPV testing in LSIL lesions.
Material / methods: We used retrospectively data from Hopital Erasme databasis (department of Obstetrics - Gynaecology). Group of 163 patients who were diagnosed in 2004 low grade HPV lesion (LSIL at liquid based cytology or CIN1 at biopsy). Only 85 women coresponded to criterias for the study, 52 women were lost in follow- up or had high grade lesion covered under low grade lesion, 26 women were excluded due to low imunity status (HIV positive, after transplantation). HPV test was carried out in most of patients (hybrid capture 2). Follow up was till the end of 2009. The age groups were 15 to 25, 26 to 35, 36 to 50 and over 50 years old.
Results: We found higher risk of developing high grade lesions from low grade lesions in the youngest group (15 - 25). In the groups HPV negative and HPV positive wasnt any significant difference in the time of regression of the lesions. In our specimen there was no case of HPV negative developing high grade lesion. Discussion: Recently most of the countries have set up global vaccination against HPV in young girls. It is very probable that the incidence of any HPV lesions will decrease. Many studies also suggest that most of the lesions (even high grade) in young women regress spontanously and warn against unnecessary overtreatment in this age group of patients.
Conclusions: Despite higher risk for the youngest group to develop high grade lesion we wouldn´t recommand early Pap test due to higher chance to regress even from high grade lesions and great risk of overtreatment Also nowadays most of the girls/young women are vaccinated against HPV infection.

Serum adenosine deaminase activity in gestational diabetes mellitus and normal pregnancy

ESC-ID: 1020
Authors: Mokhtari M, Hashemi M, Yaghmaei M, Molashahi F, Shikhzadeh A, Niazi A, Ghavami S
Country: Iran
University: Zahedan University of Medical Sciences, Department: clinical research development center

Purpose: To our knowledge, there is no report regarding adenosine deaminase activity (ADA) in gestational diabetes mellitus (GDM). The aim of the present study was to investigate the level of serum ADA activity in normal pregnancy, GDM and normal non-pregnant women.
Methods: The serum catalytic concentration of ADA was measured in samples of 20 GDM, 40 normal pregnant and 20 non-pregnant healthy women.
Results: Adenosine deaminase activity was significantly higher in GDM (24.30 ± 8.04 IU/L) and pregnant women (23.88 ± 8.66 IU/L) than those of normal non-pregnant individuals (11.85 ± 3.23 IU/L) ($P < 0.0001$), but the ADA level was not significantly different from GDM and normal pregnant women ($P = 0.97$).
Conclusions: Adenosine deaminase activity was significantly higher in GDM and pregnant individuals than normal group in this study. Previous reports in this field are contentious; therefore, ADA activity could be regulated in different population by immunologic and genetic factors

The local treatment of human papillomavirus associated cervix uteri diseases with celandine lead to decrease infection recurrence rate

ESC-ID: 1024
Authors: Kalashnikov A S, Voronkova O V, Emelianov V U
Country: Russia
University: Chuvash state university named after I.N. Ulyanov, Department: Department obstetrics and gynaecology

Background: HPV is the main cause of cervical cancer [1]. That the main strategy is prevention human papillomavirus (HPV) infection by HPV vaccination. However vaccines is lack of therapeutic effect and classical treatment of HPV is still inefficient.
Aim: The aim of our study was to search for new effective drugs for treatment of HPV. We have conducted a comparative study drugs - solution extract of celandine (Chelidonium majus L. extract on sodium and potassium hydroxide, Russia) and „Condilin" (Astellas, Japan). It was proven that celandine has apoptosis inducing, cytotoxic effect on tumor cells and could be effective in treating papillomovirus infection.
Materials and methods: Studies were conducted on 157 woman aged 17-35 years, which diagnosed mixed infection of HPV (6,11,13,16,18,31,33,35, 39 type) with genital warts (condiloma acuminata) and cervical precancerous lesions in the form of leukoplakia, CIN 1-2 stages. All patients gave informed written consent. The patients were divided into 3 groups: Group 1 - patients get treatment „Celandine" (n = 56), Group 2 - patients get „Condilin" (n = 48), Group 3 - patients which have not been local treated of the vulva and cervix (n = 53). Diagnosis of HPV these patients was carried out by polymerase chain reaction (PCR) of swabs from the vulva, cervix. Patients of all groups were additionally immunomodulatory therapy: 1) Interferon alfa-2b per vag.; 2) gel „Panavir" locally; 3) tablets „Lavomax" (Tirolon, Russia), per os. For control cured of HPV every investigated women PAP smear, vaginal biocenosis, colposcopy examination were performed; they was carried out by PCR-diagnostic at 3, 6, 12 months.
Results: Relapse after 6 months was also found to be much less in Group 1 with 12.5% of patients, compared to 22.92% in Group 2 and 30.19% in Group 3. Regarding cervical treatment we diagnosed a clinically significant reduction or complete disappearance of the cervix leukoplakia zone. In Group 1 when a colposcopic test was carried out after 6 months the zone was reduced in 89.65% of cases. In Groups 2 and 3 the percentages showing reduction was 77.08% and 37.73% of patients respectively. In addition after 12 months of treatment 92 patients from groups 1 and 2 had no relapses. Patients maintained condylomatosis free vulvas and normal colposcopic pictures of the cervix. The remaining patients mostly within Group 3 are continuing with treatment and are expected to continue to be monitored.
Conclusions: Our study demonstrated high clinical efficacy of the celandine extract solution in addition to the specific immunomodulation therapy in 96.43% of cases. This compared with 79.17% in the treatment with „Condilin". In the control group the percentage cured was only 45.28%. In addition there were a smaller number of relapses of condylomatosis and cervical leukoplakia in Group 1.

Hepcidin levels and characteristics of iron homeostasis in preeclampsia

ESC-ID: 1125
Authors: Toldi G, Stenczer B
Country: Hungary
University: Semmelweis University

Aim: Preeclampsia is an inflammatory complication of pregnancy characterized by hypertension and proteinuria. This syndrome affects 5-8% of all pregnancies worldwide, and is a major risk factor for both maternal and fetal morbidity and mortality. Plasma iron levels were found to be elevated in preeclampsia, contradicting the ongoing inflammation. The link between iron homeostasis and inflammation is a recently described acute phase protein, hepcidin. The physiological role of hepcidin is to decrease plasma iron levels through the internalization and degradation of the iron transporter molecule, ferroportin. We aimed to characterize hepcidin levels and their association with iron homeostasis in preeclampsia.
Methods and materials: We took peripheral blood samples from 30 preeclamptic (gestational age: 36,5 [24-40] weeks [median, range]) and 37 healthy pregnant women (gestational age: 36 [28-39] weeks [median, range]). Plasma hepcidin levels were measured with a modified method of mass spectrophotometry developed at our laboratory. We further determined IL-6 levels, complete blood cell count and parameters describing iron homeostasis. Mann-Whitney test was used for statistical analysis.
Results: Plasma hepcidin, IL-6, iron and ferritin levels were elevated, whereas plasma transferrin levels, total iron binding capacity and mean corpuscular hemoglobin concentrations were lower in preeclampsia compared to healthy pregnancy. No difference was revealed in other parameters investigated.
Conclusion: Plasma iron levels are elevated in spite of high hepcidin levels in preeclampsia, thus our finding might indicate a resistance to the iron-decreasing action of hepcidin. This mechanism may be an important contributing factor to the pathogenesis of preeclampsia due to the elevated generation of reactive oxygen species and the exacerbation of the ongoing inflammation. Our results raise the notion that the need for iron supplementation is to be reconsidered in preeclamptic pregnancies, and the appropriate level of iron intake should be set individually for preeclamptic pregnant women based on their actual iron homeostasis.

The usefulness of anti-mullerian hormone in in-vitro fertilisation therapy

ESC-ID: 1431
Authors: Ellwood A
Country: United Kingdom
University: The University of Leeds , Department: School of Medicine

Introduction and Background: There is increasing demand for assisted reproductive technologies. Such therapies involve the controlled stimulation of both ovaries resulting in a multi follicular development. Individual response to such stimulation is proportional to a woman's remaining ovarian reserve which remains difficult to assess. Recent studies have suggested that serum anti Mullerian hormone (AMH) concentration may more precisely reflect ovarian reserve.
Aims and Objectives: Routine use of AMH is still limit-

ed in clinical practice due to uncertainties regarding its reference range in addition to the unknown effects of confounding factors such as body mass index (BMI) and ethnicity. The purpose of this prospective single-centre cohort study is to measure the day 21 serum AMH concentration (pmol/L) of women undergoing a cycle of in vitro fertilisation (IVF) or intracytoplasmic sperm injection (ICSI). A nomogram enabling the calculation of an appropriate daily dose of eFSH (IU/L) will then be generated from this data.
Methodology: The inclusion criteria were all patients undergoing a cycle of IVF or ICSI at Leeds General Infirmary (LGI) Reproductive Medicine Unit (RMU). Exclusion criteria include patients undergoing frozen embryo transfer or those who are restarting a previously abandoned cycle of IVF or ICSI. The primary outcome measure will be the day 21 serum AMH concentration. The upper and lower intra-assay coefficients of variation (CV) are currently 2.08% and 7.83% and the inter assay CVs 5.9% and 7.5% respectively. The power calculation and sample size have been based on previously published data (1) which estimated that 5% of cycles would under-respond, 3% of cycles over respond and 92% progress as expected with 6 to 14 oocytes retrieved. The standardised difference of AMH levels between the normal and under-response groups was > 1. As a consequence, power tables indicate the sample size of under-responders should be 35 in order to achieve a power of 0.9 and a significance of 0.01, thus a sample size of 700 would be appropriate to meet this power. It is anticipated that the broad entry criteria coupled with the minimal impact to patient treatment will result in full uptake taking 12-18 months.
Results: Despite a diagnosis of subfertility, 66% of recruits had an early follicular phase follicle stimulating hormone (FSH) in the reference range (= 6.8 IU/L; SD = 2.5). A series of regression analyses consistently found day 21 AMH concentration to be significantly (P = < 0.05) correlated with response to stimulation. A receiver operating characteristic (ROC) curve analysis showed the classifier, day 21 AMH concentration, to be a superior predictor of stimulation response compared with early follicular phase FSH (AUC = 0.84 vs. 0.51).
Discussion: Day 21 AMH concentration more accurately reflects a women's ovarian reserve and hence response to stimulation than currently used methods. Nomogram models allow the most appropriate daily dose of stimulation to be calculated for a given day 21 AMH concentration. Such findings will result in decreased cycle cancellation without increasing the risk of ovarian hyperstimulation syndrome, hence increased clinic efficiency, and more precisely managed patient expectations.

Helicobacter pylori infection and its association with implantation rates and early pregnancy loss after intracytoplasmic sperm injection

ESC-ID: 1440
Authors: Hajishafiha M, Ghasemi-rad M, Memari A, Naji S, Mladkova N, Ghareaghaji R, Saeedi V
Country: Iran
University: Urmia university of medical sciences , Department: student research committee

Aim: The aim of this prospective study was to determine the effect of Helicobacter pylori infection on embryo implantation and early pregnancy loss in pregnancies conceived with assisted reproductive technology.
Methods: 187 consecutive infertile couples to be treated with ICSI in a single institution entered into the study. The status of Helicobacter pylori IgG antibodies and anti-CagA IgG was determined in all women and all pregnancies were followed for early pregnancy loss.
Results: 150 couples were eligible and enrolled in the study, 17 (11.33%) with secondary infertility and 133 (88.66%) with primary infertility. The mean age of female patients was 30.6 ± 5.8 years. 58 women had positive IgG antibody levels against H. pylori, 19 of which were seropositive for IgG to CagA protein. Fifty couples of 150 became pregnant. Out of 58 patients positive for H. pylori infection, 23 became pregnant, 7 of which were positive for CagA. Out of 92 patients negative for H. pylori infection 27 became pregnant (p = 0.192 chi-square test). 6 (22.2%) of 27 H. pylori-negative women miscarried early (P0.36 chi-square test). Out of 7 pregnant patients positive for CagA, six (85.7%) miscarried early. Among 16 pregnant patients positive for H. pylori but negative for CagA only 1 (14.3%) miscarried early (p = 0.0001).
Conclusions: According to our results, there is a correlation between rates of early pregnancy loss and the maternal infection with CagA-positive strains of Helicobacter pylori. H. pylori eradication in affected patients may increase the success of ICSI.

Role of fetal magnetic resonance imaging in antenatal cerebral malformations diagnosis

ESC-ID: 1463
Authors: Ciocanea CI, Delorme B, El Rai S, Boussion F, Loisel D
Country: Romania
University: Cluj Napoca , Department: Genaral Medicine

*Introduction:*Although ultrasonography (US) remains the gold standard of detecting fetal malformations, improvements made on technique and increased experience using fetal Magnetic Resonance Imaging(MRI) in antenatal diagnosis changed the place of this tool in monitoring pregnancy. This tool proved its utility especially in detecting some cerebral anomalies where US was found to not be a sensitive examination.
*Aim:*The aim of this study was to assess the importance of fetal MRI in diagnosis of cerebral malformations.
Materials and Methods: 132 fetal MRIs taken between march 2007 and march 2010 were recovered from our logistic database Syrilog. Mean gestational age was 32.16(range from 28 to 35) weeks of amenorheea. Inclusion criteria was ultrasonographically diagnosed mild(from 10 to 12 mm), moderate(from 12 to 15 mm) or severe(above 15mm) ventriculomegaly. Conditions like: corpus callosum hypoplasia or agenesia, periventricular ecogenus material, renal hypoplasia were detected before undergoing the MRI examination in some cases using US. All fetuses underwent MRI according to the following protocol: Haste T2 weighted sequences in the three orthogonal planes of space on a 1.5 Tesla MRI machine. We evaluated fetal biometries and assessed structural abnormalities of the nervous central system. We used T Student test to compare ventricular width taken with the 2 referential examinations: US and MRI.
Results: Severe additional findings were assessed using

fetal MRI like: polymiocrogyria, lisencephalia or heterotopias. We also found a significant difference between the 2 examinations in classifying severity of ventriculomegaly: we found a difference of 1.2 mm at a P-value of 0.00000001.
Conclusion: MRI is more effective as the US examination when detecting severe neurodevelopmental abnormalities like: gyration, migration and cell proliferation, wich could completely change outcome and prognosis of the pregnancy.

In Utero - fetoscopic - minimal invasive management of gastroschisis. A feasibility study in sheep.

ESC-ID: 1485
Authors: Paetzel J, Krebs T, Schroeder B, Andreas T, Hecher K, Bergholz R
Country: Germany
University: UKE Hamburg , Department: Dpt. of Pediatric Surgery, Dpt. of Obstetrics

Introduction: Gastroschisis (GS) is a malformation consisting of a right paraumbilical defect of the abdominal wall with eviscerated intestine exposed to amniotic fluid. The prognosis of GS depends mainly on morbidity attributable to intrauterine bowel loss or postpartum bowel dysfunction. Aim of our study was to evaluate the potential role for fetoscopic surgical management of GS in a fetal lamb model. Our hypothesis is, that a silo covering the bowel in utero (sutured to the abdominal wall) will protect it from amniotic fluid and induce growth of the abdominal wall by restricting the outward growth of the eviscerated intestine.
Material and Methods: 8 timed pregnant German Whitehead ewes (Ovis orientalis aries) were used in this pilot study. On day 70 of pregnancy the gastroschisis was created with minimal invasive fetoscopic surgery under general anesthesia: A defect was created adjacent to the umbilicus and a loop of intestine eviscerated. The ewe was allowed to recover from surgery and the lamb followed up with serial ultrasound studies. On day 90, a second fetoscopic procedure was performed, assessing the viability and extend of eviscerated bowel and introducing a synthetic silo into the abdomen to cover the intestine. The ewe was recovered and taken to final surgery on day 110 of 145 days of pregnancy: A cesarean section was performed, the lamb retrieved, euthanized and samples of abdominal organs taken for laboratory studies. The ewe was allowed to recover and sent back to the shepherd after reconvalescence.
Results: 8 fetuses were included in the study: 2 fetuses were lost because of technical complications (laceration of the umbilical vein and intestinal perforation of the ewe). In the remaining 6 fetuses, the gastroschisis could be successfully created and assessed via the second fetoscopy. Using a 6mm laparoscopic port, the silo could be introduced into the amniotic cavity. Placement of the intestine into the silo was technically demanding but could be performed with increased operating room time. Fixation of the silo to the abdominal wall was performed using different techniques of which only sutures appeared to be effective - also with increased operating room time. On assessment after cesarean section, typical gastroschisis was seen in all 6 lambs: a paraumbilical defect and eviscerated intestine with inflammatory pannus. In 5 of 6 lambs, bowel patency could be demonstrated using saline enemas.
Discussion: Although gastroschisis can be treated postnatally with acceptable morbidity, some complicated cases exist which end in short gut syndrome and total parenteral nutrition with its sequelae. Therefore, we evaluated the feasibility and safety of fetoscopic intervention in gastroschisis in a fetal lamb model. We were able to produce, assess - and intervene in - 6 cases of gastroschisis; although with an increase in operating room time to up to 6 hours. Applying adequate materials and instruments designed for fetoscopic procedures can substantially reduce operating room time and enhance the surgical outcome.Although technically demanding we demonstrate that a prenatal fetoscopic approach for the management of gastroschisis appears a promising new technique which needs further investigation.

Session: Gynaecology - Poster

Optimization and treatment of patients with external forms of genital endometriosis as the cause of infertility

ESC-ID: 519
Authors: Davidyan LU, Ponomarev VV
Country: Russia
University: Kuban state medical university , Department: Perinatology and gynaecology

External endometriosis is one of the most common causes of pelvic pain and infertility in women. In this regard, it is increasingly important that the methods of urgent treatment of external genital endometriosis are aimed at both the treatment of basic disease and the restoration of reproductive function.
The aim: The main point of the research is to study the effectiveness of treatment of patients suffering from external endometriosis and infertility with second-look laparoscopy.
Material and Methods: 100 patients aged 23 to 35 years (the average is from 28.1 to 3.8 years) with a diagnosis: "external endometriosis (pelvic peritoneum endometriosis, ovarian cysts, tubal) III and IV stage(classification American Fertility Society). Infertility“ were studied. Duration of infertility is 7.8 ± 3.9 years. In all patients the menses was regular, two-phase; but some patients were suffering from dysmenorrhea and pelvic pain (constant, dull, aching pain occurred in 80% of patients, and sharp pain in the middle of the II phase of the cycle-20%),which continued for more than 6 months. This group of patients was given two-stage combined treatment: 1) all the patients underwent surgical laparoscopy with the use of laser equipment, electro surgery in the required volume: thermal destruction of endometriosis, removal of endometriosis ovarian cysts, and 2) pharmacological therapy agonists gonadotropin -releasing-hormone(GnRH agonists)for 6 months was applied taking into account the fact that the use of use of GnRH agonists causes a decrease in estrogen and therefore the regression of endometrioid heterotopias. During the surgical laparoscopy almost all cases adhesions in the pelvis in some degree were diagnosed. Following the completion of

hormone therapy the given group of patients was appointed and held second-look laparoscopy, where peritoneoplasty and additional endocoagulation of remaining endometrioid heterotopias were performed.
Results: Past studies on the effectiveness of treatment of infertility in women with external endometriosis using second-look laparoscopy allowed to determine: 92.8% of patients experienced a positive effect (disappearance of clinical symptoms) and 58% of cases resulted in pregnancy.
Conclusions: According to our data, the use of three-step method of treatment (1-laparoscopic destruction of endometriosis, 2 - hormonal therapy GnRH agonists, and 3-second-look laparoscopy- peritoneoplasty and control treatment) gives high positive results in the onset of pregnancy, compared with two-stage method of treatment (destruction foci, followed by hormone replacement therapy), as adhesions, which accompany the external endometriosis, recurrent and lead to infertility in this disease. As a conclusion I would like to sum up all my previous points of research. The second-look laparoscopy is a new and promising method of diagnosis and can be an important a phase of complex treatment of patients with complicated forms of endometriosis because f allows not only to perform effective treatment, but also to determine further tactics in treating such patients.

Profile of female genital tract tumours at Bahawalpur-Pakistan

ESC-ID: 649
Authors: Alam MI, Ullah E, Abbas R, Rasool BMZ
Country: Pakistan
University: University of Health Sciences, Lahore , Department: Department of Pathology

Background: Frequencies and incidence rates of site-specific cancer and other pathological lesions are reported regularly by different studies, but mostly not by the histological type within site. This report reviews data of 3 years from 2004-06, from the files of Department of Pathology Quaid-e-Azam Medical College/Victoria Hospital Bahawalpur, of different surgical biopsies and resections from the female genital tract submitted for diagnosis.
Methods: Data of the surgical specimens of uterus, ovary, vulva, vagina and cervix submitted to the Department of Pathology was reviewed and analyzed for, age, type of specimen, tissue of origin, different diagnosed histological types and finally the behaviour of condition i.e. benign or malignant.
Results: 1373 surgical specimens of female genital tract were submitted in 3 years, out of which 101 (7.4%) were malignant. 29 % and 28% of the neoplasms were from cervix and vagina respectively followed by vulva (17%), and then ovary and uterus (12% each). Squamous cell carcinoma was the most common invasive malignancy of the cervix (86%), vulva (77%), and vagina (71%). Adenocarcinoma was the most frequent malignancy in the uterus (53%) and ovary (61%). The 73% of the burden of benign disease was contributed by uterine lesions, 3/4th of them being leiomyoma and endometrial hyperplasia.
Conclusions: Squamous cell carcinoma was the most frequent malignant tumour of the cervix, vagina and vulva. Adenocarcinoma was the most common malignancy in ovary and uterine corpus. Epidemiologic studies may provide more definite information by considering the effect of these subtypes in examining risk factors.

Quality of life in women with urinary incontinence.

ESC-ID: 924
Authors: Vujanic T, Vlajankov A, Mladenovic-Segedi L
Country: Serbia
University: University of Novi Sad , Department: Medical faculty

Aim: The Aim of this study is to asses the quality of life in women with urinary incontinence.
Methods: Forty-seven female patients with urinary incontinence were enrolled and fifty patients without any urinary symptoms, as a control group. To estimate the severity of urinary incontinence symptoms it was used the Urinary distress inventory- 6, which is part of Pelvic floor distress inventory - short form 20. To estimate the quality of life in women with urinary incontinence it was used the Urinary impact questionnaire- 7, which is part of Pelvic Floor impact questionnaire - short form.
Results: According to the Urinary distress inventory- 6, 12.8% of patients had low severity of symptoms, 68.1 % had moderate and 9.1% of patients had great severity of symptoms of urinary incontinence. There was a significant difference in Urinary distress inventory- 6 score between group of patients with urinary incontinence and control group (t=22,209, p<0, 01). At the same time, according to the Urinary impact questionnaire- 7 (UIQ-7), 44.7% of estimated patients had considerable decreased quality of life, 31.9% had moderate, 17.0% had low and 6.4% had very low decreased quality of life. There was also a significant difference in Urinary impact questionnaire- 7 score between women with and without urinary incontinence (t=18,384, p<0, 01).
Conclusions: About 87% of patients with urinary incontinence had moderate to great severity of symptoms of urinary incontinence. Urinary incontinence in more than 50% of estimated patients had significantly negative impact on quality of life.

The advent of PCOS in young epileptics on antiepileptic drug therapy

ESC-ID: 971
Authors: Ohri S, Kedia R
Country: Bulgaria
University: Medical University - Pleven, Department: Gynaecology

Epileptic females in their reproductive ages on broad spectrum AEDs (Antiepileptic Drug) seem to show an increased occurrence of PCOS (Polycystic Ovarian Syndrome), or PCO (Polycystic Ovaries). Especially those on monotherapy with Valproate, Carbazapines or both.These drugs show high anti seizure efficacy, gradually symptoms such as amennorrhoea, weight gain and hormonal changes begin to develop. The investigation of these endocrine problems in such epileptics, requires understanding between neurologists, endocrinologist and gynecologists. PCOS is a complex metabolic disorder seen in reproductive women characterized by ovulatory dysfunction, hyperandrogenism, and exclusion of other endocrinopathies. These women have an increased risk of miscarriage, insulin resistance, hyperlipidemia, type 2 diabetes, cardiovascular disease, and endometrial cancer. While PCO is the presence of multiple ovarian cysts 2-8

mm in diameter and increased ovarian stroma; this condition is not pathologic but may also occur due to AEDs. Studies conducted by Isojarvi et al.; Morrelle et al in 2002 show the same. However there is no relation to any specific seizure type. This iatrogenic PCOS usually disappears once the causative AED therapy is stopped and another adequate AED having equal anti epileptic efficacy has been added. However this change in drug should be done with extreme caution.
Conclusion: The treatise so reached on the basis of clinical evidence seen is that there is a high probability of PCOS in young female patients on AED's and thus must be kept in mind before treatment of such patients who have a higher predisposition towards weight gain and amennorrhoea

Diagnostic reliability of biopsy in the early discovery of precancerous and cancerous lesions on the cervix

ESC-ID: 1229
Authors: Dikic M
Country: Serbia
University: University of Novi Sad Faculty of Medicine , Department: Oncology Institute of Vojvodina

Introduction: Diagnosis of cervical intraepithelial changes presents a combination of cytology, colposcopy, biopsy and endocervical curettage, and the definite diagnosis is made after the pathohistological review of material obtained from the application of one of the excision techniques.
The aim: The goal of this paper is to compare and analyze the obtained pathohistological results of the bioptate and conizate.
Materials and methods: The research included 130 female patients to whom, after a cytological smear using the Papanikolaou method, a colposcopically aimed biopsy was done. On the basis of the pathohistological results of the bioptate, a suitable excisional technique was used on the patients: a conization using knife, laser, or loop electrosurgical excision procedure. On the basis of the pathohistological review of the bioptic material and the conizate, the degree of precancerous lesion is determined in each of them. In the statistic processing of the data, a paired samples t-test is used.
Results: Most of the precancerous and cancerous changes were diagnosed in the age group of 31-40 years 45,4% (59/130). There was a discrepancy between the result of the biopsy and conization with 58,5% (76/130) of the patients. With about 6% of the patients, an invasive carcinome was not verified by biopsy.With the application of the t-test paired samples, it was confirmed that there is a statistically meaningful difference between the pathological diagnosis obtained by the examination of the bioptate and the diagnosis that is made by the pathohistological examination of the suitable conizate.
Conclusions: The most common discrepancy in the pathohistological result of the bioptate and the conizate was confirmed with the group of patients above the age of 30, with a higher degree of dysplasia on the cervix. Slight dysplastic changes diagnosed by biopsy require a conservative approach due to the fact that the mostly negative result on the conus after excision techniques was in this group. It is necessary to insist on one of the excision techniques as a diagnostically and therapeutically acceptable method with women over the age of 30 and with a higher degree of dysplasia on the bioptic material.

Ovarian reserve in smoking patients

ESC-ID: 1262
Authors: Mitrovic A, Mihailovic A, Babic M, Garalejic E
Country: Serbia
University: Medical University in Belgrade , Department: gynecology

Introduction: Infertility is hard and serious medical problem because in high percentage consist damage of reproductive organs. In situations without other solution we use procedures of assisted reproductive technology (ART).
The aim: The aim of our study was to examine the effects of nicotine on ovarian reserve.
Material and Methods: Our research study was carried on 340 patients who were submitted on IVF procedure in 2009 in our clinic. The patients were divided in 2 groups depending of smoking habit. We analysed result of IVF procedure, level of FSH, number of ovarian follicles after stimulation, number of oocytes after punction and number of embrions in this procedure.
Results: The average age of the surviving patients was 33,25, from 25 to 37 years. From overall number of patient (340), 65% (220) are non smokers and 35% (120) are smokers. When we observing efficacy of IVF procedure, pregnancy rate was 28,82% (98), 67 in group of non smokers (30,54%), and 31 in group of smokers (25,83%) ($p>0,05$). The average number of follicles after stimulation in non smoking group was 7,12, in first smoking group 6,36, second 5,61 and third 5,36 ($p<0,05$). The average number of oocytes after punction in non smoking group was 8,80, in first smoking group 8,60, second 8,57 and third 7,53 ($p>0,05$). The average number of embrions in this procedure in non smoking group was 3,17, in first smoking group 3,17, second 3,04 and third 3,28 ($p>0,05$). The basal level of FSH in non smoking group was from 0,20 to 15,97, and average value was 6,99 UI/L, as in smoking group was from 2,5 to 15,5, and average value was 8,09 UI/L ($p>0,05$).
Conclusions: Although we show significant effect of nicotine only on follicles number, we always have to observe smoking as factor with bad effects on human health.

Polymorphism A2 In platelet glycoprotein IIb/IIIa among patients with pulmonary embolism and deep venous thrombosis

ESC-ID: 1267
Authors: Sachdeva M, Ivanov P, Komsa-Penkova R, Ivanov Y, Beshev I
Country: Bulgaria
University: Medical University - Pleven , Department: medicine

Background. The gene encoding the platelet glycoprotein IIb/IIIa (GP IIb/IIIa) shows polymorphism A2 (PlA2) related with arterial thromboisis. The role of the PlA2 in venous thrombosis development is still controversial. In case-control study we investigated whether the PlA2 is associated with deep venous thrombosis and pulmonary embolism.

Methods: A total of 132 unrelated patients with isolated DVT (74 patients), PE (31 patients) or both DVT and PE(27 patients) and 139 healthy control subjects were investigated for PlA2 by a PCR based on restriction-fragment length polymorphism.
Findings: Prevalence of PlA2 was significantly higher in all the subgroups of the patients compared to controls respectively (37.8% (p=0.001), 38.7% (p=0.005) and 37% (p=0.04) respectively for patients with DVT, PE, PE/DVT) versus controls (15.8%). The odds ratio of the PlA2 allele for patients in all subgroups remains similar after adjustment for carrier status for inherited thrombophilia (factor V Leiden and prothrombin 20210A) and after adjustment for age. Only patients with isolated PE after exclusion of inherited thrombophilia present higher prevalence of PlA2 (45.8% compared to 38.7% in all isolated PE patients).
Interpretation: A stronger association between PlA2 and PE development compared to DVT development was found. An independent impact of PlA2 for venous thrombosis was not established. That supposed an interaction between PlA2 and inherited thrombophilic factors in venous thrombosis/embolism development.

A longitudinal audit of the treatment of (pre-) cancerous lesions of the cervix

ESC-ID: 1271
Authors: Knegt Y
Country: The Netherlands
University: Leiden medical university , Department: medical faculty (LUMC)

Background: While most women in industrialized countries have easy access to cervical cancer preventive services, women in the developing world generally lack this access. Cervical cancer is the second most common form of cancer amongst South African women. An audit was applied to test the hypothesis that women in South Africa, in the rural areas, do not attend treatment for cervical disease sufficiently. The audit was done on the data of pap-smears and colposcopy attendance to test the hypothesis of lack of attendance for colposcopy; also to recognize cofactors adding to it such as HIV, age of women, months of attendance for pap-smear and colposcopy and progression of disease.
Material and method: Audit analyzes the attendance of patients within the Eastern Cape, with abnomal cervical smears to the colposcopy clinics and their outcomes. Lab results for pap-smears and cervical biopsies of 928 patients were gathered and analyzed using the chi- square method and the independent t-test to evaluate their statistical value. Data included name and hospital number, source of specimen, cytology or histology results and recommendation. Useful information such as HIV status and ARV treatment, age, months of attendance and CIN staging were gathered and analyzed with SPSS to evaluate their statistical significance.
Results: Relatively low number of patients visiting colposcopy clinics after an abnormal pap-smear; 501 (54%) from the 928 patients: half of the patients with definite abnormalities did not attend for treatment. HIV, age, month of attendance and staging of the lesion formation did not have a statistically significant influence on (non-)attendance behaviour.
Conclusions: A significant lack of attendance for colposcopy and treatment after having abnormal pap-smear results. The factors concidered in the research however do not explain this non-attendance behaviour. Long distance travelling, hospital reputation and the level of involvement of hospital staff, could be of cociderable relevance; further attention to these issues are needed. 'Sea and treat' programs such as the Female Cancer Foundation applies are advisable to detect abnormalities and treat them on the spot.

The pathology of the umbilical cord in fetal distress

ESC-ID: 1292
Authors: Albulescu VI, Brisan C, Bernad ES, Bernad SI, Muntean I
Country: Romania
University: University of Medicine and Pharmacy "Victor Babes" Timisoara, Romania , Department: Obstetrics and Gyneacology

Aim: Cord pathology is quite common in cases of fetal distress or antepartum death. Decreased blood flow or temporary stop at this level over time can lead to inadequate oxygenation of the fetus, sometimes followed by severe brain damage, with irreversible consequences on the newborn.
Methods and materials: We conducted a retrospective study held from 01.01.2008 to 12.31.2009 at the Department of Obstetrics and Gynecology „Bega“, Timisoara, Romania. There were 5332 births occurred naturally or by cesarean section. It had been recorded a total of 43 antepartum deaths. Using the 2D, 3D ultrasound examinations and Doppler velocimetry in the antenatal period, we identified the umbilical cord pathology. Each patient had at least 2 ultrasound examinations over the period of the study. We correlated these data with the fetal wellness at birth appreciated using the APGAR index. There were noted the associated pathology also.
Results: From all the births, there were 427 patients where was present least than one problem related with the umbilical cord. The results of the study had showed clearly that, at the umbilical cord can appear different type of pathology which can cause fetal distress, especially in labor. In some cases, it may be the cause of the intrapartum fetal death, by involving the fetal blood flow. We identified both developmental abnormalities of umbilical cord, like anomalies of insertion, length abnormalities, tumors, vascular abnormalities, and accidental disease - single or multiple ring cord, knots, torsions. Among the patients with antepartum fetal death, 41% had one or more pathology related with the umbilical cord. The correlation of the ultrasound examination in the third trimester and in labor is very important for a correct evaluation of fetal status. These can give us more information to accentuate any problems. In this way, the obstetricians can decide the optimal time of fetal extraction. They can identify the circumstances to prevent intrauterine death or/and brain anoxia on the fetus also.
Conclusions: The study of the blood flow using the Doppler velocimetry must include the majority of the fetal vessels, including the blood vessels of the umbilical cord. We must not forget that some pathology of the cord can seriously affect the fetus, causing in time intrauterine growth retardation or acute fetal distress.

The dynamics of HPV infection at pregnant and latelyconfined women

ESC-ID: 1316
Authors: Marinas M, Marinas A, Tanase F, Enache A, Vilcea A
Country: Romania
University: UMF Craiova , Department: Obstetrics Gynaecology

Introduction: Our survey aims at investigating the cervical status of pregnant women on the first quarter as regards HPV infections.The survey was carred on 125 expecting mothers from Clinic no 1 Obstetrical-Gynaecology of University Hospital Craiova.This women presented risc CIN factors and the evaluation of the risc level depends on: the social status, the marital status , the period of gestation, the number of partners, the number of pregnancies, smoking.
Method: HPV method of detection was genotypes at Synevo laboratory.
Results: 45% pregnant women with no hpv infections - 28% pregnant women of high risk -37% pregnant women of low risc Cervix adjustment that are not related to the presence or absence of the virus, were noticed in the cervix exfoliating cytology (BETHESDA test): - ASC-US - 5 pacient - H-SIL - 3 pacient - L-SIL - 7 pacient.
Conclusion: The two investigations BETHESDA-Papanicolau cytology and HPV genotypes on expecting mothers within three mounth of pregnancy must be complementary and non exclusive.

The association between gestational diabetes mellitus and body mass index in pregnancy

ESC-ID: 1468
Authors: Zekovic A, Bojovic O
Country: Serbia
University: Belgrade , Department: gynecology

Background: Body mass index (BMI) is a commonly used parameter through which we can estimate obesity, which is a major threat to health. Obesity in pregnancy carries significant risk of complications such as gestational diabetes mellitus or pregnancy-induced hypertension, which shows greater tendency to report in a group of obese pregnant women, which also leads to possible formation of various consequences on the fetus.
Objective: The aim of our study was to examine the impact of obesity on the course and outcome of pregnancy, and to estimate if there is an association between high value of BMI and the incidence of gestational diabetes mellitus.
Material and methods: Our randomised prospective study involved 70 pregnant women, divided by the value of their BMI, as increased or optimal, in two groups. In both groups we measured the frequency of hypertension, gestational diabetes mellitus, macrosomia of fetuses and intrauterine growth restriction. We also followed the frequency of spontaneous abortions and Caesarean section in both groups of pregnant women.
Results: The number of spontaneous abortions was significantly higher in the group of patients with higher BMI (29% vs. 21%). Our results showed that the same group of patients, showed higher incidence of all examined health problems than the other group of parients with normal BMI - gestational diabetes mellitus (26% vs. 8%), macrosomio of fetus (20% vs. 4%) pregnancy hypertension (48% vs. 33%) and intrauterine growth restriction (17% vs. 4%).
Conclusions: The conclusion of our research is that there is an explicit association with maternal obesity and gestational diabetes mellitus, and some others risk factors in pregnancy that is reflected in a higher incidence of maternal and fetal disease, related to gestational period

Risk Factors for Placental Abruption in Singleton Pregnancies

ESC-ID: 1480
Authors: Janjic T, Ivanisevic I, Stankovic I, Isakovic A, Gusic N
Country: Serbia
University: School of Medicine, University of Belgrade , Department: Institute for Gynecology and Obstetrics

Introduction: Placental abruption is one of the leading causes of bleeding in the second half of the pregnancy and perinatal mortality.
Aim: To identify risk factors for placental abruption in singleton pregnancies, with assesment of the influence of abnormal placentation; to determine which period of the pregnancy is at specially high risk of abruption, and to asses subsequent perinatal outcome.
Methods and Materials: Seventy-two women with singleton pregnancies complicated by acute placental abruption delivered by cesarean section at the Institute for Gynecology and Obstetrics between August 2005 and December 2006 were identified retrospectively. Control group was comprised of 50 women without placental abruption who delivered in the same period.
Results: Placenta previa preceeded placental abruption in 9(12.5%) cases, in comparison to only 1(2%) in the control group, increasing the risk for placental abruption 7 times. Every fourth multiparous woman in the abruption group had a history of previous cesarean delivery. The frequency of entities related to abnormal placentation - PIH, preeclampsia, eclampsia and SGA neonates was 25%, but these dod not prove to be independent risk factors for placental abruption. The delivery in the abruption group took place significantly earlier (36.4 ± 3.3 gestational weeks vs 38.3 ± 2.1 weeks, $p = 0.001$). The risk of placental abruption decreased for 20% for every gestational week, starting with 36th week. Neonates from the pregnancies complicated by placental abruption had significantly lower Apgar score at birth (6.65 vs 8.42, $p<0.01$), and significantly lower birth weight (3335g vs 2794.6g, $p<0.01$).
Conclusion: Placental abruption continues to be an important cause of poor perinatal outcome. Clinical entities related to abnormal placentation dod not prove to be independent risk factors for placental abruption. Late third-trimester singleton pregnancies complicated by placenta previa are under a high risk of developing placental abruption.

Session: Haematology / Oncology 1

Evaluating the Role of Sirtuins in Breast Cancer

ESC-ID: 481
Authors: Curle J, McGlynn LM, Zino S, Edwards J, Shiels PG.
Country: United Kingdom
University: University of Glasgow , Department: Medicine

Breast cancer is the most commonly diagnosed cancer in the UK. Incidence increases as a function of chronological age, thus genes involved in biological ageing may provide a useful insight into tumourigenesis. Genes which regulate genomic stability and repair of cellular damage potentially link biological ageing and cancer. One such group of genes are the Sirtuins, orthologues of the yeast SIR2 gene, which is an epigenetic regulator of biological age. Seven sirtuins (SIRT1-7) have been identified in man, where they are involved in regulation of cellular stress and damage responses. Differing transcriptional expression of several Sirtuins has been found in various cancers. The function of the individual Sirtuins is still ill defined. A definitive SIRT5 function is as yet unconfirmed, though it is known to be localised to the mitochondrion while SIRT6 plays a role in base excision repair (BER) and SIRT7 localizes to the nucleolus where it regulates transcription of the rDNA cluster. This study investigated the utility of evaluating the post transcriptional expression levels of SIRT5, 6 and 7 in assessing breast cancer risk and outcomes. It used immunohistochemistry to determine protein expression levels of SIRT5,6 and 7 in tumour biopsies from a cohort of oestrogen receptor positive breast cancer patients (n=392). Analysis of SIRT5 and SIRT7 expression yielded no significant associations with any clinical parameters investigated. Results obtained for SIRT6 indicated that mean time to relapse, which occurred after 5 years post diagnosis, was significantly shorter in those with low SIRT6 expression (13.41years 95% CI 11.767-15.044) compared to those with high SIRT6 expression (15.84 years 95%CI 14.510-17.164 p=0.032). Patients with low SIRT6 had a 2.26 times greater risk of relapse after 5 years than those with high SIRT6 expression (range1.048-3.417 p=0.038). In progesterone receptor (PR) positive patients, mean time to relapse, which occurred after 5 years post diagnosis, was shorter in those with low SIRT6 expression (13.38 years 95%CI 11.189-15.573) compared to those with higher SIRT6 expression (16.902 years, 95% CI 16.198-17.606 p=0.045). These results show low SIRT6 expression is associated with decreased time to long-term relapse, as patients are unable to maintain genomic integrity due to decreased BER capacity. Furthermore, low SIRT6 expression overrides the beneficial effects of PR positivity, suggesting maintenance of genomic stability is more important than PR status in terms of recurrence. Consequently, SIRT6 has potential as novel prognostic marker.

The role of mTOR activation in apoptosis in myeloid cell lines.

ESC-ID: 636
Authors: Lojek M, Sajjad EA, Hutnik L, Wlodarski P, Mlynarczuk-Bialy I
Country: Poland
University: The Medical University of Warsaw , Department: The Department of Histology and Embryology

Introduction: Protein synthesis is essential for cell growth and proliferation. One of its major regulators is a protein kinase mTOR, whose downstream effectors such as S6 ribosomal protein and eIF4E regulate translation. PI3K/PTEN/Akt/mTOR pathway is activated in a variety of cancers, including leukaemia. Similarly, activation of the Raf/MEK/ERK pathway, which plays a key role in control of proliferation, cell cycle progression and prevention of apoptosis, is often observed in neoplastic cells. Here we report on the crosstalk between these two pathways in myeloid cell lines.
Aim: The aim of the study was to examine effects of selective inhibition of the mTOR and ERK pathways on induced apoptosis in myeloid cell lines.
Materials and Methods: Apoptosis in cell lines HL60, K562, U937 and CHO (as a control line) was induced using UV light and was evaluated by flow cytometry (Annexin V staining). The following pathways' inhibitors were used: Rapamycin (mTOR, 20nM), U0126 (MEK, 10mcM), LY294002 (PI3K, mTOR, 50mcM). To examine the influence of the inhibitors on activation of the pathways, the kinases' phosphorylation was determined by SDS-PAGE and western blot with appropriate antibodies.
Results: UV light applied on HL60, K562, U937 or CHO cells increased apoptosis (AnV(+) cells) by 132%, 137%, 106% and 71%, respectively. Inhibition of mTOR by Rapamycin in the absence of UV light lessened the number of apoptotic cells by 22%, 37%, 20%, and 38%. The same inhibitor in cells after UV treatment decreased the number of apoptotic HL60 (by 23%) and K562 (by 3%) cells and increased by 164% AnV(+) U937 cells and by 8% AnV(+) CHO cells. MEK inhibitor influenced the number of apoptotic HL60, K562, U937 and CHO cells as follows - without UV by: -32%, -36%, -10%, 1% and after UV by: -7%, 12%, 163%, 21% respectively. The number of AnV(+) K562 and CHO cells incubated with PI3K inhibitor and without UV treatment was lower by 1%, whereas the number of HL60 and U937 rose by 5% and 400% respectively. After applying UV light the differences in AnV(+) HL60, K562, U937 and CHO cells were respectively -51%, -36%, 211%, 63%. Western blots revealed that mTOR was activated in these lines and Rapamycin treatment inhibited its activation. U0126 decreased activation of Erk, and LY294002 decreased phosphorylation of mTOR target - S6rp. In HL60 and U937 lines, inhibition of MEK strongly decreased mTOR pathway as determined by WB. No such effect was observed in K562 cells.
Conclusions: Our study shows that activation of mTOR and MEK/ERK increases percentage of apoptotic cells in the absence of UV light. Their response to the kinase inhibitors after the proapoptotic factor treatment was twofold: in CHO cells and a particularly strongly in U937 cells both pathways revealed some antiapoptotic influence. In HL60 cells, the pathways acted more proapoptoticly. mTOR activation in K562 seems to augment apopto-

sis, while Erk activation protected form apoptosis. We conclude therefore that MEK inhibitor mimics the effect of Rapamycin or LY only in cells, where mTOR activation depends on ERK activity.

Loss of Therapy-Induced Senescence in Myc-driven Lymphomas Compromises Treatment Outcome in vivo

ESC-ID: 671
Authors: Dörr JR, Yu Y, Loddenkemper C, Keller U, Buck AK, Dörken B, Schmitt CA
Country: Germany
University: Charité-Universitätsmedizin Berlin , Department: Hematology, Oncology, Tumor Immunology

Introduction: Premature senescence, a terminal cell-cycle arrest condition, reflects an acute cellular stress response upon a variety of cellular insults including oncogene activation and chemotherapeutic DNA damage. Therefore, senescence complements apoptosis as a safeguard program and tumor-suppressive mechanism. Here, we employ the Eμ-myc mouse lymphoma model with and without intact alleles of the histone H3 lysine 9 (H3K9) methyltransferase Suv39h1 (controlling senescence) and of p53 (mediating both apoptosis and senescence) to demonstrate a critical role for senescence in cancer therapy in vivo.
Methods: Lymphoma cells (LCs), retrovirally transduced with bcl2 to block apoptosis, were treated with the DNA damaging agent adriamycin (ADR) in vitro, or were exposed to the alkylating agent cyclophosphamide upon lymphoma formation in normal immunocompetent mice in vivo. TIS was analyzed by senescence-associated β-galactosidase activity (SA-β-gal), Ki67 staining and BrdU incorporation. Tumor formation, therapy and progression in vivo were monitored by whole body fluorescence and luciferase imaging and 18F-fluoro-deoxyglucose (FDG) and 18F-fluoro-deoxythymidine (FLT) positron emission tomography (PET). Progression-free and overall survival were evaluated using the Kaplan-Meier method. Glucose and oxygen consumption rates as well as lactate and ATP production in vitro were used to determine a senescence-related energy consumption profile.
Results: Bcl2-protected control (i.e. no further defined genetic defects) LCs, but not Suv39h1- or p53-deficient LCs, enter treatment-induced senescence (TIS) in vivo as evidenced by uniform SA-β-gal reactivity, negative Ki67 staining and loss of BrdU incorporation. Notably, Suv39h1- lymphomas recapitulate the proliferation rate and sensitivity to drug-induced apoptosis of control lymphomas, but display significantly shorter progression-free and overall survival after chemotherapy in vivo. Despite their stable growth arrest senescent lymphomas exhibited a higher glucose uptake and energy consumption rate when compared to untreated counterparts or senescence-refractory, ADR-treated Suv39h1- lymphomas. Accordingly, TIS LCs can be non-invasively detected by a positive FDG- but negative FLT-PET scan.
Discussion: The study demonstrates that Suv39h1 acts as an essential mediator of TIS without compromising apoptosis or altering lymphoma cell proliferation. TIS lymphomas display high levels of glucose metabolism and hence can be detected by FDG-PET despite their resting condition, indicating that a positive post-therapy FDG-PET scan in the clinic does not necessarily reflect a growing tumor lesion. In vivo, Bcl2-protected Suv39h1- lymphoma-bearing mice succumb dramatically fast to their disease after chemotherapy reminiscent of p53null lymphoma-bearing mice. Hence, Suv39h1-controlled TIS is a critical component of cancer therapy in vivo and significantly extends progression-free and overall survival of the host.

Gene expression analysis of p53 target genes in cellular senescence

ESC-ID: 708
Authors: Gerhardt A, Dörr JR, Lee S, Dörken B, Schmitt CA
Country: Germany
University: Charité - Universitätsmedizin Berlin , Department: Hämatologie/Onkologie

Introduction: Cellular senescence is a permanant cell cycle arrest occuring as a G1 growth arrest in ageing cells or in response to acute cellular stresses, such as oncogene activation or exposure to DNA damaging chemotherapy. This failsafe mechanism depends on the activity of the tumor suppressor p53: Restoration of p53 activity delays tumorigenesis in Myc-driven lymphomas and induces senescence in Ras-driven liver carcinoma. Despite their growth arrest, senescent cells remain viable and show widespread changes in gene expression. They are metabolically active and have a distinct senescence-associated secretory profile (SASP), which reinforces the senescent arrest in a cell autonomous and autocrine fashion. Here we use a regulatable p53 (p53ERTam) in the Eμ-myc mouse model to delineate the impact of p53 target genes in the establishment and maintenace of premature senscence.
Methods: Lymphoma cells (LCs) from different genetic backgrounds (ctrl., i.e. no further genetic defect, p53null, p53 ERTam) were retrovirally transduced with the bcl2 gene to block apoptosis. Subsequently, they were treated with the DNA damaging anticancer agent adriamycin or Tamoxifen to induce senescence in vitro. Senescence was detected based on senescence-associated-β_s-galactosidase activity (SA-β-gal). Cell cycle analyses was performed by BrdU/PI staining and Western Blotting. The induction of p53 target genes and other senescence-associated genes, such as components of the SASP, were analysed by real time PCR.
Results: Adriamycin treatment induces senescence in ctrl. lymphoma cells, but not in p53-deficient LCs as evidenced by uniform SA-β-gal reactivity, loss of BrdU incorporation and SASP production. Similarly, restoration of p53 function in the inducible p53ERTam system with Tamoxifen shows comparable SA-β_s-gal staining and cell cycle arrest, but has a markedly reduced SASP. Furthermore we observe dynamic changes in gene expression from activation of p53 (4 hours after Tamoxifen administration) to the establishment of senescence (day 5 after Tamoxifen). Thereby we could delineate subsets of p53 target genes which are eihter upregulated early in the course of senescence or later when the phenotype is firmly established or which belong to both conditions.
Discussion: Bcl2-protected control (i.e. no further defined genetic defects) LCs, but not p53-deficient LCs, enter treatment-induced senescence (TIS). Senescence upon reactivation of p53 shows similar phenotypical

changes but differs in the dynamics of gene expression. Therefore, dissecting the role of p53 target genes in senescence may help to selectively utilize p53 activity in cancer therapy.

Prognostic relevance of dysregulations of mitochondrial apoptosis and mTOR signaling in acute myeloid leukemia

ESC-ID: 828
Authors: Egervari G, Hampel M, Bernhard J, Daniel PT.
Country: Hungary
University: Charité-Universitätsmedizin, Berlin, Department: Experimental and Clinical Research Center

The search for prognostic molecular markers in acute myeloid leukemia (AML) which may assist in predicting clinical outcome has recently focused on genes involved in the regulation of programmed cell death (PCD, apoptosis). Investigators have also reported data implying the mammalian target of rapamycin (mTOR) pathway is aberrantly activated in haematological malignancies including AML. The aim of the present study was to determine whether messenger RNA (mRNA) levels of anti- and pro-apoptotic members of the bcl-2 family (23 genes) and mRNA levels of members of the mTOR signaling pathway (18 genes) are independent prognostic parameters for outcome in AML patients. Transcript levels were measured by real-time quantitative polymerase chain reaction (Q-PCR) of 146 samples from 119 AML patients collected either at diagnosis or at relapse. The study was restricted to patients for whom full clinical history was available. Patients who underwent stem cell transplantation were censored at the time of transplantation. All the patients were screened for chromosomal abnormalities and were tested for the nucleophosmin 1 (NPM1) and fms-like tyrosine kinase 3 (flt3) mutations reported to be good prognostic indicators. Kaplan-Meier survival analysis was performed using the SPSS statistical program. We found significantly longer survival in patients with expression levels greater than the median value for Raptor or TSC2 at diagnosis ($p = 0,037$ and $p = 0,044$ respectively). Furthermore, we could discern 4 groups who had better outcome, these were patients with (i) wildtype flt 3 gene and with less than median bmf expression levels ($p=0,033$), (ii) non-mutated NPM1 with increased expression of bcl-xl ($p=0,0039$), (iii) mutated NPM1 with increased bcl-xl mRNA levels ($p=0,007$) and (iv) mutated NPM1 with increased PDK2 transcripts ($p=0,028$). We also observed improved outlook for patients with normal karyotype in combination with low levels of bmf ($p=0,001$) or high levels of PDK2 ($p = 0,017$) or Raptor ($p=0,004$). In addition patients with complex aberrant karyotype and upregulated bmf ($p = 0,027$) or downregulated bfk ($p=0,013$) or TSC1 ($p = 0,049$) were associated with significantly better outcome. Our data imply that mRNA levels of specific bcl-2 family members or genes in the mTOR pathway correlate significantly with clinical outcome of AML patients. Therefore, quantification of transcript levels of these genes may serve as a new and promising set of prognostic markers in AML and thereby assist in optimising clinical management.

MDR1 expression serves as a pharmacogenetic marker for the prediction of molecular, cytogenetic and clinical outcome on 2nd line nilotinib therapy in imatinib-resistant CML patients

ESC-ID: 834
Authors: Agrawal M, Erben P, Hanfstein B, Popa J, Hofmann WK, Leitner A, Hochhaus A, Müller MC
Country: Germany
University: Mannheim Medical Faculty, Heidelberg University, Department: III. Medizinische Klinik

Introduction: Overexpression of the efflux transporter protein multidrug resistance 1 (MDR1) has shown to be involved in the resistance to imatinib and nilotinib. However, we could demonstrate in earlier studies that patients showing high MDR1 mRNA expression levels prior to the onset of nilotinib seemed to benefit from 2nd line therapy with nilotinib based on its 20fold higher BCR-ABL specificity and increased intracellular drug levels compared to imatinib. This does not necessarily correlate with the functional property of the protein. High MDR1 expression may be a surrogate for functionally impaired MDR1 proteins due to SNPs which are under evaluation. We assessed the predictive impact of MDR1 expression levels and pretreatment tumor load of imatinib resistant CML patients on the molecular, cytogenetic and clinical outcome during 2nd line therapy with nilotinib.
Methods: Imatinib resistant patients in chronic phase CML treated with nilotinib (n=84) were investigated within the phase-II study AMN2101. MDR1 and BCR-ABL mRNA expression levels were determined by qRT-PCR using LightCycler technology, normalized against beta-glucuronidase (GUS) and standardized according to the international scale (IS). Log-rank tests were performed to compare the time to major molecular remission (MMR), complete cytogenetic remission (CCyR) and progression-free survival (PFS).
Results: After 12 or 24 months, patients with MDR1/GUS ratios X05;2.0 (62%) achieved MMR in an estimated rate of 34%, whereas those with initial MDR1/GUS ratios <2.0 (38%) showed MMR in 13% ($p=0.030$). Further, BCR-ABL load prior to nilotinib revealed a significant impact on consecutive molecular response. BCR-ABL IS <28% separated best concerning prediction of MMR after 12 and 24 months (58% vs 20% and 58% vs 36%, $p=0.0013$). CCyR was attained in 52% and 57% of the patients with MDR1/GUS ratios X05;2.0 after 12 and 24 months, whereas those with MDR1/GUS ratios <2.0 showed CCyR in 25% and 35% ($p=0.036$). Moreover, a MDR1/GUS ratio at 2.0 also significantly dichotomized two groups for achievement of PFS: patients presenting MDR1/GUS ratios X05;2.0 reached PFS rates of 88% and 73%, whereas those with MDR1/GUS ratios <2.0 attained PFS in 71% and 50% after 12 and 24 months ($p=0.036$).
Conclusions: Pre-treatment expression levels of MDR1 predict MMR, CCyR and PFS of imatinib resistant chronic phase CML patients within the first two years of treatment with nilotinib. These findings might allow risk stratification in order to tailor the individualized second line therapy in CML and are undergoing prospective validation.

Status of estrogen, progesterone and her-2/neu receptors in breast cancer

ESC-ID: 861
Authors: Lumturije G, Kushtrim SH, Rame A, Adriatik K, Esat B, Ardita K
Country: Kosova
University: University of Prishtina , Department: General Medicine

In our studies we determined levels of estrogen (ER), progesterone(PgR) and HER-2/neu receptors of 138 patients diagnosed as breast cancer of different histological types. Interpretation of both ER and PgR is done according to Remele and Stegner method while HER-2/neu is interpreted as:negative, undetermined and positive. All 138 cases are divided and evaluated in three groups according to the age: 1)under 40 years old 2)from 40 to 49 and 3)over 50 yearsold. ER was positive in 33.3% of cases in group 1 (<40 years old), 31.3% in group 2 (40-49 years old), and 47.8% in group 3 (>50 years old). Progesterone receptors are positive in 28.6% of cases in group 1,39.6% in group 2, and 36.2% in group 3. HER-2/neu receptors are positive in 43.8% of cases in group 1, 21.9% of cases in group 2 and 31.4% in group 3. In three group there was no significant distinction about positivity of ER and PgR receptors ($p>0.05$). In patients younger than 40 years old (included in group 1) HER-2/neu was positive in 43.85% of cases and distinction was significant ($p<0.05$).

Targeted supression of leukemia-related oncogene c-kit by RNA-interference

ESC-ID: 984
Authors: Nikitenko NA, Rulina AV, Spirin PV, Orlova NN, Stocking C, Prassolov VS
Country: Russia
University: Russian State Medical University , Department: Medicobiological

The evaluation of the functional role of oncogenes frequently affected by mutations or chromosomal aberrations in acute myeloid leukemia patients is important both for molecular biology and for practical medicine. One of the main approaches for such studies is the transfer and expression of activated oncogenes in cells, both in vitro and ex vivo, and their targeted silencing by interfering RNAs. KIT, receptor tyrosine kinase, is a product of oncogene c-kit. This receptor ligand (stem cell factor) combination is important for normal hematopoiesis. Activating mutations of c-kit and its hyperexpression are frequently found in patients with acute myeloid leukemia (about 6% and 80% respectively). Our aim was to develop the approach for significant reduction of c-kit expression by RNA-interference. Previously, to express the activated oncogene in the model cell line a set of bicistronic retroviral vectors containing leukemia-related oncogenes and eYFP (enhanced yellow fluorescent protein) cDNAs, separated by IRES sequence were constructed. The transgenic cell line (SC1-c-kit(N822K)) expressing the oncogene c-kit(N822K) together with the fluorescent marker was obtained from mouse fibroblast cell line SC-1 transduced with recombinant retrovirus. The computational analysis was done to select potentially effective sequences targeted to c-kit mRNA. We have designed 2 types of small interfering RNAs (siRNA) targeting the exon 5 (siRNA-KIT-5) or exon 9 (siRNA-KIT-9) of activated oncogene c-kit mRNA. Inhibition of c-kit expression was observed 48 hour after transfection by flow cytometry and RT-PCR. The amount of c-kit mRNA decreased 1,5 and 2 fold respectively, corresponding to control cells. Further 2 types of small hairpin RNAs (shRNA) were desined for targeting transgenic cells SC1-c-kit(N822K) and expressed in lentiviral vectors. The evaluation of the biological activity of shRNAs demonstrated, that 14 days post transduction the amount of target c-kit mRNA decreased 4 and 11 fold respectively, corresponding to control cells, transduced with shRNA expressing lentiviral vectors targeting nonspecific sequence. Kasumi-1 cells were transduced with validated shRNA-expressing lentiviral vectors targeting c-kit mRNA. Nested RT-PCR analysis demonstrated that 14 days post transduction the amount of c-kit mRNA decreases 4 and 8,5 folds respectively, corresponding to control Kasumi-1 cells, transduced with shRNA expressing lentiviral vectors targeting nonspecific sequence. We report a stable reduction in expression of the oncogenes following the introduction of shRNAs into cells. The developed recombinant lentiviral vectors could be used for the silencing of the expression of leukemia-related oncogenes in vitro and in vivo.

Hereditary antithrombin III deficiency: Correlation between genetic analysis and thrombotic tendency

ESC-ID: 1004
Authors: Selmeczi A
Country: Hungary
University: University of Debrecen Medical and Health Science Center, Department: 2nd Department of Internal Medicine

Aim: The serine protease inhibitor antithrombin III (AT-III) functions as an important regulator of the coagulation cascade. Various genetic defects of AT-III are associated with hypercoagulability due to quantitative or qualitative abnormalities in the protein. Up to the present the number of known AT-III mutations exceeds 250. The current study is aimed to analyse the clinical features and the underlying genetic alterations of patients with hereditary AT-III deficiency in the North-East region of Hungary.
Methods and Materials: The clinical data were analysed retrospectively, the genomic DNA was isolated from the peripheral blood and the mutations were identified with a fluorescent direct DNA sequencing method. Initially 21 genetic analyses were performed in patients previously diagnosed with AT-III deficiency using antithrombin activity assay. In 20 cases venous thromboembolic events occurred in the medical history, in one case the patient's family history indicated the investigation for thrombophilia. Further 28 genetic analyses were carried out with the purpose of genetic screening in the patients' close family members (parents, siblings and children).
Results: Out of the overall 49 genetic analyses 28 pathogenic mutations were found. Seventeen patients carried the AT-III Budapest 3 (Leu99Phe) mutation, five of them were homozygous and twelve heterozygous for the mutation. In two patients AT-III Stockholm (Gly392Asp) and Basel (Pro41Leu) mutations were found. Additionally two novel mutations were discovered in nine patients of two families. Both two novel mutations were accumulated in the families. One of these mutations was discovered in seven members of a populous family including three gen-

erations and was associated with severe thromboembolic tendency.
Conclusion: In the North-East region of Hungary the Budapest 3 (Leu99Phe) mutation was the most frequent genetic alteration among AT-III deficient patients. Two novel mutations were discovered for the first time. Studying the underlying genetic alterations enables to reach a better understanding of the functions of the AT-III protein and can lead to a more individualized treatment in AT-III deficiency.

Low doses of ionizing radiation promote tumor growth and metastasis by enhancing angiogenesis

ESC-ID: 1432
Authors: Vala IS, Nunes RJ, Rocha A , Rino J, Rüegg C, Grillo IM, Mareel M, Santos SCR
Country: Portugal
University: Instituto de Medicina Molecular, Faculty of Medicine of University of Lisbon , Department: Angiogenesis Unit

Introduction and Aim: Radiotherapy is a widely used local treatment for malignant tumors. However, there are clinical and experimental observations indicating that Ionizing radiation (IR) might promote a metastatic behavior of cancer cells and that the irradiated host microenvironment might exert tumor-promoting effects. Recently, different studies have focused on the mechanisms by which IR activates cellular targets potentially contributing to invasion and metastasis. Doses of IR causing such stimulating effects are classically delivered inside the tumor target volume in daily small fractions in order to limit damage of healthy tissues and until a potentially curative dose has accumulated inside the tumor volume. Furthermore, the delivery in small fractions and the isodose distributions of external beam radiotherapy result in lower doses of IR outside the tumor target volume. The biological effects of these low doses of IR on the healthy tissue surrounding the tumor area, namely the vasculature, remain largely to be determined, and are the aim of our study.
Methods: Lung Human Microvascular Endothelial Cells (HMVEC-L), anesthetized zebrafish or mice received single doses of IR, performed at room temperature using a linear accelerator X-rays photon beam, operating at 6 MV with a dose rate of 300 MU/min.
Results: We found that doses of IR lower or equal to 0.8 Gy enhance endothelial cell migration without impinging on cell proliferation or survival. Moreover, we show that low-dose IR induces a rapid phosphorylation of several endothelial cell proteins, including the Vascular Endothelial Growth Factor (VEGF) Receptor-2 and induces VEGF production in hypoxia mimicking conditions. By activating the VEGF Receptor-2, low-dose IR enhances endothelial cell migration and prevents endothelial cell death promoted by an anti-angiogenic drug, bevacizumab. In addition, we observed that low-dose IR accelerates embryonic angiogenic sprouting during zebrafish development and promotes adult angiogenesis during zebrafish fin regeneration. Using an orthotopic breast cancer model, we show that low-dose IR promotes metastasis and that these effects were prevented by the administration of a VEGF receptor tyrosine kinase inhibitor immediately before IR exposure.
Conclusions: These findings demonstrate a new mechanism to the understanding of the potential pro-metastatic effect of IR and may provide a new rationale basis to the improvement of current radiotherapy protocols.

Polymorphisms of GST-genes in patients with Diffuse Large B-cell Lymphoma

ESC-ID: 1437
Authors: Booij H, Oliveira-Souza P, Bydlowski S, Levy P, Maciel F, Pereira J
Country: The Netherlands
University: Sao Paulo , Department: Hematology

Introduction: Diffuse large B-cell lymphoma (DLBCL) is the most frequent subtype of non-Hodgkin lymphoma. The prognosis is poor and only half of patients survives after onset of the disease. Enzymes from the gluthatione-S-transferase (GST) system interact with both carcinogens as chemotherapeutics. Polymorphisms in GST-genes influence enzyme activity, which influences cell metabolism of chemotherapeutics and carcinogens. Therefore, we hypothesized that GST-polymorphisms influence emergence and prognosis of DLBCL. The aim of this study was to compare polymorphisms in four GST-genes between treatment response groups, and to compare GST-polymorphisms between patients with DLBCL and healthy controls.
Methods: To determine GST-genotypes, we used DNA from nucleated blood-cells in 79 patients with confirmed diagnosis of DLBCL and 80 healthy controls. We used polymerase chain reaction (PCR) to identify the presence/absence of GSTM1 and GSTT1. To determine the polymorphisms of GSTP1 1578 A>G and GSTP1 2293 C>T, we used PCR with restriction fragment length polymorphism (RFLP). In patients with DLBCL, we determined treatment response according to the international working group criteria. The treatment response groups were: complete response, partial response and refractory behavior. We also collected data about clinical presentation of the disease, e.g. number of extranodal sites and bulky disease. We analysed data with X-square test and Fischer's exact test (Stata 9.0). A p-value <0.05 was considered significant.
Results: The GSTP1 1578 GG genotype and the GSTP1 2293 CC genotype were more frequent in patients than in healthy controls (14% vs 7,5% $p<0.05$ and 92% vs 49% $p<0.01$) There were no differences in the presence of GSTM1 and GSTT1. We found no difference between GST-genotypes and treatment response. The mutant GSTP1 1578 GG genotype was related with >1 extranodal sites ($p<0.01$). The presence of GSTT1 gene was related to bulky disease ($p<0.05$).
Conclusions: In this research, we found a higher risk for people with the GSTP1 2293 CC and the GSTP1 1578 GG genotype to develop DLBCL. This suggests that GST-polymorphisms influence the development of DLBCL. We found influence of GST-polymorphisms on the presence of some disease characteristics, but we found no influence on treatment response.

Session: Haematology / Oncology 2

Driving partial to fully epithelial mesenchymal transition: Drug resistance comes to play

ESC-ID: 474
Authors: Yeo YH, Yu MC, Huang MC, Wang JK
Country: Taiwan
University: National Defense Medical Center , Department: Department of Medicine

Aim: Metastasis contributes to nearly 90% of cancer patients' death. According to clinical observations, it often occurs concomitant with multidrug resistance. Epithelial mesenchymal transition (EMT), which involves the conversion of tightly attached epithelial cells into mesenchymal phenotype, is one of the most important mechanisms in embryogenesis and tumor metastasis. Loss of E-cadherin is referred to as the hallmark of EMT. Investigations concerning induction of partial EMT have been elucidated recently. However, the progression from partial EMT to complete EMT remains elusive. Thus, it is of particular interest to determine the mechanisms and characteristic alterations underlying this transition.
Methods and materials: We utilized PD153035 (EGFR inhibitor), Taxol, Doxorubicin to perform drug selection. Partial EMT and fully EMT were defined by morphological examination, wound healing assay, in vitro invasion assay, and immunoblotting. Apoptosis detection and proliferation rate assay were analyzed by Hoechst dye staining and crystal violet staining, respectively. Transfection of siRNAs and plasmids were performed to identified the pivotal role of newly emerged receptor tyrosine kinases.
Results and conclusion: We treated c-Myc overexpressing mouse mammary cancer cell line with PD153035 and culture the surviving population. After 22 times selection, we managed to generate a single drug resistant cell line, DR22, which displayed single drug resistance and partial EMT phenotype. DR22 showed no expression of both E-cadherin and EGFR while still retaining some of its epithelial features such as low expression of mesenchymal markers as well as low motility and invasion. After Taxol and Doxorubicin selection for 10 times, respectively, the cells became multidrug resistant. Furthermore, multidrug resistant cells, named DR22 TC10 and DR22 Doxo10, recapitulated fully EMT, proven by the formation of stress fibers, lamellipodia and filopodia as well as the augmented of motility, invasion propensity and mesenchymal markers. Notably, kinase switch and alteration of signaling pathways were determined. Our works unveil that cancer cells with single drug resistance exhibited partial EMT while multidrug resistant cancer cell line display fully EMT. In conclusion, our study provides novel insights into the relationship between multidrug resistance and progression from partial to fully EMT, therefore establishing an important starting point for future studies.

The functional link between Autophagy and Senescence during oncogene-induced stress

ESC-ID: 685
Authors: Reimann M, Maroldt J, Rosenfeldt M, Loddenkemper C, Schmitt CA
Country: Germany
University: Charite Humboldt University , Department: MKFZ, Haematology/Onkology

Autophagy and the tumor-suppressor mechanism of senescence represent two cellular stress response programs. Autophagy is crucial for maintaining energy homeostasis and for preserving cell integrity by elimination of unfolded proteins and malfunctioning organelles. Senescence, on the other hand, is a terminal cell-cycle arrest that limits the proliferation of oncogene-driven or DNA-damaged cells. The transition from a proliferating to a senescent state requires substantial cellular remodeling that involves massive changes in protein expression, cell morphology and physiology. Although a functional link between senescence and autophagy has been previously made, the underlying mechanism which functionally links senescence and autophagy remains unclear. Here we show in accordance to previous reports that autophagy is activated by oncogenes like Ras or Braf in human diploid fibroblasts (HDF). We found that upon Ras activation, the induction of autophagy markers precedes those for senescence suggesting that autophagy might be a prerequisite for the initiation of senescence. Accordingly, HDF expressing shRNAs targeting autophagy-related genes (ATG5, ATG7) continued to proliferate upon expression of activated Ras or Braf. To clarify whether oncogene-induced senescence and autophagy might be regulated through different oncogene-induced pathways, we analyzed MAPK-, ATM- and FoxO3a-dependent pathways by either shRNA or chemical inhibitors in Ras-transduced HDF showing that the induction of both phenotypes requires similiar upstream signaling pathways. Our studies showed that senescence can be induced by a FoxO3a-dependent mechanism via oncogenes or by a FoxO3a-independet pathway via chromatin-modifying genes like hSuv39H1 and HDAC1. In contrast, only the FoxO3a-dependent pathway leads also to an induction of autophagy. These in vitro data were supported by the fact that naevus cell nevi, a pre-tumor lesion of oncogenic BRaf-activated melanocytes, exhibit features of both senescence and autophagy markers. Strikingly, both programs are no longer detectable in malignant melanomas in situ, suggesting that autophagy and senescence may be two interdependent principles co-selected against during melanoma development. Furthermore, we detect activated FoxO3a in naevus cell nevi but not in melanoma in situ which implicates that functional FoxO3a is sufficient for senescence and autophagy to prevent tumor development. Our findings suggest that autophagy plays a critical role in the initiation of senescence, supporting the view as a tumor-suppressive program. Importantly, the cooperative action of autophagy in cellular senescence may not only prevent melanoma development but might be equally relevant for the proper execution of therapy-induced senescence.

Characterisation of the interactome of PAX3/FKHR.

ESC-ID: 817
Authors: Heinz CB, Wachtel M, Schäfer BW
Country: Switzerland
University: University of Zurich , Department: Faculty of Science

Rhabdomyosarcoma is the most common soft tissue childhood tumour. In alveolar RMS (aRMS), an aggressive tumour with poor prognosis, a fusion between PAX3 and FKHR is present in 70% of aRMS cases. Both PAX3 and FKHR encode for transcription factors, which are normally regulated by interaction with other proteins or by posttranslational modifications. The fusion protein PAX3/FKHR acts as a potent, still the interaction partners relevant for the oncogenic transcriptional activity of PAX3/FKHR in aRMS need to be elucidated. A detailed analysis of the interactome might lead to a better understanding of the oncogenic behaviour of PAX3/FKHR and reveal interaction partners suitable for a targeted therapy. Therefore, a tandem affinity purification (TAP) of PAX3/FKHR followed by mass spectrometrical (MS) analysis of copurified proteins was established to describe the interactors of PAX3/FKHR in aRMS in a global way. By using the TAP-tag system, more than 70 potential binding partners of PAX3/FKHR were identified. We TAP-tagged PAX3/FKHR both N- and C-terminal and found similar proteins, indicating a high specificity of the method. Among these, numerous kinases and modifying enzymes were found but also other components of the cell which might represent different steps in the life cycle of the fusion protein. Interaction of five selected proteins identified by MS with PAX3/FKHR was confirmed in vivo by co-immunoprecipitation. These findings provide an improved insight into the interactome of PAX3/FKHR, which maybe important for the identification of novel drug targets.

Reduction of erythrocyte functionality under radiation therapy.

ESC-ID: 831
Authors: Tishko D, Tishko T, Titar V
Country: Ukraine
University: V.N.Karazin Kharkov National University , Department: Radio-Physical

Radiation therapy is widely used as the method of treatment of oncology diseases. Its application is always connected with progression of adverse effects either local, or on the level of the whole organism. The main reason of the mechanisms of adverse effect progressing consists in reduction of functionality of separate erythrocytes as to their oxygen transport function, which is caused by morphological modifications of red blood cells that results in loss of the effective gaseous exchange possibility, hypoxia of organs, tissues and systems of a human organism. This work is devoted to study of erythrocyte pathomorphology progressing under influence of ionizing radiation in the standard radiation therapy courses for patients with oncology diseases. The method of digital holographic interference microscopy (DHIM), which makes it possible to carry out direct quantitative measurements of morphological parameters of blood erythrocytes, to calculate the necessary design parameters, and perform 3D visualization of cell surfaces in virtual space, is the instrument of the investigation. The erythrocyte functionality as to its oxygen transport function is indirectly characterized by its sphericity coefficient (the ratio of the thickness of an erythrocyte in its center to the thickness in the half of its radius). The sphericity coefficient defines the ratio „erythrocyte surface square/ erythrocyte volume“, and its changes under the constant volume reflects morphological modifications of erythrocytes , and changes of the square of gaseous exchange. In this work the method of estimation of the level of pathological influence of the morphological modifications of blood erythrocytes on an organism under radiation therapy is considered. The investigation of the level of the radiation therapy influence on blood erythrocytes can be used either as the measure of its general efficiency, or as the method of revelation of deep-seated organism states, when correction or abolition of the radiation therapy course is needed, because it can be dangerous for patient's life.

Influence of AKT1, AKT2 and FRAP1 polymorphisms on response and survival in head and neck cancer (SCCHN) patients treated with Docetaxel and Cetuximab

ESC-ID: 883
Authors: Pfisterer K, Fusi A, Klinghammer K, Knoedler M, Nonnenmacher A, Keilholz U
Country: Germany
University: Charité – Universitätsmedizin Berlin, Department: Medical Department, Division of Hematology Oncology

Purpose: The PI3K/PTEN/AKT/mTOR signaling pathway plays a fundamental role in transmitting signals from membrane receptors to downstream targets that regulate apoptosis, cell growth and angiogenesis and it has been implicated in resistance to several chemotherapeutic agents. The aim of this study was to investigate whether single nucleotide polymorphisms (SNPs) in AKT1, AKT2 and FRAP1 (encoding mTOR) were associated with the tumor response and survival in platinum-pretreated patients (pts) with recurrent and/or metastatic head and neck cancer (SCCHN) who received cetuximab (400 mg/m(2)in week 1 then 250 mg/m(2)/wk) plus docetaxel (35 mg/m(2) d 1, 8, 15 q 4 wk) for a maximum of 6 cycles in a phase II study (CETAX).
Methods: Six single SNPs in AKT1 (rs3803304, rs2494738), AKT2 (rs892119, rs8100018) and FRAP1 (rs892119, rs2295080) were genotyped by means of Real Time PCR system and analysed for association with response to therapy and survival.
Results:: Forty-seven pts (37 male, 10 female) were evaluated (median age: 60 yrs [range: 46-75 yrs]; primary tumor site: hypopharynx 13; oropharynx 12; oral cavity 10; other 7). Twenty-eight pts were evaluable for response. The median follow up was 7 months (0-16 months). We observed an increased risk of progression with the genetic variation AKT1:rs3803304 (Hazard ratio [HR] 4.33; 95% CI, 1.19 to 15.86, p= 0.027). Pts homozygous for AKT1:rs3803304 experienced a shorter progression free survival (PFS) than those either heterozygous or with a wild-type genotype (p=0.015). In contrast, AKT2, FRAP1 and the SNP AKT1:rs2494738 were not associated with an increased recurrence risk, nei-

ther with a shorter PFS. Genetic variations in AKT1, AKT2 and FRAP1 were not associated with overall survival or response.
Conclusions: AKT1:rs3803304 might modulate clinical outcomes in SCCHN pts who received cetuximab plus docetaxel. Within KRAS and BRAF mutation analyses these findings may serve as potential markers or may be used to modelling the treatment strategy for the selection of the optimal treatment regimens.

Effect of family tumor history on survival of patients with triple-negative breast cancer

ESC-ID: 1045
Authors: Ozgan AY, Turna ZH, Biricik FS, Ozturk MA, Tural D, Ozgurluoglu M, Mandel N, Serdengecti S
Country: Turkey
University: Istanbul University-Cerrahpasa Faculty Of Medicine , Department: Oncology

Background and aim: Triple -negative breast cancer (TNBC) is known by its challenging behaviour to physicians since it has a distinct outcome and therapeutic approach when it is compared to other subgroups of breast cancer.Owing to fact that TNBC is negative for expression of estrogen and progesterone receptors(ER/PR) and HER2 protein,it is responsible for a disproportionate number of breast cancer deaths. TNBC is known to be associated with BRCA-1 gene mutation or BRCA-1 protein disfunction which has tumor supressor functions. We aimed to determine the effect of family tumor history on disesease free and general survival of patients with TNBC.
Methods: Clinicopathologic data of 126 patients with a diagnosis of triple negative breast cancer who were treated in our clinic between January 2001 and December 2008 were retrospectively evaluated. Family tumor history, disease free survival (DFS) and overall survival of patients were determined. Kaplan Meier test for DFS and Log-rank and Cox proportional hazard tests were used for univariate and multivariate analysis.
Results: The mean age of of 126 patients (125 women and 1 man)with triple negative breast cancer was 51 years. Premenopausal patients constitute 46.0 % (n=58) of patients. The rates of patients who had early stage, locally advanced and metastatic disease were 78.2%, 12% and 8.8 % respectively. The Disease free survival (DFS) and of early stage TNBC patients with a positive family tumor history was found to be 73 months where as the DFS of patients without family tumor history was 137 months.
Discussion: TNBC is kown to be associated with BRCA 1 gene and protein disfunction. BRCA-1 gene products play an important role in DNA repair and serve as tumor suppressors. Patients with family tumor history may have germline mutations of BRCA-1 and other tumor suppressor genes.Our study shows that TNBC in patients with a positive family tumor history has worse prognosis than patients without family tumor history.

The presence of cavity in lunc cancer as a prognostic indicator

ESC-ID: 1149
Authors: Pouli D, Pappa Irene, Gkiozos I
Country: Greece
University: University of Athens , Department: Medical School

Introduction: The prognosis of lung cancer depends mainly on the stage of disease, substantial weight loss, histological type and biological status of the patient. The presence of specific radiographic pattern in the primary alien outbreak has not been adequately studied.
Aim of the Study: Comperative evaluation of the impact of the presence of primary and secondary cavities within the mitotic processes on overall survival of patients with lung cancer.
Patients and Methods: The study enrolled 135 patients with advanced lung cancer (123 non small cell lung cancer stage III and IV ,7 with small cell lung cancer and 8 with unknown histological type) who had primary or secondary cavities in the mitotic processes.
Results: The statistical analysis confirmed the known prognostic factors with statistical significance: a) the biological status of the patient at diagnosis, b) significant weight loss and c) the histologic type. The study of the presence of cavities showed statistically significant difference in the overall survival between the patients who had primary and those who had sevondary cavities (p-value=0,04, 95% confidence interval). This diferrence was especially shown for the squamous histological type (p-value=0,038, 95% confidence interval).
Conclusions: The presence of primary cavity in the mitotic process is associated with lower overall survival of patients with lung cancer in comparison to those lung cancer patients with secondary cavity.

Effect of RANK-RANKL signalling pathway on MMP1, OPG and PTHrP gene ex<x>pression of breast and prostate cancer cell lines in vitro

ESC-ID: 1174
Authors: Ribeiro S, Casimiro S, Costa L, Moniz E
Country: Portugal
University: University of Porto - Biomedical Sciences Institute of Abel Salazar , Department: Medicine

Aim: Bone metastases are highly prevalent and cause severe morbidity and mortality in patients with advanced breast or prostate cancer. In physiologic bone remodelling, the amount of bone resorbed is compensated by the amount of bone that is newly formed. However, in bone metastases there is an increased osteoclastic activity with consequent development of osteolytic lesions. It is well established that RANK-RANKL signalling pathways are associated with osteoclastogenesis and osteoclastic activity. Recently, it was found that bone metastatic cells from breast and prostate cancers for example, may express RANK receptor. Moreover, stimulation of these cells with RANKL induces cell migration and invasion through a collagen matrix. Despite the availability of biphosphonates as a therapeutic option against skeletal complications of malignancy, a medical need exists for a more convenient, effective and safe therapy and the inhibition of

RANK-RANKL signalling pathway seems to be a promising therapeutic target. An anti-tumoural effect of anti-resorptive drugs targeting RANK-RANKL and osteoclasts, like the monoclonal antibody denosumab, may contribute to an improved clinical outcome of patients with advanced bone metastatic disease.Our aim was to analyse the effect of RANKL stimuli on the expression levels of MMP1, OPG and PTHrP genes, in osteotropic breast and prostate cancer cell lines, which express the RANK receptor.
Methods and Materials: Human breast cancer cell lines MCF-7, MDA-MB-435, MDA-MB-231, MDA-231-BO2, and human prostate cancer cell line PC3 were used. A PC3 cell line clone with stable knock-down of RANK, obtained by shRNA, was also used. Approximately 80% confluent cell cultures were serum-starved for 24h and stimulated with 2 μg/mL RANKL for 10, 20, 40, 60 and 120 min. Total RNA was isolated using RNeasy Mini Kit and reverse transcribed into cDNA with Superscript III First-Strand Synthesis System for RT-PCR. Semi-quantitative RT-PCR analysis of transcript expression was performed using specific primers for MMP1, OPG and PTHrP, and beta-Actin as internal control for gene expression normalization. PCR products were resolved by electrophoresis and gene amplification was quantified using the ImageJ software.
Results: The RANKL stimulus leads to an increase in the expression of MMP1 in all cell lines. RANK knock-down abrogates this effect, corroborating that the effect depends on RANK-RANKL interaction. The basal expression and activation of MMP1 in the non-invasive cell line MCF-7 is very low when compared to the other cell lines. There is no significant difference on the expression levels of OPG, PTHrP following RANKL stimulus.
Conclusions: RANK-RANKL interaction in RANK expressing osteotropic tumor cells may lead to the activation of important intracellular pathways. Our data shows that MMP1 gene is transcriptionally activated following RANKL stimuli. MMP1 overexpression increases the invasive potential of breast and prostate cancer cells that metastize to bone. MMP1 may directly degrade bone extracellular matrix, releasing growth factors, and has an important „sheddase“ activity, contributing to the vicious cycle of bone metastasis.

Some hematological profile of HIV seropositive asymptomatic patients in Owerri West, Imo state

ESC-ID: 1176
Authors: Alagboso C, Adepoju P
Country: Nigeria
University: Imo state university, Owerri , Department: Medical laboratory Science

For several decades, AIDS has been a leading cause of mortality in sub Saharan Africa and other parts of the world with diverse effects on various aspects of human physiologic homeostasis. This study assessed the current pattern of some common hematological profiles of HIV seropositive asymptomatic patients. The study was also carried out to elucidate on the effects that current Nigerian government-sponsored antiretroviral therapies have on the hematologic parameters of patients attending ARV Clinics in Southern Nigeria. Thirty adult HIV positive outpatient patients (14 males and 16 females) whose HIV statuses were confirmed using ELISA Western blotting method were recruited for the study. Results obtained from the study showed that the mean values of Hb, PCV, MCHC, MCH, Rbc, CD4, Wbc and platelet counts were 10.9 ± 1.9mg/dl, 35.1 ± 5.8%, 31.03 ± 1.22 g/dl, 28.68 ± 4.28 pg, 3.86 ± 0.77 x 1012/L, 466.90 ± 285.99 mm3, 5.2 ± 1.4 x 109/L & 237.23 ± 125.37 x 109/L respectively, of the test group were significantly lower ($p < 0.05$) when compared with the corresponding results obtained from the control group (n = 30). The mean value of MCV (91.80 ± 10.03fl) was significantly increased in the test group compared to control. A significantly increased value ($p < 0.05$) was obtained for the mean RBC count (4.14 ± 0.55 x 1012/L) of the HIV patients on ART compared to those who are not on ART. The increase in the Hb, PCV, CD4 and WBC count (10.99 ± 1.34 mg/dl, 35.78 ± 4.27%, 492.81 ± 334.64 mm3 and 5.37 ± 1.38_109/L) of the ART patients was not significant ($P>0.05$). A significant decrease ($p < 0.05$) was observed in mean values of MCHC and MCV (26.69 ± 2.29 and 86.78 ± 6.35) of the ART patients compared to the patients not taking ART while an insignificant decrease ($P>0.05$) was observed in the mean values of MCHC and platelet counts (30.72 ± 0.79) and 218.50 ± 94.83) respectively, of the ART patients compared to the non ART patients. Results suggest a general dysfunction of the erythropoeitic pathway which may be as a result of destruction or supression by the invading viruses.
In conclusion, the antiretroviral therapy has a little effect on remission evident in the elevated parameters compared to those not taking ART.

The Involvement of hepatitis viruses on ethiopathology of lymphoproliferative disorders - A retrospective analysis

ESC-ID: 1305
Authors: Ion IM, Delcea C, Nistor SI, Iliescu MC, Ciufu C, Vladareanu AM
Country: Romania
University: "Carol Davila" University of Medicine and Pharmacy , Department: General Medicine

Introduction: Hepatitis viruses are both hepatotropic and lymphotropic and a clear-cut association has been proposed between infections with hepatits B,C,D viruses and lympfoproliferative disorders.
Aim: The objective of our study is to evaluate the prevalence of hepatitis viruses on chronic and acute lymphoproliferative disorders as well as their impact on the clinical and biological evolution of these patients.
Methods: In this retrospective analysis, we studied 679 patients with chronic and acute lympfoproliferative disorders admitted between January 2008 - May 2010 at the Hematology Department of the University Emergency Hospital Bucharest. The cases consisted of consecutive patients with diagnosis of B-cell non-Hodgkin's lymphoma (B-NHL), T-cell non-Hodgkin's lymphoma (T-NHL), Hodgkin's disease (HD), chronic lymphocytic leukemia (CLL), multiple myeloma (MM), Waldenstrom macroglobulinemia (WM), acute lymphoblastic leukemia (ALL), adult T-cell leukemia/lymphoma (ATLL). The diagnosis of chronic lympfoproliferative disorders was established on lymph node/bone marrow biopsy completed by immunophenotyping analysis, as for ALL we used bone marrow aspirate with flow citometry according to WHO

classification. All patients had serology test for hepatitis detection.
Results: In the studied population 11.34% (77 out of 679) patients tested positive for hepatitis. The mean age of the infected group is 62 years. Male/female ratio is 45:32. 43 patients were infected by hepatitis C virus - HCV (55.8%), 32 by hepatitis B virus - HBV (41.6%) and only 2 (2.6%) patients presented double / triple infection. The prevalence of hepatitis viruses was higher in patients with B-NHL (21%, 50/239 cases), WM (20%, 2/10), ATLL (10%, 1/10) than in patients with MM (5%, 7/139), CLL (5.38%, 9/167), HD (6.66%, 5/75), ALL (7.5%, 3/40). Considering the subgroup of B-NHL, the prevalence was higher in follicular lymphoma (26.31%, 5/19), diffuse large B-cell lymphoma (24.35%, 19/78) than in small B-cell lymphoma (18.58%, 21/113).The association between HBV and aggressive histological types is statistically significant: p=0,02, OR=3,1. HBV was also associated with high fibrinogen levels, increased ALT levels, high ESR, diffuse large B-cell lymphoma $p < 0.05$. HCV was associated with adenopathies revealed on clinical examination (61.53%, 24/39 patients with adenopathies, $p = 0.03$) and feminine sex (65.11%, 28/43). Thrombocytopenia was revealed in 45 out of 77 patients (58.44%), mainly associated with HBV infection ($p = 0.01$). The majority of the patients had lymphocytosis (57%, 43/77), particularly the ones with HCV infection and indolent types of CLD ($p = 0.003$). Hepatic cytolysis was associated predominantly with indolent types of CLD, with HCV infection.
Conclusions: The analysis showed a higher incidence of CLD with hepatitis viral infection in women over 50 years old, with a predominance of HCV infection, which was particularly linked to: indolent CLD subtypes, adenopathies, lymphocytosis, and liver dysfunction.The particularity of our study is that HBV was found in a large number of patients and associated with diffuse large B-cell lymphoma, high fibrinogen levels, increased ALT levels, high ESR.

Retinoic acid receptor beta2 Hypermethylation in Fibroadenoma and Breast Carcinoma.

ESC-ID: 1369
Authors: Erlangga Z, Krisna H, Dewajani P
Country: Indonesia
University: Universitas Gadjah Mada , Department: General Medicine

Introduction: Fibroadenoma and breast carcinoma are the most common benign lession and malignancy in women throughout the world. DNA hypermethylation is one of the mechanism that can explain the pathogenesis of tissue lession through the induction of translational silencing of tumor suppressor gene. Retinoic acid receptor-beta2 (RAR-beta2) is a tumor suppressor gene that involve in controlling cell proliferation in breast tissue. The aim of this study is to investigate the role of RAR-beta2 hypermethylation in development of breast tissue lession by comparing the proportion of RAR- beta2 methylation in fibroadenoma and breast carcinoma cases.
Method and material: DNA from 54 fibroadenoma and 117 breast carcinoma fresh frozen tissues were analyzed using methylation-Specific PCR (MSP) which is reported to have a sensitivity 1/1000 for detection of methylated alleles. We define tissue lession as dependent variable whereas methylation status as independent variable in this cross sectional study. Chi-square test was used to compare the proportion of methylation status between fibroadenoma and breast carcinoma.
Result: We found surprising result that RAR- beta2 methylation in fibroadenoma (87%) is significantly higher compare to breast carcinoma (39%) $p<0.01$
Conclusion: Methylation of RAR- beta2 is frequently found in fibroadenoma rather than breast carcinoma. This could be due to the fact that proliferation is the major cause of fibroadenoma, while breast carcinoma is raise from many complex mechanisms besides proliferation.

A preliminary study of paraoxonase i gene polymorphisms with the risk and severity of non-small cell lung cancer (NSCLC) in turkish patients

ESC-ID: 1434
Authors: Ahsan F, Mehmet T, Onur R, Asuman S
Country: Indonesia
University: University of Indonesia , Department: Medical Biology

Paraoxonase 1 is a high-density lipoprotein (HDL)-associated enzyme that was thought to against lung cancer (LC) because it may has a role in protecting from oxidative stress in the lung and circulation. PON 1 has two genetic polymorphisms in coding region; L55M and Q192R. In the present study, distribution of PON 1 L55M and Q192R polymorphisms and the effect of these polymorphisms on the risk of non-small cell lung cancer (NSCLC), and on the clinical severity of NSCLC in 52 NSCLC patients and 60 control subjects were examined. A hospital-based case-control study were undertaken in Ankara University Hospital. PON 1 L55M 55 and Q192R 192 genotypes were determined by PCR, RFLP and agarose gel electrophoresis techniques. The analysis showed genotype distributions and allele frequencies for PON 1 Q192R polymorphism were not significantly different between controls and NSCLC patient group ($p>0.05$), but in genotype and allele distribution of PON 1 L55M polymorphism, there was significantly difference among groups ($p<0.05$). Genotype distributions for both polymorphisms were not significantly different between subgroups of squamous cell carcinoma and adenocarcinoma type. There was a statistically significant difference of NSCLC risk in mutant genotypes (MM and RR), especially for current smokers and heavy smokers. Moreover, mutant genotypes present significantly lower risk of developing cancer in stage IV for NSCLC. Our results suggest that both of PON1 polymorphisms appear to be common genetic traits that are associated with a decreased risk and severity for NSCLC. The effect is especially strong for heavy smokers.

Session: Haematology / Oncology – Poster

Systematic bilateral lymphadenectomy patients with 3a-3b stage non-small-cells lung cancer

ESC-ID: 494
Authors: Alekseenko TS, Porhanov VA, Polyakov IS, Porhanov VA
Country: Russia
University: Kuban state medical university , Department: oncology with cource of thoracic surgery

Introduction: Detection patient with 3a - 3b stages of non-small-cells lung cancer usually is contra-indication to operative treatment, but seems to be a group of that patients with mediastinal involvements heterogeneous.
Materials and methods: Since September 1991 till December, 2009 from 6629 lungs operated concerning a cancer randomized 158 patients with non-small-cells lung cancer and involvements of mediastinal lymph nodes. Middle age of patients was 60,5 years. At 34 % of patients before operative treatment the chemotherapy was done. To all patients it was carried out regular bilateral mediastinal lymphadenectomy via thoracotomy (T) or sternotomy access (S) respectively 81 patients and 77 patients, T3b the stage was at 9 (5,6 %) patients.
Results: Pneumonectomy was done 71 % of cases (112) at the others a lobectomy and bilateral lobectomy. The minimum time of surveillance over the patient has made 3 months. After operative treatment pT3b it is found out at 27 (17 %) - at (T) group it was in 6 (7,4 %), and in 21 (9,6 %) with (S) group. Postoperative complications have developed at 8,6 % of patients in group T and in group (S) in 7,7 % of cases (n.s.). Mortality rate has made 2,3 % and 2,6 % accordingly group (n.s.). Five year survival rate at N2-14 % (T) against 28 % (S). 5-years survival rate at N3 (T) - was not, and in group operated via sternotomy access was 10 %. The best survival rate at N2 been observed in group transferred induction chemotherapy.
Conclusions: Systematical bilateral lymphadenectomy does not worsen direct results of operative treatment, allows to establish most precisely a stage of treatment and to choose an optimum mode of the subsequent treatment that leads to authentic increase in life expectancy at patients with mediastinal involvements of lymph nodes with non-small-cells lung cancer.

Immunohistochemical assessment and clinical characterization of acute myeloid leukemia bearing cytoplasmic nucleophosmin (NPMc+)

ESC-ID: 670
Authors: Bedekovics J, Méhes G
Country: Hungary
University: University of Debrecen Medical and Health Science Center , Department: Department of Pathology

Introduction: Nucleophosmin (NPM) is a multifunctional protein which shuttles continuously between the cell nucleus and the cytoplasm. The mutation of nucleophosmin gene (NPM1) has been recently described as one of the most frequent genetic aberrations in acute myeloid leukemia. Due to the mutation of NPM1 exon 12, the nucleophosmin protein accumulates in the cytoplasm of leukemic cells. The gene mutation can be indirectly demonstrated by the presence of cytoplasmic NPM using immunohistochemistry. The aberrant cytoplasmic localization of NPM identifies a leukemia subgroup called NPMc+ AML (cytoplasmic positive acute myeloid leukemia) that shows distinct biological, pathological and clinical features including association with normal kariotype, high blast count, low CD34 expression and significantly better overall and disease free survival in FLT3-ITD negative patients.
Aim: The present study focused on biological and clinical characterization of NPMc+ AML determined by histological and cytological preparations of the bone marrow.
Materials and methods: Bone marrow smears or paraffin embedded specimens for immunochemistry were available in 60 cases with AML between 2005 and 2009. Anti-NPM monclonal antibody (Dako, clone 376) and Dako EnVision system were used to detect the aberrant cytoplasmic accumulation of NPM protein. Clinical variables were compared using Mann-Whitney U test, P values below 0,05 were considered to be significant.
Results: Cytoplasmic NPM immunostaining was detected in 11 of 60 AML cases (18,33%), 8 of 11 were female patients. All of the NPMc+ cases felt into the category b'AML not otherwise characterized" (NOS) (11/36; 30,55%). NPMc+ labeling was more frequent in patients with normal kariotype (8 of 26; 30,77%) compared to cases with kariotype abnormalities (1 of 22; 4.55%). The NPMc+ group displayed M2 or M4 morphology, low CD34 expression (mean 1,75% versus 26,50%; p=0,001). All patients reached complete remission (CR) after the first (7/8) or the second (1/8) cycle of the induction therapy with NPMc+ AML in contrast to cases with NPMc- immunostaining (5/13 and 4/13 CR cases respectively) 3/13 NPMc- AMLs were therapy refracter and one of them died during the IT.
Conclusions: Immunohistochemistry is well applicable for the identification of NPMc+ AML in the daily hematpathology practice. Most of the above results are in agreement with previous studies. Our preliminary observations suggest that NPM status may be useful for the estimation of the initial response in AML not otherwise characterized.

Morphological and Immunohistochemical Profiles of Nodal B Cell non-Hodgkin Lymphomas

ESC-ID: 761
Authors: Cosma ML, Nicolae A, Aschie M, Poinareanu I, Nicolau AA, Mitroi AF, Dobre A, Iliesiu A, Gheorghe E
Country: Romania
University: "Ovidius" University , Department: General Medicine

Malignant lymphomas are monoclonal lymphoid proliferations of lymphocytes, lymphocytes precursors and histiocytes. At this time are recognized two main categories: non-Hodgkin and Hodgkin lymphomas. Lymphomas can be classified in nodal and extra nodal lymphomas, the last type being primary or secondary. For the estimation of morphologic and immunohistochemical

markers implicated in nodal B cell non-Hodgkin lymphomas early diagnosis and prognosis, we will study one group of patients with nodal non-Hodgkin lymphoma diagnosed in Clinical County Emergency Hospital Constanta. The group will be submitted to histopathologic and immunohisctochemic examination for establishing the lymphoma type. The group comprises 21 patients with ages between 2 and 84 years. The results were inserted in a data base the calculation of the correlation indexes of immunohistopathologic modifications with clinic and imagistic aspects and after we have established the prognosis indexes. The major result is the establishment of a morphological and immunohistochemical profile useful for pathologists, oncologists and surgeons in early treatment and diagnoses of nodal B cell non-Hodgkin lymphomas. This paper is realized inside of PNCDI II project, No. 42-157/2008, „Identification of Genetic and Morphologic Markers Involved in Early Diagnosis and Prognosis of Lymph Node B Cell Non-Hodgkin Lymphoma".

Imatib in chronic myelogenous leukemia: hematologic and cytogenetic responses

ESC-ID: 1238
Authors: Zarei M, Razavi SM
Country: Iran
University: Iran University of Medical Sciences , Department: Medicine

Introduction: Chronic Myelogenous Leukemia(CML)is a clonal stem cell disorder. Translocation of BCR(on Chromosome 22)and ABL(on Chromosome 9)genes which produces Philadelphia chromosome is the cause of CML. One option for treatment is Imatinib Mesylate (Gleevec)which induces apoptosis in the cells containing BCR-ABL gene. Noticeable responses to Imatinib make it the first choice treatment even in those who may get benefit from bone marrow transplantation. Because Gleevec is a very expensive medicine, Iranian doctors prefer to prescribe the generic type, called Imatib. However, it is not significant that Imatib has acceptable effects comparing to Gleevec. We conducted this study to characterize hematologic and cytogenetic responses to Imatib in Iranian patients with CML.
Methods and Materials: In this interventional uncontrolled multicentre trial, 33 CML patients enrolled to the study. Sampling was based on convenience method. Patients were eligible if they were 18 to 75 years of age and had chronic phase CML, Imatib treatment duration for at least 3 months, using the current Imatib capsules in Iran and Philadelphia chromosome positive CML. Blood sample was taken from each patient. At the laboratory Polymerase Chain Reaction(evaluating the existence of Philadelphia chromosome) and Complete Blood Count were done for evaluation of the cytogenetic and hematologic responses to Imatib, respectively. Other variables such as hemoglobin level, white blood cell and platelet count, age, sex, dose and duration of treatment with Imatib, disease duration and hepatosplenomegaly and their correlation to the responses have been evaluated. We performed chi square, Independent T-test and correlation for data analysis. Statistical significance was accepted for $p<0.05$. The study was conducted according to the principles of Declaration of Helsinki.
Results: In this study 18(54.5%) of 33 patients were male and 15(45.5%) were female. The mean age was 43.4±15 years. The mean duration of treatment with Imatib was 2.71±1.5 years and the mean dose of it was 300±126 mg/day. Of the 33 patients, 25(73%) had a complete cytogenetic response(negative Philadelphia chromosome). Complete hematologic responses(White blood cell count less than 10000/mm3 and platelet count less than 450000/mm3) were reported for 27 of the 33 patients studied(79%). The results of the study indicate a significant correlation between the complete hematologic response to Imatibe and the daily dose that patients has taken(R Pearson=0.454, $P<0.001$) and it also has a significant correlation with the duration of treatment with Imatib(R Pearson=0.344, $P<0.05$). On the other hand, there were no significant relations between the both of responses to Imatib and other variables that have been evaluated($P>0.05$).
Conclusion: The results of this study illustrate that Imatib induces high rates of cytogenetic and hematologic responses in the CML patients. These effects are satisfactory comparing to the effect of Gleevec in the other valid and reliable trials(73% cytogenetic response to Imatib comparing to 60% to Gleevec and 79% hematologic response to Imatib comparing to 95% to Gleevec). Acceptable effect of Imatib comparing to Gleevec and its other benefits in Iran including the lesser price and easier availability makes Imatib such a good alternative for the treatment of CML patients in Iran.

Inhibitory effects of BEZ-235 and LCL161 on glioblastoma multiforme stem cell proliferation

ESC-ID: 1377
Authors: Veldhuijzen van Zanten S
Country: The Netherlands
University: Vrije University medical center - Amsterdam/ Dana Farber Cancer Institue - Harvard Medical School , Department: Pediatric Oncology

Glioblastoma multiforme (GBM) is the most common brain tumor worldwide and its associated survival is extremely poor; patients diagnosed with GBM have a median survival of 10-12 months. GBM is characterized by an intrinsic resistance to apoptosis, in part due to constant activity of the phosphoinositide-3-kinase-(PI3K)-Akt signaling pathway. By targeting the signaling anomalies responsible for the resistance to apoptosis, tumor responsiveness to cytotoxic therapy may be increased. PI3K-inhibitors may therefore modulate the response of GBM to standard therapy and increase survival. A more downstream targeted therapy such as an inhibitor-of-apoptosis-proteins-(IAP)-inhibitor has already shown to decrease cytotoxic resistance in GBM cells when combined with a platelet-derived-growth-factor-receptor-(PDGFR)-inhibitor. Since this growth factor signals through PI3K, we hypothesized that the combination of the PI3K-inhibitor BEZ-235 and the IAP-inhibitor LCL161 would have a synergistic effect on inhibition of glioblastoma cell proliferation. We developed standardized experimental protocols to measure glioma stem cell growth. Following this protocol we used U87-LN-NS, BT-70 and BT-75 cell lines to investigate the effect of the two inhibitors of interest. The PI3K-inhibitor BEZ-235 was added to the cultured cells in a concentration of 0 (control), 50 and 100 nM, and combined with the IAP-

inhibitor LCL161 in a concentration of 0 and 50 μM. After 7 days, total count and total area of glioma neurospheres was analyzed using computerized software. Cell viability was measured using an Alamar Blue fluorometric cell viability assay. To assess Akt signaling, protein concentrations of Phospho-Akt (Ser308), Phospho-Akt (Ser473) and PRAS40 were quantified in all cell lines using western blot. We demonstrate that inhibition of the PI3K pathway with BEZ-235 results in a decrease of glioma neurosphere growth. Downstream blockade of IAPs with the specific IAP-inhibitor LCL161 does not seem to have an extra effect on glioblastoma cell proliferation. These results suggest that the pathway responsible for full-blown apoptosis when combining a PDGFR-inhibitor and an IAP-inhibitor is not the same when targeting the PI3K pathway. While PI3K-inhibitior BEZ-235 had stand alone activity, concomitant inhibition of the PI3K pathway with the IAP-inhibitor LCL161 does not lead to an additive anti-tumor effect on glioblastoma multiforme stem cell proliferation in multiple glioma stem cell lines. The evidence that the combination of the PI3K-inhibitor BEZ-235 and the IAP-inhibitor LCL161 did not prove to be a synergistic combination brings us one step further in understanding the complexity of apoptotic pathway targets in glioblastoma stem cells. We still believe it is unlikely that a single targeted therapy will ever form a definitive therapy in malignant gliomas. Further research is necessary to investigate which pathway targets -combined with standard therapy- will induce the full-blown apoptosis of glioblastoma stem cells resulting in increased survival of patients diagnosed with GBM.

The effect of lycopene on the growth of fibrosarcoma cells in Balb/c mice

ESC-ID: 1387
Authors: Azizi E, Shirzad H, Kiyani M, Sadeghi Z
Country: Iran
University: Shahrekord university of medical sciences , Department: student research of comittee

*Introduction:*Fibrosarcoma is a tumor of mesenchymal cell origin that is composed of malignant fibroblastic in collagen background. Lycopene is an antioxidant compound that gives tomatos and has been reported to decrease progression of prostate and stomach cancer. Since chemotherapy, radiation and surgery have very complications for cancer patients ,present study done to investigate the effect of lycopene on control and prevention of fibrosarcoma in singenic Balb/c mice.
Methods: In this experimental research,30 mice with same sex and age divided into 3 groups. All three groups were injected with WEHI-164 tumor cells on the day zero subcutaneously in the chest of animals. Group one were fed 5mg/mouse tomato juice 2weeks before tumor inoculation. Group two were fed tomato juice (5mg/mouse) on the day of inoculation but group 3 Were not fed any juice. Both two case groups received tomato juice daily up to the end of experiment. Five days from inoculation the tumors were grown, but not available for measurement,and the tumor size recorded from day.Size of growing solid tumor were measured in every individual mice in the days 10,12,14,16,18,20,22. SPSS Ver.16 used for data analysis including ANOVA and independent samples t-test.
Results: The mean of tumor area in group one were smaller than of group two($p< 0/05$) and the mean of tumor area in any 2 case groups were smaller than that of control group ($p< 0/01$).
Conclusion: The previous studies shown effect of lycopene in control of progression of lung and prostate cancer.Our study shown that lycopene has important role in prevention and control of fibrosarcoma progression. we recommended that this study repeat again with different doses lycopene and other type of cancer.

Pain following breast cancer surgery

ESC-ID: 1390
Authors: Zupan A, Besic N
Country: Slovenia
University: University of Ljubljana, Medical Faculty , Department: Insitute of Oncology, Division of Surgery

Aim: Pain following surgical treatment for breast cancer can be a major clinical problem. Our aim was to determine the factors that may contribute to pain after surgery.
Methods and Materials: We performed a prospective questionnaire study of 142 women aged 18 to 85 years (mean 57 years), who were treated for primary breast cancer in Slovenia between January and October 2009. All patients were treated with surgery - modified radical mastectomy, mastectomy combined with sentinel node biopsy (SNB), quadrantectomy combined with axillary lymph node dissection (ALND), quadrantectomy combined with SNB or quadrantectomy. If indicated, patients also received adjuvant radiotherapy, chemotherapy and/or hormone therapy. Patients completed EORTC QLQ-BR32 questionnaire a day prior to the operation and three months after the operation. The results were statistically analysed using chi-square test ($p<0.05$).
Results: A total of 100 women (71%) reported pain before surgery. Pain in the arm or shoulder and pain in the affected breast was reported by 47 women (33%), 34 women (24%) reported only pain in their arm or shoulder and 19 women (13%) reported only pain in the area of the affected breast. By March 2010, 96 of 142 women returned the second questionnaire. A total of 80 women (83%) reported pain after surgery. Pain in the arm or shoulder and pain in the affected breast was reported by 61 women (63%), while 12 women (12%) reported only pain in the arm or shoulder and 7 women (7%) reported only pain in the area of the affected breast. Pain in the arm or shoulder after surgery was associated with older age (>60 years versus younger; $p=0.010$) and axillary lymph node dissection (ALND versus SNB or no axillary surgery) ($p=0.016$). Pain in the area of the affected breast after surgery was associated with younger age (<60 years versus older; $p=0.040$), adjuvant radiotherapy ($p=0.027$) and pre-existent pain in the arm or shoulder ($p=0.0001$). Women with pain before surgery more often reported pain after surgery ($p=0.005$).
Conclusions: Pain following breast cancer surgery was reported in 83% of all patients. Pain after surgery is related to patient's age, type of surgery (whether or not ALND is performed), adjuvant radiotherapy and pre-existent pain.

Clinical, biochemical and hematological characteristics as a parameter in predicting the average survival rate and disease severity in patients with Mantle cell non-Hodgkin lymphoma.

ESC-ID: 1401
Authors: Milosevic B, Naric M, Todorovic M
Country: Serbia
University: University of Belgrade, Department:

Aim: The aim of this study was to analyze presenting features, clinical, biochemical and hematological characteristics in patients with mantle cell non-Hodgkin lymphoma and to test their influence on overal survival rate and disease severity.
Methods and Materials: In retrospective study documentation of 20 patients with mantle cell lymphoma (MCL) were analysed. Age, gender, hematologic and biochemical parameters, hepatomegaly, splenomegaly, bone marrow involvment, extranodal localization, clinical stadium (Ann Harbor) and International Prognostic Index (IPI) were studied. For data processing we were using methods of descriptive and analytical statistics (Student t test, Kaplan-Meier curve for overal susurvival). All 20 patients with advenced stage of MCL recived therapy with CHOP regimen as the first line treatment.
Results: From 20 patients there were 12 males and 8 females (ratio 1.5:1), with median age of 62 years (range, 37-74 years). Anemia and lymphocytosis were present in 80% of patients, trombocytopenia in 60%, leukocytosis in 70% of patients. Increased values of lactate dehydrogenase had 20% of patients. Hepatomegaly were present in 50%, splenomegaly in 80% of patients. Hepatosplenomegaly was present in 45% of patients. Extranodal localization were present in 15% of patients. All patients have had bone marrow involvment: diffuse type 55%, nodular type 45%. The presence of diffuse type of bone marrow infiltration significantly reduce the length of survival ($P < 0.01$; long rank) compared to the nodular type of infiltration.In 4. clinical stage were 45% of patients, and in 5. were 55% patients. IPI with a value of 2 was present in 30%, with a value of 3 at 55%, with a value of 4 at 5%, with a value of 5 in 10% of patients. Value of IPI significantly influenced the length of overal survival ($P < 0.01$; long rank). 18 patients were treat with CHOP (cyclophosphamide, doxorubicin, vincristine, prednisone), 2 patient were trat with PMCB (pro-mace-cytabom). Overal survival in patients with MCL were 29.6 months (range, 6-82 months). The length of survival of female patients was from 8 to 82 months, median 22, average length of survival was 31.25 months. In male patients, the length of survival is from 6 to 62 months, median 24, and the average length of survival of 28.5 months. The cause of death in most of patients were progressive disease or infection as a complication of lymphoma.
Conclusions: Results show that MCl characteryse advenced clinical stadium and poor response to treatment. The length of the overal survival of only 29.6 months, significantly deviates from the official data. The presence of diffuse type of bone marrow infiltration significantly reduce the length of survival. International prognostic index was the most important prognostic factor affecting the average length of survival. These results show clearly that more effective therapies for MCL are needed.

Hyperthermic intraperitoneal chemiotheraphy (HIPEC) - which patients without signs of peritoneal dissemination should be considered to be treated with this method?

ESC-ID: 1403
Authors: Dobosz L, Sadowska A, Gornowicz K, Klasa L. Drucis K.
Country: Poland
University: Medical University of Gdansk , Department: Oncological Surgery

Introduction: Hyperthermic Intraperitoneal Chemiotherapy (HIPEC) is a new method of treatment used in patients with peritoneal dissemination of neoplasms. The aim of our study was to evaluate, which patients with neoplasm of organs within the peritoneal cavity without signs of peritoneal carcinomatosis should be considered to be treated with the HIPEC method.
Materials and methods: We analyzed prospectively 24 patients (14 men and 10 women) aged from 36 to 77 years (average = 64, SD = 9.7) who underwent surgery on the peritoneal cavity from November 2009 to the end of May 2010 (15 patients with stomach cancer, 8 patients with colorectal cancer, 1 patient with ovarian cancer) and in whom lavage cytology (n = 20) or scrapings from the peritoneal cavity (n = 6) during the surgical treatment were collected.
Results: Neoplasm cells in peritoneal fluid were found in 3 patients (12.5% of patients). All patients with peritoneal metastases were diagnosed with stomach cancer classified as T3. Patients with colorectal cancer and ovarian cancer showed no presence of cancer cells in peritoneal fluid. Patients from whom scrapings from walls of the peritoneum were collected did not show the presence of neoplasm cells in the examined material.
Conclusions: The present results shows that the neoplasm spread to the peritoneum is more frequent in patients with stomach cancer than in patients with colorectal cancer. Nearly one in four patients with stomach cancer have metastases to the peritoneum. People with stomach cancer should be a group, which should be strongly considered to apply the HIPEC treatment method in order to improve their 3-year survival rate, that is estimated to be 0%, after HIPEC raises up to 40-45%. But this issue still requires further study on a larger population.

Castleman' disease - a case of localised form with an excellent outcome with surgical resection

ESC-ID: 1416
Authors: Beleva E, Gryklanov V, Babacheva V, Goranova-Marinova V
Country: Bulgaria
University: Medical University - Plovdiv , Department: Clinic of Haematology

Introduction: Castleman's disease (CD; angiofollicular lymphoid hyperplasia) is a heterogenous group of lyphoproliferative disorders of uncertain cause. Three histologic variants (hyaline vascular, plasma cell and mixed) and two clinical types (localized and multicenric) have been described. For the localized type surgical excision is cura-

tive while multicentric disease often nessecitates systemic therapy and has a poor outcome. Case presentation: We present a case of CD with localized form of plasma cell histological variant. The patient was a 50 years old female. She was diagnosed in 2003 with a retroperitoneal single nodular mass 5cm in size and no constitutive symptoms. Laboratory tests of complete blood count, differential blood count, LDH, CRP and beta-2-microglobulin were within normal ranges. The patient had no hyper or dysglobulinemia. Serological tests of HBsAg, HCV and HIV were negative. Surgical resection was performed. The tumour mass was totally removed. The histological examination revealed "CD - plasma cell variant". The patient is in remission, on regular follow-up. Discussion: Two histological variants with distinctive clinical features and a mixed form between them are described. They do not correlate with the course of the disease. The clinical forms - solitary and systemic have quite different manifestation, evolution, treatment and outcome. Typical of the localized form are: peak incidence in the 3rd decade of life, incidental finding of an asymptotic tumour mass, most often in the mediastinum or abdomen. The tumour may be presented by all the histological variants - hyaline vascular, plasma cell or the mixed form. After total surgical eradication the prognosis is excellent with 100% survival at 5 years.
Conclusion: The case reveals one of the different faces of this rare lymphoproliferative disorder. The localized process, although of plasma cell variant confirms the excellent outcome with only surgical resection and does not need systemic treatment with chemotherapy.

Detection of RASSF1A hypermethylation of fibroadenoma mammae and breast cancer

ESC-ID: 1424
Authors: Gulo GS
Country: Indonesia
University: Universitas Gadjah Mada , Department: Histology and Bioogy Molecular

Introduction: Fibroadenoma mammae (FAM) and breast cancer are the common breast lesion all over the world. FAM is benign tumor arise from hyperproliferation of fibrous and glandular tissue while breast cancer is initiated by the activation of oncogenes and inactivation of tumor suppressor genes. Methylation of the tumor suppressor gene RASSF1A is one of the most frequent epigenetic inactivation detected in human and leading to silencing of RASSF1A expression. RASSF1A protein is involve in apoptotic signaling, microtubule stabilization, and cell cycle progression. Gail model showed methylation of RASSF1A promoter is more frequently happen in unaffected woman at high-risk for breast cancer than in low risk women. Aim of this study is to compare the RASSF1A promoter hypermethylation in fibroadenoma mammae and breast cancer cases.
Methods: DNA of Fifty-two well-characterized fibroadenoma mammae (FAM) and 119 breast cancer tissues were analyzed using methylation-specific PCR (MSP) to identify RASSF1A methylation status of tumor tissues.
Results: In total of 52 FAM and 119 breast cancer samples, 46 (88%) and 107 (90%) samples are methylated respectively and showed no significant different methylation result (p>0,05) between those two different breast lesion.
Conclusion: RASSF1A methylation in FAM and breast cancer showed similar proportion, therefore methylation status of this gene maybe more useful as one of the risk factor of having abnormality of breast tissue compare to as cancer early detection marker.

External beam radiation therapy with hormone therapy in the treatment of prostate cancer

ESC-ID: 1447
Authors: Georgievska B, Jordanovski D, Jovanoski A
Country: Macedonia
University: St. Cyril and Methodius , Department: University Clinic of Oncology

Purpose: The aim of the study is to analyze the effectiveness of external beam radiation therapy combined with hormone therapy in patients with prostate cancer that were treated with neoadjuvant hormone therapy followed by concurrent hormone therapy with external beam radiation therapy and adjuvant hormone therapy.
Methods: 20 patients, with an average age of 60 diagnosed with locally advanced prostate carcinoma were examined that were subjected to total androgen blockade hormone therapy and antiandrogens starting 1-2 months before radiotherapy, continuing during the irradiation and 6 months after. 1-2 cycles of hormone therapy was performed, after which radiotherapy was performed to the pelvic lymph nodes and prostate cavity. The radiation therapy was performed with 15 MeV X-rays and box technique 50 Gy, with 1.8 Gy per day with appropriate boost dose. 55% of the patients scored a Gleason score of 3+3 while 45% scored 4+4. After the radiation therapy, the patients were examined for various side effects, such as bowel, bone marrow etc.
Results: The combination of radiation and hormone therapy did not change the quality of life

The evaluation of survival and proliferation of lymphocytes in autologous mixed lymphocyte reaction with dendritic cells. The comparison of incorporation of 3H-thymidine and differential gating.

ESC-ID: 1455
Authors: Vesela R, Dolezalova L, Pytlik R, Rychtrmocova H, Mareckova H, Trneny M
Country: Czech
University: First Faculty of Medicine, Charles University in Prague , Department: 1st Department of Medicine

Dendritic cells (DCs) are generally considered to be the most potent antigen-presenting cells which play the key role in T-lymphocyte proferation and induction of antitumour response. The mixed lymphocyte reaction of T-lymphocytes and DCs is one of essential instruments for immunological mechanisms studies. Conventionaly used method for determination of T-lymphocytes proliferation, incorporation of 3H-thymidine, provides only general information on survival and proliferation of T-lymphocytes. The method of flow cytometry and differential gating seems to be more suitable for quantitative and also qualitative analysis of T-lymphocyte proliferation. It is

based on time limited acquisition of events and on its ditribution according to forward and side scatter values. We decided to compare these two methods and determine mutual corelation and compatibility. Nine untreated patients with chronic lymphocytic leukemia (CLL), one patient with relapsed CLL and one untreated patient with B-cell non-Hodgkin lymfoma were studied. In all cases DCs promoted the survival and proferation of both CD4 and CD8 lymphocytes but the response was much more higher in CD4 subset. Both methods retain consistent tendency of survival and proliferation of CD4/CD8 lymphocytes. However, the correlation of these methods was not convincing. Therefore, both these methods might be used for evaluation of MLR, but each of them gives specific and complementary information.

Session: Immunology

Upregulation of vasoactive intestinal polypeptide and synaptophysin expression in stellate ganglia of children with thymus hyperplasia.

ESC-ID: 524
Authors: Sokal A, Rogov YR, Kuehnel W, Roudenok V
Country: Belarus
University: Belarusian State Medical University , Department: Human Anatomy

Thymus hyperplasia belongs to one of the most characteristic pathomorphologic changes in children whose death was caused by sudden infant death syndrome (SIDS). As other serious findings were absent, frequent causes of enlarged thymus in the development of the „status thymolymphaticus“ concept, and sudden death itself was marked as „mors thymica“. To explain possible association between SIDS and thymus hyperplasia several theories were suggested including the theory of mechanical pressure on mediastinal organs or autointoxication. Correlation between enlarged thymus and hyperfunction was also considered. However, none of the theories has received complete confirmation. The interactions between autonomic nervous system, primary and secondary lymphoid organs are well established therefore disturbance of one regulatory link, inevitably affects the activity of other regulatory systems, the expression of neuropeptides in particular. Thymus is a central organ of lymphatic- and immunopoiesis, the functions of which include the control and regulation of correlations in the immune, endocrine and nervous systems. The innervation of the organ is diverse, i.e. branches of the vagus, nervous frames themselves, vegetative and sensitive ganglions, among which the stellate ganglia should be particularly emphasized. Its impact on organs-targets thymus renders through secretion of a set of biologically active substances, which includes vasoactive intestinal polypeptide (VIP). Vasoactive intestinal polypeptide is - one of the most significant neurotransmitters of peptide nature, which is expressed in organs and cells of various regulatory systems, including the thymus and stellate ganglia. Synaptophysin (SYN) is a general integral protein of secretory vesicles and its expression characterizes the enhancement of cellular secretory activity as a whole. Considering the functions of VIP including its influence on the cardiovascular system activity, an assumption about the possible relationship between sudden infant death syndrome and thymus with hyperplasia was made. The purpose of this research was to study the distribution patterns of synaptophysin and vasoactive intestinal polypeptide in the human thymus hyperplasia and stellate ganglia by method of indirect immunohistochemistry. Thymus and stellate ganglia samples were obtain by autopsy from 15 children (age 2-6 years). Postmortem delays varied from 2-12 hours. For control purpose autopsy thymus samples of children similar age were used. All specimens were free of genetic and congenital malformation. The results demonstrated significant upregulation of VIP- and SYN-immunoreactivity expression in stellate ganglia neurons and thymus samples of children with thymus hyperplasia comparison to control group. Antibodies to SYN and VIP gave labeling in thymus: subcapsular, cortex and medulla zones, including epithelial-like cells of Hassal's corpuscules and in thin fibres with varicosities surrounding the outer layer of the ones; marked increase of VIP and SYN expression in stellate ganglia samples has been also registered. Taking into consideration, biological properties of vasoactive intestinal polypeptide, particularly its influence upon circadian rhythms and ability to cause bradicardia including heart failure, as well as arterial hypotensia, it has been suggested that raising a level of VIP expression in the stellate ganglia and in the thymus with hyperplasia can be one of the probable causes of a sudden infant death syndrome.

Pull down and expansion of naive CMV-specific T-cells covering multiple HLA class I alleles

ESC-ID: 550
Authors: Raz Y, Hombrink P, Von dem Borne PA, Falkenburg JHF, Heemskerk MHM
Country: The Netherlands
University: Leiden University Medical Center , Department: Experimental Hematology

Introduction: Allogeneic bone marrow transplantation is a valuable treatment for several hematological malignancies, such as leukemia. Post-transplantation cytomegalovirus (CMV) reactivation constitutes a serious risk of this treatment, especially when CMV-negative donors are used. CMV reactivation can be successfully treated with adoptive T-cell therapy. The extremely low frequency of antigen-specific naive T-cells has challenged us to develop a sensitive and effective method to study the naive T-cell repertoire. In this study, we present a novel approach for the generation of CMV-specific T-cell lines, covering multiple HLA class I alleles, derived from the naive T-cell repertoire.
Methods: CMV-specific T-cell lines were generated from CMV-negative individuals. One hundred million peripheral blood mononuclear cells were stained with a panel of CMV-specific class I major histocompatibility complex tetramers. Tetramer positive T-cells were pulled down by magnetic-activated cell sorting (MACS) and cultured in the presence of autologous feeders and anti-CD3/CD28 stimulation beads. To increase the frequency of CMV-specific T-cells in culture, pull down was repeated after ten days.
Results: Using this approach we generated CMV-specific T-cell lines from four out of four CMV-negative individu-

als. The cell lines were generated within four weeks and covered multiple CMV epitopes. The frequency of CMV-specific T-cells varied between 20 to 80% of total cultured T-cells. To analyze the peptide specificity and functionality of the different T-cell populations, we generated CMV-specific T-cell clones. These clones were tested in addition to the complete cell-lines in a cytokine secretion and cytotoxicity assay. CMV-specific T-cell populations demonstrated variable cytotoxicity upon endogenous peptide presentation. As might be expected in CMV-negative individuals, both high and low affinity T-cell populations were isolated. In addition, different cytokine secretion profiles were observed after stimulation.
Conclusion: The fast and effective approach described here can be utilized for the generation of CMV-specific T-cell lines from CMV-negative individuals. This method may be of potential clinical use in adoptive cellular immunotherapy for treatment of CMV reactivation.

Antithymocyte globulin (ATG) modulates the humoral immune response via direct action on B cells

ESC-ID: 654
Authors: Klaus P, Rasche C, Heine G, Worm M
Country: Germany
University: Charité - Universitätsmedizin Berlin , Department: Department of Dermatology and Allergy

Antithymocyte globulin (ATG) is a polyclonal antibody preparation made by immunizing rabbits with human thymus cells. It is widely used in organ transplantation as a T cell depleting agent, but recent investigations have also unraveled its B cell directed activity. Additionally, ATG has been administered for the therapy of several autoimmune diseases, with promising outcomes. Our aim was to study the direct impact of ATG on peripheral B cells. We isolated and cultivated peripheral blood mononuclear cells (PBMC) and CD19+ B cells. Cytotoxicity was measured by dye exclusion technique using trypan blue, and by flow cytometric analysis of phosphatidylserine expression using annexin V. The humoral immune response was measured by enzyme-linked immunosorbent assay (ELISA) and enzyme-linked immunosorbent spot assay (ELISpot). Using flow cytometry, B cells were analyzed for the expression of CD20, CD27, CD38, and CD138. Cell death was slightly elevated in PBMC treated with ATG, but was not elevated in B cell cultures. Antibody levels, however, were significantly reduced in both PBMC and B cell cultures, as well as numbers of IgG-secreting cells. FACS analysis confirms that ATG reduces the amount of antibody-secreting cells. ATG not only lowered total IgG but also specific IgG: Anti-Dsg3 in supernatants of PBMC from a patient with highly active pemphigus vulgaris was decreased in the presence of ATG. Our results indicate that ATG modulates B cell differentiation and the humoral immune response without exerting cytotoxic effects. This data supports the development of new strategies for the treatment of autoimmune diseases where autoreactive B cells and plasma cells play a vital role using low-dose ATG.

Regulation of CD8+CD28- suppressor T cells with toll-like receptors

ESC-ID: 778
Authors: Bilgin H, Tulunay A, Elbasi MO, Eksioglu-Demiralp E
Country: Turkey
University: Marmara University School of Medicine , Department: Department of Immunology

Introduction: Innate immune system recognizes pathogen associated molecular patterns with their toll like receptors (TLR). Recent studies demonstrated that TLRs are also found on T cells and play a role in the regulation of T cell activation.
Aim: To investigate the role of TLR in the regulation of CD8+CD28- suppressor T cells.
Material and methods: Peripheral blood mononuclear cells were cultured for 72 hours with phytohemaglutinine (PHA). We analyzed TLR1, TLR2, TLR3 and TLR4 expressions on CD8+ T cell populations before stimulation, and after 24 and 72 hours with flow cytometry. CD8+CD28- and CD28+CD28+ T cells were isolated using magnetic beads. For proliferation and suppression analysis, 5-ethynyl-2'deoxyuridine was used.
Results: Analysis of TLR1 expression on CD8+ T cell populations revealed that PHA stimulation upregulated TLR1 expression on CD28+ subset 15.8 folds after 24 hours. However, for CD28- subset, TLR1 expression increased only 3 folds at the 72nd hour ($p<0.05$ for all cases). Although TLR2 expression on CD8+CD28+ subset increased up to 11.9 folds after 24 hours and 54,2 folds after 72 hours, CD28- subset showed only a 5,25 fold increase after 24 hours and returned to its basal level at the 72nd hour ($p<0.05$ for all cases). For TLR3 expressions, CD28+ subset had a 7.9 fold increase in a 24 hour PHA stimulation, but CD28- subset had only a 2.1 fold increase ($p<0.05$ for all cases). TLR4 expression on CD8+CD28+ subset was increased 19 folds at the 24th hour and no difference was observed at the 72nd hour. Instead, TLR4 expression of CD28- subset increased 3 folds at the 24th hour and 7.8 folds at the 72nd hour ($p<0.05$ for all cases). When proliferation capacities of CD8+ T cells were analyzed, CD28- subset was found to have a lower proliferation capacity compared to CD28+ subset (1.9 fold, $p<0,05$). Suppression analysis showed that CD8+CD28- population suppresses CD4+ effector T cell proliferation compared to CD8+CD28+ population (%9±7.8 vs %19.1±15.8 $p<0.05$)
Conclusions: We found that, expressions of TLRs do not increase on CD8+CD28- T cells compared to CD8+CD28+ population. These suppressor cells also have a lower proliferation capacity compared to CD28+ effector subset. With the findings of suppression ability of this population, we can suggest that, in the same microenviroment, CD8+CD28- T cells do not respond to pathogens or self-antigens when compared to effector CD8+CD28+ T cells and they suppress the function of other reactive T cells.

sgp130Fc inhibits IL-6 trans-signaling depending on local sIL-6R levels and IL6-receptor expression

ESC-ID: 786
Authors: Thaiss WM, Rose-John S, Scheller J
Country: Germany
University: Christian-Albrechts-Universität Kiel , Department: Biochemistry

Interleukin-6 (IL-6) plays a pivotal role in the development, establishment and homeostasis of chronic inflammatory diseases and cancer and therefore makes IL-6 signaling a potential target of immunomodulatory interventions. IL-6 can either signal via a membrane-bound (mIL-6R = classic signaling) or a soluble receptor (sIL-6R = trans-signaling). Both receptors mediate the IL-6 signal via gp130. The soluble form of gp130 (sgp130) acts as the natural inhibitor of sIL6-R-mediated signaling and thereby selectively inhibits this part of the IL-6 signaling pathway, which is believed to be essential for disease development. Therefore, the adapted sgp130Fc fusion protein might have immunomodulating properties, which influence the onset and outcome of chronic inflammatory diseases and cancer development. In contrast to recently described antibodies that selectively target IL-6R, sgp130Fc does not interfere with the signals via mIL-6R that are important for liver regeneration and lymphocyte recruitment. The aim of this study therefore was to describe the inhibitory effects of the sgp130Fc protein in IL-6-stimulated cell cultures and in IL-6 treated mice. These experiments were determined to shed light on the therapeutic potential of spg130Fc in the quest against chronic inflammatory diseases. Immortalized murine pre-B-cells (Ba/F3) constitutively overexpressing gp130 or additional mIL-6R on their surface were stimulated with increasing doses of IL-6 simulating classic signaling or Hyper-IL-6 (covalently linked IL-6+sIL-6R) simulating trans-signaling. After stimulation, cell proliferation (fluorescent viability assay) and pSTAT3-expression (Western blotting) were determined. The experiments demonstrate that (i) cells with IL-6R respond to IL-6 dose dependently, (ii) all cells respond to IL-6+sIL-6R through gp130 and (iii) even in the presence of mIL-6R IL-6 trans-signaling via the IL-6/sIL-6R can be blocked with sgp130Fc in a dose dependent manner. To identify possible differences in the local immune response, the phosphorylation pattern of the IL-6 target protein STAT3 was examined in whole organ lysates of liver, lung and colon from mice treated with sgp130Fc in vivo. Mice were injected i.p. with IL-6 or Hyper-IL-6. Added sgp130Fc showed blockade of trans-signaling in all organs analyzed by Western blotting and immunohistochemistry after 90 minutes. Classic IL-6 signaling in the liver was not reduced by the presence of sgp130Fc whereas in the gut a significant reduction of the IL-6-mediated signaling was detected indicating larger amounts of sIL-6R in the colonic milieu. These experiments demonstrate that trans-signaling pathways of IL-6 can be repressed both in vitro and in vivo with sgp130Fc. Therefore, sgp130Fc defines a newly described therapeutic option where (i) trans-signaling and thereby the pro-inflammatory aspects of the IL-6 pathway can be selectively blocked yet (ii) permitting signaling via membrane bound IL-6R to allow homeostatic and developmental effects of IL-6. The biomolecule sgp130Fc therefore might be of potential therapeutic advantage in chronic immune mediated diseases and cancer development where it might potentially be employed to selectively inhibit pro-inflammatory sIL-6R trans-signaling while permitting homeostatic mIL-6R signaling pathways.

Novel protocol for prime-boost immunization: Combination of Salmonella T3SS-mediated antigen delivery and CpG oligonucleotide treatment leads to superior protective immunity

ESC-ID: 791
Authors: Berchtold C, Panthel K, Jellbauer S, Köhn B, Roider E, Partilla E, Bourquin C, Endres S, Rüssmann H
Country: Germany
University: LMU Munich , Department: Max von Pettenkofer - Institute

The Salmonella type III secretion system (T3SS) can be used to deliver heterologous antigens directly into the cytosol of host cells leading to efficient CD8 T cell priming. Previously, we have reported that the rapid clearance of a recombinant Salmonella vaccine strain prevents enhanced CD8 T cell responses after boost immunizations due to anti-vector immunity. In an attempt to circumvent this problem, we evaluated the combination of Salmonella-T3SS-mediated antigen delivery and CpG oligonucleotide treatment as a novel protocol for prime-boost immunizations. As a model nonamer peptide we used the MHC I-restricted p60 217-225 epitope of Listeria monocytogenes. Four vaccination groups (VG) of BALB/c mice were immunized as follows: mice of VG1 remained non-immunized; mice of VG2 received CpG-p60 217-225 subcutaneously on day 0 and day 7; mice of VG3 were orally immunized with a single dose of Salmonella expressing T3SS-translocated p60 on day 0; and mice of VG4 were primed with Salmonella T3SS-p60 on day 0 and boost-immunized with CpG-p60 217-225 on day 7. In mice of all four VG, the frequency (%) of splenic p60217-225-specific CD8 T cells was determined by tetramer staining and FACS analysis on day 21 (VG1, 0%; VG2, 7%; VG3, 13%; and VG4; 24%). To determine how these significantly different T-cell frequencies contribute to protective immunity, mice were intravenously challenged with 10(4) colony-forming units (CFU) of wild-type Listeria. Three days later, CFU of Listeria were enumerated in spleens. Surprisingly, despite existing p60-specific CD8 T cells in mice of VG2, no protective immunity against listeriosis could be observed (VG1, 5.5x10(5)CFU; VG2, 5.0x10(5) CFU). In contrast, all mice of VG3 revealed Listeria counts in a range between 10 and 100 CFU. Strikingly, in ~90% of VG4-mice a sterile immunity was detected (~10%, 10-15 CFU). In summary, our novel prime-boost protocol leads to improved antigen-specific CD8 T cell induction and to superior protective immunity.

Genetically engineered T cells redirected to target Her2/neu expressing tumor cells and its possible implications for adoptive immunotherapy in ovarian cancer.

ESC-ID: 796
Authors: Kelderman S, Lanitis E, Powell D
Country: The Netherlands
University: University of Pennsylvania (visiting) , Department: Department of Obstetrics and Gynecology

Background and aim: Despite aggressive treatment regimens ovarian cancer still remains the most lethal

amongst gynecological malignancies accounting for 14,600 deaths in the U.S. in 2009. Initial treatment is comprised of cytoreductive surgery and combination chemotherapy, which generally leads to successful outcomes. However, patients often present with advanced stage disease due to late-onset of symptoms and most will eventually become non-curable. Therefore, new therapeutic strategies to improve prognoses are highly desired. One of the most promising is adoptive immunotherapy, which is based on the induction and enhancement of the host antitumor response by identifying tumor-reactive T lymphocytes from primary lesion sites or ascites followed by ex-vivo stimulation and subsequent reinfusion into the patient. This strategy has already been successfully employed in patients with metastatic melanoma refractory to other treatments, showing objective clinical responses in 50% of the cases. However, tumor escape, often caused by downregulation of MHC-expression, poses a serious problem for effective immunotherapy in ovarian cancer. To address this issue, the intracellular signaling domains of T cell receptors can now be genetically combined with the high-affinity binding portion of antibodies in the chimeric antigen receptor (CAR) approach. In ovarian cancer the Her2/neu-associated antigen is often expressed on the tumor cell surface, thus making these tumors susceptible to engineered T cell therapy. In this study we sought to genetically redirect human T cells to Her2/neu-expressing tumor cells and determine their ability to exert potent anti-tumor effector functions in vitro.

Materials and methods: To achieve this, the Her2/neu scFv was subcloned into a pCLPS vector, containing a CD8a hinge/transmembrane region and CD3z intracellular signaling domains for transfection of HEK 293 cells and subsequent lentiviral transduction of human T lymphocytes. We then tested the ability of Her2/neu redirected T cells to produce pro-inflammatory cytokines when being co-cultured with tumor.

Results: Our results show that we were able to express the CARs on the T cell surface, as determined by flow cytometry achieving transduction rates of >50%. The Her2/neu redirected T cells showed strong effector functions against tumors that express the antigen even at low levels.

Conclusion: We conclude that we have successfully redirected human T cells to target Her2/neu expressing ovarian cancers and elicit a specific anti-tumor immune response in vitro.

The features of immunopotentiating acupuncture component

ESC-ID: 890
Authors: Krotkova O, Ivanova O
Country: Russia
University: Chuvash state university named after I.N. Ulyanov, Department: Medical

According to the modern data, immunodeficiency states are found out in more than 35 % of the patients addressing to doctors. In this plan the acupuncture - a method improving the work of immune system and enlarging reserve possibilities of an organism is of great interest. T - and the B-lymphocytes participating in the immune answer since the first minutes serve as instruments of adaptive immune system. However the subpopulation structure of lymphocytes of the central and peripheral organs of immunity, and also their interaction after an acupuncture are studied insufficiently. Research objective: by to tap localization and quantitative distribution CD4 + and CD8 + cells in a thymus, a lien and a skin, in a projection acupuncture points, on different terms after acupuncture in the points influencing immune system means of immunohistochemical methods.

Materials and methods: Researches have been carried out on 37 white not purebred mice-males to the autumn period. Sections of a thymus, a lien and skin of 5 microns for revealing subpopulations CD4 + and CD8 + were processed by immunohistochemical techniques with application of corresponding monoclonal antibodies. 3 groups of animals were allocated: the 1st - intact mice (N=5); the 2nd - control - mice (N=12) influenced by an acupuncture needle for 10 minutes near to an acupuncture point; 3rd - mice (N=20) which were influeced acupuncture within 10 minutes to the points of a meridian acupuncture of the thick intestine LI 4, possessing immunomodulatory effect, and the posteromedian meridian GV 14, influencing the sympathetic nervous system. A thymus, a lien and skin, in the field of the above-stated points, were take out in 15 minutes, 1, 2 and 4 hours after acupuncture under narcosis. Statistical processing of the results were carried out by means of program Statistica 6. Reliability of the differences between skilled and intact group were estimated by t-criterion of Stjudenta and criterion Manna-Uitni. It is established that acupuncture in points of an acupuncture LI 4 and GV 14 changes a morphofunctional condition of a thymus, a lien and skin of mice. In the thymus in 15 minutes after acupuncture the maintenance of thymocytes with phenotype CD4 + and CD8 + in all the investigated structures was enlarged, except the depth of the cortical layer where the maintenance of CD8 + cells has gone down. After 2 hours the number of CD4 + thymocytes reaches the maximum in the experiment and is enlarged more than 8 times in all the investigated zones in comparison with the intact group. In the depth of the cortical layer the number of CD8 + cells has come nearer to the value of the intact group. In 4 hours after the procedure the investigated subpopulations of lymphocytes have decreased more than in 3,5 times practically in all structures in comparison with the previous term, but the remained higher, than with the intact group. In the control sections at the all terms the processes similar to the reactions, at stress were observed. In the lien the number of CD4 + splenocytes reaches the maximum in 15 minutes after the acupuncture, to the end of the experiment it remains increased more than in 2 times. It can testify to the activation of immunocompetent cells and formation of system immune reaction. The change in number of CD8 + splenocytes of a red pulp had wavy character. The quantity of CD4 + and CD8 + splenocytes under a capsule to the end of the experiment became lower, than in the intact group. The number of immune cells in the skin in the projection of acupuncture points prevailed over the number of cells out of points. CD4 + and CD8 + cells basically were localised in the papillary layer of a derma and perivascularly. Thus, the acupuncture in the points of acupuncture LI 4 and GV 14 is an effective remedy on the immune system, capable to cause the activation of the processes of proliferation and differentiation.

Induction and function of IL-10 in natural CD4+CD25 regulatory T-cells (Treg).

ESC-ID: 914
Authors: Köhler L, Brandenburg S, Janke M, Rutz S, Scheffold A
Country: Germany
University: Deutsches Rheumaforschungszentrum Berlin, Germany , Department:

Though the incidence of autoimmune diseases is increasing worldwide the treatment options remain limited. Naturally occurring CD4(+)CD25(+) regulatory T cells (Treg) play a key role in the maintenance of self tolerance. The exact mechanisms are still a matter of discussion, but a rising number of studies suggest a mayor role of the immunsuppressive cytokins IL-10 and TGF-ß. In previous studies our group could show that IL-10 expression can be induced in Treg in vitro. Therefore, we wanted to analyse if in vitro induction of IL-10 in Treg and a transfer of those activated cell could represent a therapeutic option. In order to optimize IL-10 induction Treg were stimulated in vitro under defined conditions and the expression of IL-10 was analysed by intracellular staining. Using this in vitro assay we screened different factors such as co-stimulatory molecules, different cytokines and Toll like receptor (TLR) signals for there potential to induce IL-10. We could show that in vitro stimulation with antibodies directed against CD3 and CD28 molecules for 72-96h in the presence of IL-2 induced IL-10 in 15-20% of the activated Treg. The activated Treg showed a strong suppressive capacity in a standard in vitro suppression assay. The potential of the IL-10 producing Treg to suppress the proliferation of naive T cells in vivo was analysed in a DNA vaccination mouse model. In this model only activated Treg suppressed the proliferation of naïve T cells in a IL-10 and TGF-ß dependent manner. The suppression by antigenspecific Treg was stronger due to additional suppressive mechanisms. In a second mouse model the suppressive capacity was analysed in a Th1 dependent inflammation. In this model only activated antigenspecific Tregs could suppress the inflammatory reaction in an IL-10 dependent manner. Surprisingly the Treg with the strongest potential to express IL-10 lost their suppressive capacity after 4 days. This indicates that other factors such as strength of activation, cytokine memory, migration and in vivo survial also play an important role. This work shows that an in vitro activation of Tregs before transfer is essential for the suppression of inflammatory reactions. Although IL-10 is an important cytokine mediating this suppression, an exclusive focus on IL-10 induction during this activation is not sufficient. Therefore further work on the in vitro activation will include more markers (e.g. CD103 and TGF-ß). The in vivo analyses of the activated Treg will include cell migration, cytokine memory and in vivo survival of Treg. All models showed a significant advantage using antigenspecific Tregs, indicating that this transfer strategy might be more valuable in autoimmune diseases with known autoantigens (e.g. Multiple Sclerosis and Myasthenia gravis).

The Circadian Clock in Macrophages.

ESC-ID: 920
Authors: Mazuch J, Eom G, Kramer A, Maier B
Country: Germany
University: Charité – Universitätsmedizin Berlin , Department: Institut für Immunologie / AG Chronobiologie

In the immune system various parameters and immune functions, like blood levels of lymphocytes and cytokines are subjected to daily variations. At least some of these rhythms are likely of biological relevance since it has been shown that the mortality rate of mice dramatically depends on the time of day when LPS is injected, ranging from 10% at midnight up to 90% in the afternoon. Thus, it is assumed that the circadian system modulates immune functions. However, the molecular mechanisms that link the circadian clock and the immune system are so far unknown. To investigate the molecular mechanisms of circadian modulations in the immune system, we use mouse macrophages as a model system. We show that the mRNA levels of the canonical clock genes Per2 and Rev-Erba show circadian expression pattern in ex vivo isolated peritoneal macrophages. These rhythms persist even in in vitro cultured peritoneal cells from PER2: LUC reporter mice detected by bioluminescence recording. Additionally, we show that isolated splenic and peritoneal macrophages secrete TNF-alpha, one prominent LPS induced cytokine, in a circadian manner upon stimulation with LPS. These results indicate that a macrophage intrinsic clock modulates the response to LPS. To analyze the circadian regulation on a transcriptional level we performed a whole genome microarray analysis of isolated peritoneal macrophages, collected in a time course for two days. These data show that more than 10% of the macrophage transcriptome is rhythmically expressed. Besides core clock genes we could also identify circadian expression patterns for several key players involved in the LPS responsive pathway as well as in macrophage output function. Our data support the idea of a robust local circadian clockwork as a modulatory component in macrophage function and provide first insights into that regulation on transcriptional level.

Factor v leiden and prothrombin gene mutation g202100a in early pregnancy loss

ESC-ID: 1324
Authors: P. Ivanov, R. Komsa-Penkova, E. Konova, Tanchev, Taaran Cariappa Ballachanda Subbaiah
Country: Bulgaria
University: Medical University Pleven , Department: Reproductive Immunology

Objectives: To evaluate the impact of inherited maternal thrombophilia: carriage of Factor V Leiden (FVL) and G20210A Prothrombin gene mutation (PTM), for the development of recurrent early pregnancy losses (EPL) (before 14 weeks of gestation) and to identify a subgroup at higher risk of being carriers of these mutations.
Study Methods: Blood samples of 153 women with pregnancy losses before 14 weeks of gestation (wg) were investigated by polymerase chain reaction and restriction analysis to detect FVL (G1691A) and PTM (G20210A) genetic defects. The patients were analyzed according to placenta gestation: women with embryonic loss - before

10 wg (94) and women with early foetal loss - from 10 to 14 wg (59). Control group consisted of 100 healthy women.
Results: FVL prevalence was not significantly higher in women with embryonic loss (before 10 wg) (9.6%) OR: 1.407, 95% CI: 0.454-4.416, p=NS compared to controls (7%), however, FVL prevalence was important in women with early foetal loss (from 10 to 14 wg): (18.6%), with OR 3.045, 95% CI: 1.010-9.387, p=0.047. PTM prevalence was found significantly higher in both groups with embryonic (17%, OR: 6.632, 95% CI: 1.731-29.752, p=0.003) and early foetal loss (16.9%, OR: 6.599, 95% CI: 1.572-31.856, p=0.006).
Conclusions: Heterozygous FVL and prothrombin G20210A are both associated with an increased risk of recurrent EPL, but differ in periods of manifestation. The magnitude of the increased risk for EPL in carriers of PTM is high throughout the whole period of 14 gestational weeks. Indeed, the risk related to FVL carriage is significant in women with EPL, after 10 wg. Therefore, the appliance of testing of certain genetic markers has potential benefits for definite periods of pregnancy losses.

Bone defect healing induced by mesenchymal stem cells

ESC-ID: 1386
Authors: Suresh M, FBojin F, Anghel S, Gruia A, Ordodi VL, Tatu C
Country: Romania
University: University Of Medicine and Pharmacy' Victor Babes' , Timisoara, Romania , Department: Department of Physiology and Immunology

Aim: Bone defects are difficult to heal when large part of tissue is lost. Mesenchymal stem cells (MSCs) are used for in vitro studies showing they can differentiate into osteoblasts, thus being able to contribute to bone-like structures formation when seeded on scaffolds. Purpose of our study was to show that demineralized bone can be used as biological scaffold together with different cellular types inducing rapid healing of defects.
Material and methods: Femoral bones were obtained from rats sacrificed during other experiments and submitted to demineralization protocol, being further used as scaffolds. Study group comprised 10 male rats, 6-8 weeks old; 0.5 ml of bone marrow was harvested from iliac bone and cultured in adherent plates. Part of bone marrow-derived MSCs were maintained in culture, rest of cells being differentiated into adipocytes, chondrocytes and osteoblasts to show the trilineage potential of MSCs. Histochemical techniques used specific staining for each lineage - Oil Red O, Alcian Blue, Safranin O, von Kossa; MSCs were positively stained for Vimentin. Bone defects of approximately 5 mm were made on both femoral bones of each rat and biologic scaffolds combined with MSCs and osteoblasts respectively were used to fill the defect. As control, we used only scaffolds implant and no implant at all. Bone healing was radiological evaluated every 10 days and the animals were sacrificed when the image showed appropriate healing.
Results: Immunohistochemical staining showed different degrees of bone remodeling on paraffin-embedded samples taken from the defect area. Healing process of bone defects was shorter when differentiated osteoblasts were used, but MSCs proved to induce a similar pattern of bone remodeling, when compared with control.
Conclusion: Both MSCs and osteoblasts induce a more rapid and stable reconstruction of bone defects when implanted on biological scaffolds.

Session: Infectious Diseases

Novel drug targets for mycobacteria

ESC-ID: 502
Authors: Hasan Z, Parish T, Personne Y
Country: United Kingdom
University: Queen Mary's College, Department: Centre of immunlogy and infectious diseases

Backgound: Mycobacterium tuberculosis is one of the most hazardous infectious agents in the world and is responsible for the deaths of over one million people each year. With the outbreak of drug resistant strains of M. tuberculosis and lengthy and complicated treatment regimens there is a necessity to develop new drugs. Two component regulatory systems (2CR) are prokaryotic signal transduction systems which respond to environmental stimuli and induce changes in gene expression. SenX3-RegX3 is a key 2CR of M. tuberculosis which plays a role in virulence and responds to phosphate-limiting conditions. Furthermore, it has been reported that SenX3-RegX3 operon is essential in Mycobacterium smegmatis, a non-pathogenic model organism for M. tuberculosis. However, recently, mutant strains of M. smegmatis mc2155 were constructed with this apparently essential operon deleted from the chromsome (unpublished data). Whole genome sequencing of these deletion strains identified potential mutations which may compensate for the deletion. Aims: To verify the presence of mutations detected by whole genome sequencing in mutant strains of M. smegmatis and to determine if such mutants are affected under phosphate-limiting conditions.
Methodology: Loci identified by whole genome sequencing were amplified by PCR and sequenced in several strains. In addition, growth assays were performed to assess the ability of mutant strains to survive under phosphate-limiting conditions.
Results: Mutations were confirmed in three genes and a region upstream of the operon deletion. Furthermore, deletion strains showed signs of defective growth in phosphate limiting conditions.
Conclusion: One of the mutated genes encodes a hypothetical protein which shares a domain with a Zeta-toxin from a toxin-antitoxin (TA) system; the mutation confers a change in the amino acid sequence from glycine to valine. The change converts a „tiny-type" of amino acid to an „ampiphilic-type", which has the potential to affect the structure and function of the toxin. TA systems have been linked to a role in stress response and dormancy; this is of particular interest in M. tuberculosis which is a relatively slow-growing bacterium and has over 35 TA modules in its genome. Therefore, the TA module identifies itself as a target for a novel class of antimicrobials specific to mycobacteria which affects regulatory systems and inhibit stress response pathways. Thus a class of antimicrobials targeting TA modules would make mycobacteria more susceptible to environmental stresses such as phosphate limiting conditions consequently

affecting non-replicative dependent pathways unlike current therapies which target cell wall synthesis.

Results of early antiretroviral therapy and mortality among HIV-Infected persons

ESC-ID: 587
Authors: Krasnov M, Cherkasov A, Kojevnikova I, Velykodanov G
Country: Ukraine
University: Kharkov National Medical University, Department: Infectious Diseases

Background: In Eastern Europe countries with a high seroprevalence of human immunodeficiency virus type (HIV-1), HIV infection contributes relatively significantly mortality in despite of ART. We investigated antiretroviral-treatment strategies in different clinical groups HIV in dependence of early or late diagnosis and initiation of ART.
Methods: HIV-infected 18 to 62 years age with a CD4 lymphocyte percentage (the CD4 percentage) of 25% or more were randomly assigned to receive antiretroviral therapy (LPV/rtv or NEL or EFV + AZT and 3TC) when the CD4 percentage decreased to less than 10% or clinical criteria were met (the deferred antiretroviral-therapy group) or to immediate initiation of antiretroviral therapy in group with normal CD4 (>350 cell/mc) (the early antiretroviral-therapy groups).
Results: We found that over 65% patients were diagnosed in late stages (C2-C3) who received deferred antiretroviral therapy as compared with early antiretroviral therapy. The main reason of such condition that over 35% patients had been forced to come a doctor due to severe opportunistic infection and were firstly diagnosed as HIV-infected patients. Median follow-up of 48 weeks (interquartile range, 24 to 72), antiretroviral therapy was immediately initiated in 66% patients in dependence of clinical indications. 9.1% patients in the deferred-therapy group died versus 0.5% patients in the early-therapy groups (hazard ratio for death, 0.24; 95% confidence interval [CI], 0.11 to 0.51; P<0.001). In 26% patients in the deferred-therapy group versus 0.1 patients in the early-therapy groups, disease progressed to CDC stage C or severe stage B (hazard ratio for disease progression, 0.25; 95% CI, 0.15 to 0.41; P<0.001).
Conclusions: Early HIV diagnosis and early antiretroviral therapy reduced mortality over 70% and HIV progression above

Clinical cases of rabies. the re-emerging danger in a modern world

ESC-ID: 588
Authors: Wakabi K, Zaidan H, Krasnov M
Country: Ukraine
University: KNMU , Department: Infectious Diseases

Introduction: Boundless to borders, Rabies infects developed and undeveloped countries alike and since the beginning of times, Rabies has been a worldwide zoonosis. This piloted one of the biggest advances in medical history, developed by Pasteur in the 19th Century, the vaccine prevented Rabies after inoculation. Undomesticated dogs and canines such as foxes, wolves and coyotes serve as the most common reservoirs, however in other nations vectors vary from bats and cats to raccoons, skunks and cattle. Newly found sources of infection are laboratory aerosols and neurally derived tissues such as transplanted corneas and organs. In 2004, the New England Journal of Medicine documented the death of four recipients of organs from an otherwise healthy donor who died due to subarachnoid hemorrhage. Within 30 days of transplantation, all recipients died due to an unknown cause of encephalitis, characterized by a rapid neurologic deterioration. Hospital autopsies and laboratory findings proved presence of Rabies in all four recipients and later a history of a bat bite was revealed in the donor's anamnesis. Adding to the gravity of this rapacious disease is the lack of effective treatment-with regards to the few rare favourable outcomes-all registered cases end fatally.
Materials and methods: Four cases were extracted from hospital archives in Kharkiv, Ukraine. All patients were men aged between 33 and 57, each bitten by a different vector. Patient A (33), bitten by a fox in June 1990, displayed symptoms of visual and acoustic hallucinations and occurrence of seizures at eating or drinking. He was referred to the infectious department from the psychiatric ward due to preliminary diagnosis of encephalitis and psychosis. Cause of death was Pneumonia and cardiac arrest in October 1990. Patient B (43) bitten by a cat in November 1999, suffered fever, tachycardia and on examination the left angle of his mouth was lower than the right including ptosis of the eyelids, hydrophobia, ataxia and cerebellar disturbances also known as Landrii Syndrome. On the second day of disease the patient suffered from rapid ascending paralysis affecting the diaphragm causing respiratory arrest and death in February 2000. Patient C (34) also bitten by a fox in November 2005, was an alcohol abuser, displayed insomnia, agitation and severe aggression towards medical staff as well as expressed sexual hallucinations. Cause of death was cardiac and respiratory insufficiency in February 2005. As for Patient D (57), bitten by a dog in February 2010, displayed insomnia, fear, depression, behavioural disorders and alertness. Death was on the 4th day of disease in May 2010 due to abrupt cardiac and respiratory arrest. All patients displayed symptoms of Hydrophobia, markedly elevated blood pressure and an incubation period of approximately 3 months. The differences between clinical manifestations display the difficulty of pinpointing Rabies as it appears in typical and atypical forms.
Conclusion: To formulate a concrete diagnosis of Rabies, clinical manifestations are just as crucial as the patient's history and because of its dynamic nature, Rabies is continually baffling scientists in its diagnosis.

Radiation of light-emitting diode photon matrices in complex therapy of community - acquired pneumonia complicating influenza a (H1N1) California - 2009

ESC-ID: 678
Authors: AlAali A, Tooq S
Country: Bahrain
University: Kharkov National Medical University , Department: Medical

According to data from the European Respiratory Society, among patients with community-acquired pneumonia (CAP) that demands hospitalization; the lethality was

defined as 14 %. This was before the pandemic of influenza A (H1N1) California 2009. In cases of pneumonias complicating influenza A (H1N1) infection, it appears that efficiency of administration of antibiotics appears insufficient. Now it is objectively established, that light makes changes to almost all functions of the human body. Such radiation normalizes work of regulatory systems of the human body: immune, endocrine and central nervous. The modifying effect of photo-influence is established on process of structured lipopolysacharide, which opens prospect of the use of low-intensity laser radiation in complex treatment of patients with endo-toxicosis and septic shock. Purpose: Improving the outcomes of patients who have developed community acquired pneumonia in influenza, by use of monochromatic incoherent radiation combined with the visible infrared radiation in the treatment.

Materials and methods: Research was carried out in the Regional Infectious Hospital of Kharkov. This study included the supervision of over 87 patients with CAP of II and III groups of severity who are being treated in clinic during epidemic of influenza A (H1N1) in 2009-2010, these patients are the main group. Patients of comparison group (n=31) with pneumonia receiving augmentin in complex therapy. Influenza complicated by CAP, has been diagnosed in 83 patients of the basic group through clinical-epidemiological methods and in individual cases by PCR method according to criteria set forth by MOH of Ukraine Order No. 128. Among observable patients of the basic group, 40 were males and 47 females. The mean age is 40.29 ± 1.7 y.o. (M ± m). The diagnosis pneumonia has been confirmed in the basic group and comparison group clinically and with the help of chest X-ray examination. The criteria for exclusion from the study was the presence of concomitant diseases such as chronic obstructive pulmonary disease, chronic heart failure, chronic hepatitis or liver cirrhosis, disruption of intestinal absorption, diabetes mellitus, chronic renal insufficiency, cerebrovascular, mental illness, alcoholism, drug abuse, immunodeficiency states. All patients who received antibiotic therapy in most cases 3-5 day after normalization of temperature had photon emission matrices "Barva-Flex, applied to the rear surface of the thorax, which is in the spectrum of infrared light (940 nm) range. In all cases, the consent of patients to application of the specified procedure was requested. Course of treatment is daily procedures in continuous operating mode of radiator at an exposition 10 - 20 minutes for 5-14 days.

Results: The average bed-day in the main group was 19.4 ± 0.81(M ± m), in comparison group 22.5 ± 1.03. Day of illness at admission has been analyzed in 26 observable patients of the main group - 5.22 ± 0.62 (M ± m), maximum - 15 days, minimum - 2 days. Procedures were tolerated well and provided appreciable improvement of the general condition (according to doctors and patients). There were no complications during phototherapy. It was a positive effect of phototherapy on the dynamics of the main clinical manifestations of pneumonia.

Conclusions: Application of photon emission matrices which have spectrum range of infrared light (940 nm) range, in patients with the pneumonias of II and III group of severity that complicating influenza A(H1N1), essentially reduces duration of hospitalization and positively influences on dynamics of the basic clinical manifestations of pneumonia.

Influenza A (H1N1) California - 2009, community acquired pneumonia and acute respiratory distress syndrome: analysis clinical and morphological research

ESC-ID: 681
Authors: Abdulrasool M, Radhi M, Gradil G
Country: Bahrain
University: Kharkiv National medical university , Department: Medical

Viruses - perfect biological machines which have fine genetic memory and ability to self-development. According to chairman WHO, influenza A(H1N1) California - 2009 was distributed more than in 200 countries where it has been registered almost 12000 fatal cases confirmed laboratory (from them in Europe - 4073), but it is necessary two years to establish real quantity died. The greatest quantity of patients was observed in age group 18-64 years. It was estimated that, late visit of patient for help - after 4-5 days of onset illness is results in irreversible changes in lung. Purpose of this study is to define clinical picture, outcomes and morphological researches in patients with severe viral-bacterial pneumonia due to influenza A(H1N1).

Materials and methods: In regional clinical infectious to hospital of Kharkov 30 patients, all on the Kharkov area - 65 have died. At the analysis of a clinical course and reports 30 middle-aged patients 42,3±1,73 y.o. (M±m), the diagnosis influenza A (H1N1) has been confirmed with help PCR at 16 patients, bilateral subtotal pneumonia is revealed at 30. Edema lung was find at 14 patients (46,6 %), edema of brain - at 14, adiposity - in 19 (63,3 %). We bring, in our opinion, typical clinical supervision. Patient F., 38 years, the diagnosis influenza A (H1N1) was confirmed with help PCR, pharyngotracheobronchitis, bilateral CAP. There was not pneumonic infiltration at hospitalization for 3 day of illness on the roentgenogram in lung. In 2 days respiratory insufficiency has promptly increased, he was transferred in ward of intensive therapy, chest x-ray findings shown bilateral subtotal pneumonia on background of antibacterial therapy. The patient for 7 day of illness has died.

Results: Morphological changes were investigated. Lung tissue and those of other organs were used to make 5-20mcm thick sections after paraffin embedding. Stains used in histological examination are: hernatoxylin and eosin, Romanovsky-Giemsa, Sheik and Cheil, Van-Gieson and Anderson. Histopathological exam - at research of tissue lung typical picture ARDS is revealed, capillaries are densely filled erythrocytes, infiltration mostly contain cells with round core, not neutrophilous.

Conclusions: At patients who have died, it was observed extremely current of clinical picture of pneumonia with fast development respiratory insufficiency, massive defeat parenchyma of lung. In most cases at patients of this group precise negative dynamics of symptoms on background of antibacterial therapy was observed at an estimation of its efficiency in 24 and 72 hours. Studying of histopathological changes specifies dominating damage endothelium of vessels and epithelium of alveoluses, filling cavities of alveolus of exudate with filament of fibrin and occurrence hyaline membranes in lung tissue was observed.

Clinical characteristics and flow of treatment in the group of patients with infections of the skin and soft tissue (erysipelas and cellulitis)

ESC-ID: 772
Authors: Nikolic Z, Perisic M, Colic
Country: Serbia
University: University of Belgrade , Department: Faculty of Medicine

Introduction: Erysipelas and cellulitis are bacterial infections of the skin and soft tissue which are characterized by pain, erythema, swelling and redness, the presence of infectious syndrome.
The aim: Showing sex and aged distribution of affected patients, factors of disposition, clinical symptoms and signs and laboratory findings, the flow of treatment, applied therapy and their influence on treatment outcome.
Material and methods: The total of 15 patients with infections, from department for clinical pharmacotherapy, Institute for Infective and Tropical diseases Clinical Centre of Serbia, in the period 2004-2009, was completely clinically examined.
Results: Most patients were between 50 - 75 years (67%). The most common factor of disposition was injury of lower limb. The majority of patients occurred because of fever, shivers, weakness, and changes on the skin followed by redness, swelling and pain. Laboratory parameters are nonspecific. The most frequent localization of infection was on the leg. Drugs of choice in most cases are clindamycin and ciprofloxacin with local application of 3% boric acid. From the beginning the therapy was applied as combined. The average therapy duration in these patients was 19 days. All patients were discharged from the hospital with cured local findings.
Conclusions: Erysipelas and cellulitis are infections which require detailed studying of factors of disposition, clinical symptoms and signs, especially changes on the skin. Following the evolution of skin changes after initiation of therapy, the based therapy should be modified or not.their progress is prolonged. These infections are successfully treated, but because of the slow regression of change, caused by factors present disposition, their progress is prolonged.

Possibility of immunological reconstitution in HIV+ patients who develop virological-immunological dissociation while receiving HAART.

ESC-ID: 811
Authors: Kusic J, Jevtovic DJ
Country: Serbia
University: University in Belgrade, School of Medicine , Department: Infectious Diseases

Introduction: AIDS (acquired immune deficiency syndrome) is a final stage of an HIV (human immunodeficiency virus) infection. Current treatment for HIV infection consists of highly active antiretroviral therapy, HAART. HAART involves a combination of at least 3 antiretroviral drugs, blocking the replication of the virus. Due to the therapy, life expectancy and quality of life are prolonged among people who suffer from this incurable disease. Optimal response to the therapy is considered to be reaching undetectable plasma viral loads and to maintain high immune response.While HAART allows reaching undetectable plasma viral loads, discrepant responses such as failure to achieve a significant increase in circulating CD4+ T cells may occur. It is so called virological-immunological dissociation.
The aim: We conducted this study to evaluate if immunological reconstitution is possible in the patients with virological-immunological dissociation, and what clinical and laboratory factors influence that.
Material and methods: A retrospective study of 138 patients initiated on HAART between 1998-2008 at the HIV/AIDS Centre at the Institute for Infectious and Tropical Diseases in Belgrade was conducted.
Results: Reconstitution in immune response was recorded among 36,2% of patients. Patients with this type of virological-immunological dissociation with CD4 + T cells count >200/μL while receiving HAART had 7 times better chances of achieving optimal immunological response, comparing to others with peripheral CD4 + T cells count < 200/μL. HAART regimens had no influence on immunological response. Statistically important was regimen consisting of combination of all three types of drugs.
Conclusion: Patients with virological-immunological dissociation who achieve cell count above 200/μL while treated with HAART, have better chances in reconstitution of immunological response during next period of treatment. Otherwise, patients who didn't achieve peripheral CD4 T cell count level >200/μL, have no further chance to achieve it, regardless to therapeutic changes.

Indicators of lipid metabolism and their prognostic importance in patients suffering from acute viral hepatitis B and its relapses

ESC-ID: 887
Authors: Patyey P, Vinokurova O
Country: Ukraine
University: Kharkiv National Medical University , Department: Infectious diseases

To begin with, if speaking of the importance of our research, hepatitis B virus (HBV) infection is a global public health problem. It is estimated that there are more than 350 million HBV carriers in the world, of whom roughly one million die annually from HBV-related liver disease. And taking into consideration the importance of this question and the presence of an investigation field, we have decided to study the indicators of lipid metabolism in patients with HB and its relapses to get an opportunity to prevent the development of chronic hepatitis with such complications, as cirrhosis and primary liver cancer, or at least to forecast it. To reach this goal we have set such tasks: -To conduct the complex estimation of indicators of lipid metabolism among the patients with acute viral hepatitis B. -To find out the correlative relationships between these indicators, clinical syndromes and the main typical syndromes of viral hepatitis B and their intercoupling in the dynamics of the disease. -To define the possibility of usage of eicosanoids, saturated and unsaturated fat acids as additional prognostic criteria of toughness of the disease. -To investigate the activity of prostaglandines, the type of free fat acids pro-

file in patients with viral hepatitis relapses and their prognostic value Materials We have observed 182 patients in the age of 15-62 years. The average age was 21-35. To proceed the research itself, we have chosen such methods: immunoferment analysis & polymerase chain reaction (for diagnosis verification), gaschronografical method (for fat acids (FA) and prostaglandines (Pg) profile definition), cholesterine, p-lipoproteids, common lipids standart determinatin methods, statistical analysis (t Student, Pirsons factor, claster analysis). A complex research of lipid metabolism indicators in patients with HBV has shown an increase of threeglicerides, common lipids, cholesterine, β-lipoproteins, non-esterificated fat acids, PGF1, TxB2, PgE1 etc and decrease of saturated and polienic fat acids.
Results: At the peak of HB we detected a decrease in polynonsaturated FA content for the account of arachidonic, linoleie, eukosatrienic and an increase in monoenic FA content in blood serum: oleinic, heptadecanolic and saturated FA for the account of decanoic, heptadecanoic acids. The level of these indicators can be a disease severity criteria. The research indicated an increase in Pg content: PgFlα, TxB2 ($p \leq 0,05$), PgI2, PgEl, PgF2α that testifies to activation of cyclooxygenase transformation of arachidonic acid. Ratio decrease of 6-Keto-PgFlα/TxB2 to 2,17 is fixed that confirms incompleteness of pathological process in liver parenchyma. It can be a pathological process activity criteria. During the relapse we noted a decrease in the content of the decanoic, heptadecanoic, oleinic, linoleie, eukosatrienic FA and Pg: Flα, El, I2. In comparison to control group the content of TxB2, PgFlα, PgE2 was raised. During the relapse of the disease a decrease in content of PgEl along with an increase in PgE2 was observed. It can help to forecast the HB relapse.
Conclusions: The investigation indicated the next criteria of disease severity: the blood serum content of -oleinic acid from 14,96mkg/ml to 20,46mkg/ml corresponds to mild severity, ≥23,46mkg/ml - medium severity; - eukosatrienic acid from 2,70mkg/ml to 1,23mkg/ml - mild severity, ≤1,23mkg/ml - medium severity; -PgE1 from 17,86pg/mt to 48,27pg/ml - mild severity, more than 48,27pg/mt - medium severity. It is recommended to consider the authentic decrease in blood serum of decanoic, heptadecanoic, oleinic, linoleie, eukosatrienic acids, PgF1α, Pgl2 and an increase in the level of PgE2 at the background of a decrease in PgE1 content, as indicators which testify to possibility of HB relapse.

Potential role of CD133/CD117 positive stem cells in liver fibrosis caused by schistosoma mansoni infections

ESC-ID: 1057
Authors: Verhoeven S, Draelants C, Chatterjee S, Van Marck E, Pauwels P, Ponsaerts P
Country: Belgium
University: University of Antwerp , Department: Faculty of Medicine

Introduction: Schistosoma mansoni infections in rodents generate liver pathology in the form of fibrosis that is dependent on the genetic background of the mice strain. Chronic inflammation is associated with angiogenesis, whereby circulating endothelial progenitor cells play an important role. Such cells originating from the bone marrow can be distinguished into two major groups based on the stem cell markers CD133/prominin and CD117/c-kit. Partial hepatectomy leads to the mobilization of a unique population of progenitor cells with the potential to differentiate into hepatocytes in vitro and a probable role in liver regeneration. An important part of such stem cells are CD133 positive. Stem cell factor (SCF) and its receptor c-kit also play an important role in liver regeneration after almost 70% hepatectomy. There is however little known about the roles of CD133 and CD117 positive stem cells during S. mansoni induced liver fibrosis.
Methods and material: Using immunohistochemical techniques the expression of these stem cell markers were studied. Frozen sections from kidney and liver of infected mice strains were screened at acute (8 weeks) and chronic (16 weeks) stages of pathology. This experiment was repeated on steatotic liver.
Results: Varying levels of expression were noted in kidney and liver. CD133 and CD117 reactivity was mainly found in and around the granuloma. The CD133 expression was more pronounced in the C3H mice strain, in comparison with the C57BL6 mice strain where less CD133 reactivity was found. Outbred mice strains showed medium positivity in the granuloma. CD133 positive cells were found scattered in steatotic liver since this pathology manifests itself all over the liver.
Conclusions: These observations confirm the hypothesis that CD133 and CD117 positive cells play an important role in regeneration and angiogenesis after liver injury caused by S. mansoni infection. When the host immune system is incapable to make a balanced Th1/Th2 reaction to the parasite - as in C3H mice strains who develop high pathology due to strong Th2 responses - administration of CD133+/CD117+ cells in vivo could counteract fibrosis and induce regeneration. Further research is ongoing to detect the exact cell type of these CD133 en CD117 positive cells.

The assessment histological lesions in liver by FIBROACTI TESTS in patients with Chronic Hepatitis C genotypes 1b with normal or abnormal ALT

ESC-ID: 1138
Authors: Koltsova L, Bondar A
Country: Ukraine
University: Kharkov National Medical University , Department: Infectious Diseases

Introduction: The treatment of Chronic Hepatitis C (CHC) is directed to removal HCV, inhibition progress of disease, preventing cirrhosis and liver's cancer. The effect of antiviral therapy in patients with CHC infected with genotype 1b and with normal or abnormal alanine aminotranspherase (ALT) is compose 47-52%. According to AASLD recommendation all persons with CHC (1b genotype) and with normal or abnormal ALT should be undergo liver biopsy for assess the grade and stage disease and determination the indications to interferon-based therapy. In situation where degree of fibrosis and inflammation are minimal antiviral therapy cannot be given and these patients should be monitored. Our aim was to assess the histological lesions in liver by FIBROACTI TESTS in

patients with CHC genotypes 1b with normal or abnormal ALT and define the therapy for these patients. Materials and methods. The research was done on base of Infections Disease Department in Kharkov National Medical University. The group of patients was connected from 10 men and 7 women in age 43 ± 3.1 years with CHC genotypes 1b and with normal or abnormal ALT. The histological lesions in liver were assessed by FIBROACTI TESTS according to METAVIR scale.

Results: 1) 29% of patients had activity A0, 18% of patients A0-A1, 6% - A1, 12% - A2, 35% - A3. 2) 29% of patients had stage of fibrosis F0, 18% - F0-F1, 5% - F1, 18% - F1-F2, 6% - F2, 6% - F3, 18% - F4.

Conclusions: FIBROACTI TESTS are helpful for grading the severity of disease and staging the degree of fibrosis and inflammation in liver. Patients with CHC genotypes 1b with normal or abnormal ALT have different histological lesions (activity A0-A3, fibrosis F0-F4).

The association of hypertension and chlamydia pneumoniae, helicobacter pylori, cytomegalovirus and herpes simplex virus type 1: The Persian Gulf Healthy Heart Study

ESC-ID: 1147
Authors: Bolkheir A, Nabipour I, Vahdat K
Country: Iran
University: Shiraz University of Medical Sciences ,
Department: Depatment of Cardiovascular desease

Introduction: Animal/experimental, pathological, and cross-sectional seroepidemiological studies conducted among middle-aged populations provide some support for the hypothesis that infections with herpes simplex virus type 1 (HSV-1), cytomegalovirus (CMV), Helicobacter pylori, and Chlamydia pneumoniae are associated with the development of atherosclerosis and coronary heart disease. The impact of viral and bacterial infectious burden (defined as the number of seropositivity to infectious pathogen to which an individual has been exposed) on long-term prognosis in patients with coronary artery disease and essential hypertension had been shown. Infectious agents can contribute to the acceleration of atherosclerosis development by nonspecific mechanisms, such as hypercoagulation, increased production of adhesion molecules, and elevated C-reactive protein (CRP) levels. Given both the high prevalence of IgG antibodies to herpes simplex virus type 1 (HSV-1), cytomegalovirus (CMV), Helicobacter pylori and Chlamydia pneumoniae and the high prevalence of hypertension among adults, it is particularly important to determine whether serological evidence of prior infection with these agents is associated with hypertension. We examined this question in an ancillary study to the Persian Gulf Healthy Heart Study, a cohort study of men and women aged >=25 years.

Materials and Methods: We conducted the present study as part of the Persian Gulf Healthy Heart Study, which was a prospective population-based cohort study based on men and women subjects aged >=25 years, started in 2003-04. The Persian Gulf Healthy Heart Study was designed to determine the risk factors for cardiovascular diseases among the northern Persian Gulf population (Bushehr and Hormozghan Provinces) and to develop community-based interventional projects to change the lifestyles of the population and to present the rising threat of cardiovascular diseases in the region. The design of this study encompasses two major components: phase I is a cross-sectional prevalence study of unhealthy lifestyle and ischemic heart disease and associated risk factors, and phase II is a multiple interventional project for reduction of cardiovascular diseases in the region. In an ancillary study to the Persian Gulf Healthy Heart Study, a total of 1754 (49.2% males, 50.8% females) subjects were selected through a stratified multistage design from major ports of Bushehr Province (an Iranian province with the greatest boarder with the Persian Gulf). A fasting blood sample was taken, all samples were promptly centrifuged, separated and analyses were carried out at the Persian Gulf Health Research Center on the day of blood collection using a Selectra 2 autoanalyzer. Sera were analyzed for IgG antibodies to Chlamydia pneumoniae, Herpes simplex virus type 1, Helicobacter pylori and cytomegalovirus using ELISA. Hypertension was defined according to WHO criteria. Multiple logistic regression analysis was used to ascertain the associations between hypertension and viral or bacterial pathogens. Sex, age, smoking, physical inactivity, hypercholesterolemia, type 2 diabetes, obesity and seropositivities of Chlamydia pneumoniae, Herpes simplex virus type 1, Helicobacter pylori and cytomegalovirus were considered as covariates, and hypertension also as the dependent variable in multiple models.

Results: We have presently analyzed a total of 1754 (49.2% males, 50.8% females) subjects for the association of hypertension and infectious burden. A total of 459 (26.3%) of the subjects (30.8% of males & 21.8% of females; p<0.0001) had hypertension. The prevalence of IgG antibodies against CMV, Chlamydia pneumoniae and H. pylori were higher in subjects with hypertension than healthy persons . The prevalence of the number of pathogens (0-1, 2, 3, and 4) was 6.3, 26.3, 42.9 and 23.9 percent, respectively. There was an increased trend of prevalence of the metabolic syndrome with increasing number of pathogens (4.1 %, 20.6%, 43.2% and 32.1% for 1, 2, 3, and 4 pathogens, respectively; p for trend <0.0001). In multiple logistic regression models with hypertension as the dependent variable, and cardiovascular risk factors as independent variables, CMV [OR=1.87 (1.10-3.18), P=0.019], Chlamydia pneumonia [OR=1.56 (1.24-1.95), P<0.0001], and H. pylori [OR=1.55 (1.22-1.97), P <0.0001] showed significant associations with hypertension. But we didn't observe any correlation with hypertension and herpes simplex virus type 1[OR = 1.03(0.73-1.46),P = 0.826].

Conclusions: In conclusion, in a large representative sample of Iranian population, we showed a strong association between seropositivities of common viral (cytomegalovirus) and bacterial pathogens (Chlamydia pneumoniae, Helicobacter pylori) that had been previously associated with human coronary as well as carotid atherosclerosis and hypertension, independent to cardiovascular risk factors. There was an increased trend of prevalence of hypertension with increasing number of pathogens (burden of infection). Discussion According to a unifying hypothesis, chronic infections with viral and bacterial pathogens induce production of proinflammatory cytokines, such as TNF-alpha and IL-6 which are leading to chronic subclinical inflammation, atherosclerosis and hypertension. Future prospective Strong association of chronic infections and hypertension, independently to

cardiovascular risk factors, promises to be exciting and groundbreaking. The effective administration of anti-infective agents, in the treatment of chronic infections is only the beginning of a new approach in the management of hypertension

Session: Infectious Diseases – Poster

Seroepidemiological study on Canine Visceral Leishmaniasis and determination of parasite in Yasuj district, south of Iran during 2009-2010

ESC-ID: 658
Authors: Barati V, Moshfe A , Mohebali M, Afshoon E, Abidi H, Joukar S, Zarei Z, Akhoundi B
Country: Iran
University: Yasuj University of Medical Sciences , Department: Student Research Committee

Background: This study aimed to determine the seroprevalence of canine visceral leishmaniasis in Yasuj district for identification the disease endemicity and recognition of genus and spicies of infectious agent.
Methods: A seroepidemiological study to determine seroprevalence of canine visceral leishmaniasis (CVL) among ownership dogs using direct agglutination tests (DAT) in 23 villages of Yasuj district, south of Iran was carried out from August 2009 to February 2010. One hundred and fifty five(155) ownership dogs were selected by multi-stage cluster sampling. Chi-square and Fisher exact tests were used to compare seroprevalence values relative to gender, age and clinical signs. Genus and spicies of parasite determined by PCR after necropsy of 2 infected dogs.
Results: Of the 155 serum samples tested by DAT, 14.19 % were positive and 10.32% had titer 1:320 and higher. From 22 seropositive dogs, 6 dogs(27.3%) had the most titer (1:20480). No statistical significant difference was found between male (14.4%) and female (13.6%) seroprevalence (P=0.562). Only 27.2% of the seropositive dogs had clinical signs and symptoms. All isolated parasites from infected dogs were Leishmania infantum by using of PCR methods.
Conclusion: According to the results, it seems, Yasuj district is an endemic focus of canine visceral leishmaniasis in Iran. The majority of seropositive dogs (72.7%) lived in Yasuj district were asymptomatic. It seems that all symptomatic and asymptomatic infected dogs are the most important risk factors for human infection in VL endemic areas.

Risk factors for extensively drug-resistant tuberculosis: a systematic review

ESC-ID: 785
Authors: Lima BF, Tavares M, Barros H
Country: Portugal
University: Porto , Department: Infectious diseases

Background: Extensively drug-resistant tuberculosis (XDR-TB) is emerging as a global public health problem. The current definition of XDR-TB (October 2006, WHO) implies resistance to isoniazid and rifampicin, to a fluroquinolone and to a second-line injectable agent. Its treatment is more expensive and difficult than multi drug resistant tuberculosis (MDR-TB) and the outcomes much severe. Thus, the identification of risk factors for XDR-TB is of paramount importance to design effective TB control strategies. Objective: Systematic review of published English language articles on risk factors for XDR-TB.
Methods: Pubmed and Cochrane Library were searched using the terms „tuberculosis“, „XDR-TB“ and „extensively drug-resistant tuberculosis“ and review articles references manually screened. We identified 192 articles, 151 were excluded by the abstract. The remaining 41 articles were retrieved for full text detailed evaluation by two authors and 12 relevant articles were selected for final review. The criteria for inclusion was the 2006 XDR-TB case definition.
Results: Some risk factors were consistently present, mainly previous TB treatment and length of treatment. Other conditions often associated were imprisonment, immigration, alcohol and HIV co-infection. Pre-XDR-TB points to an increased risk of XDR-TB but needs further assessment. The described quantitative risk for many of these factors is probably underestimated due to several limitations of individual studies namely: concerns with prompt diagnosis, laboratory quality-control for the testing of all first- and second-line drugs resistance, data collection on patient characteristics, and a general absence of standard procedures.
Conclusion: The information regarding determinants of XDR-TB is scarce. However, regardless of the country surveyed, special emphasis should be given to minimize the risks of TB re-treatment to prevent the emergence of highly resistant TB.

Resistance to penicillin of streptococcus pneumoniae and its influence to the treatment, course and outcome of the purulent meningitis

ESC-ID: 804
Authors: Dumic I, Dulovic O
Country: Serbia
University: School of Medicine, University of Belgrade , Department: Infectious diseases

Introduction: Pneumococcal meningitis is the most frequent meningitis among adults.The Infection is followed by serious clinical picture and a lot of complications. Appearance of penicillin resistante Streptococcus pneumoniae complicates treatment of meningitis and affects choice of antibiotics and the course of disease.
Aim: To fortify frequency of pneumococcal resistance to penicillin and third generation cephalosporins in five-year period (2004 -2009) , compare resistance with previous period (1995-2003).To fortify course of disease, treatment and outcome in these patients.
Material and methods: We did a retrospective study and used history of 51 patients who were treated at Institute for infectious and tropical disease Kosta Todorovic in Belgrade during five-year period(2004-2009). We analyzed susceptibility to Streptococcus pneumoniae from cerebrospinal liquid by agar-dilution method. In peni-

cillin resistant strains of Streptococcus pneumoniae we estimated minimal inhibitory concentration (MIK) at the Institute for immunology and virology „Torlak". The same procedure was used for third generation cephalosporins and vancomicin. These drugs were used for treatment of our patients.
Results: Patients with meningitis caused by penicillin susceptible pneumococci were 22 (43.14%) and patients in whose disease was caused by penicillin resistant pneumoccoci were 29 (56.86%). Susceptible to third generation cephalosporins were 42(82.35%) and 9 (17.65%) were resistant. Average time of treatment in PNSP group was 23.5 and 22.8 in PSSP group.Recovery was achieved in 77.27% patients in PNSP group and 51.72% patients in PSSP group.
Conclusion: There was no significant increase in penicillin resistance during five-year period compare with previous period ($p>0.05$).We did not find significant difference in disease outcome in PNSP and PSSP groups.There was no significant difference in lethality between this two groups, but we found significant difference in susceptibility to ceftriaxon in last five-year period compare with previous period ($p<0.05$).Because of increasing number of penicillin resistant strains of Streptococcus pneumoniae and appearance of resistance to third generation cefalosporins initial therapy should begin with cephalosporins and vancomicin as we did in our patients.

Influence of bifiform on microflora of the large intestinal cavity in patients with lacunar tonsillitis.

ESC-ID: 846
Authors: Marusyk H, Moskaliuk V, Sorokhan V, Jakovets K
Country: Ukraine
University: Bukovinian State Medical University , Department: Infectious Diseases and Epidemiology

Introduction: The normal microflora is considered as both high-quality and quantitative relations of population of different microorganisms of the some opened cavities, which supports the biochemical, metabolic, immunological equilibrium of human organism, that it is necessary for the keeping of human health. Formation and illness course of lacunar tonsillitis accompanied by disbacteriosis of I-III degree, which requires the conduction of medical treatment, directed on decontamination of pathogenic and conditional pathogenic microorganisms, and also on a correction both specific and populational level of microbiota of the large intestinal cavity. Research purpose: To learn influence of bifiform on specific composition and populational level of microflora of content of the large intestinal cavity of patients with lacunar tonsillitis.
Material and methods: Research of content of the large intestinal cavity was conducted on patients before treatment and after complex therapy with probiotics. Bifiform was added to the complex treatment of patients with lacunar tonsillitis because the changes of the state of microflora of the examined patients at the time of admission was, mainly, due to the deficit of bifidobacteriae and enterococcuses which enter in the complement of this probiotics.
Results and Conclusions: For patients with lacunar tonsillitis at the time of admission substantial changes of specific composition and populational level of anaerobic and aerobic obligative and facultative microflora of content of the large intestinal cavity develop due to elimination and expressed deficit of autochthonous life-useful bacteriae and contamination of the large intestinal cavity and growth of populational level of anaerobic and aerobic conditional pathogenic and pathogenic microorganisms. The use of bifiform in the complex treatment of patients with lacunar tonsillitis results in proceeding in composition of autochthonous obligative bacteriae - bifidobacteriae, lactobacteriae, bacteroids, enterococcuses, unpathogenic collibacilluses, growth of populational level physiological useful bifidobacteriae, lactobacteriae, decline of amount of clostridiums, proteuses, hemolytical E. coli and decontaminations of content of the large intestinal cavity with citrobacters, serratiae. Bifiform treatment does not have any influence in relation to yeast-like Candida.

Some clinical, epidemiological and laboratory aspects in patients with botulism after 40 years in Moldova

ESC-ID: 896
Authors: Ciudin T, Ciudin V
Country: Moldova
University: State Medical and Pharmaceutical University „N. Testemitanu", Department: medicina

The tests had been subjected to 54 sheets of comments from people older than 40 years. And mild evolution was determined at 46 (85.2%) persons, and death occurred in two of eight people with serious form. The diagnosis of botulism was confirmed by botulotoxinei detect more than half of patients. More often botulotoxina B was determined separately or in combination with other serotypes. Developing botulism was often related to food consumption of meat products prepared in domestic conditions, rarely - with mushrooms and fish, affecting men preponderant.
Materials and methods: Leaves were examined 54 observations of patients with botulism after the age of 40 years. It was used clinical, historical, epidemiological, laboratory, and appropriate treatment is applied.
Results and discussion: Analysis were subjected to 54 sheets of observation of patients with botulism after 40 years of age. Among them were 35 years of 41-50 (64.8%) of 51-60 years - 9 (16.7%) of 61-70 years - eight (14.8%) of 71-80 years - 2 (3.7%). The masculine gender was 34 (63%) patients, the woman's - 20 (37%). 26 were from urban (48.1%) patients, rural - 28 (51.9%). 24 (44.4%) patients developed botulism group and 30 (55.6%) - sporadically. Foods that have facilitated the development of botulism patients are monitored various. It is noted that botulism developed more frequently in relation to food consumption of meat products (70.4%), rarely by mushrooms (16.7%), fish (11.1%) and vegetables (1.8 %) preserved in the household. Primary diagnosis of botulism was suspected at the behest of the hospital by family doctors in 34 (63%) patients. At others were suspected: food poisoning (13%), gastroenteritis or gastroenterocolite (7.4%), mushroom poisoning (1.8%), other diseases (meningitis, the viral infection, acute abdomen, encephalopathy) - 1,8%. Without diagnosis were advised (7.4%) patients. The inpatient wards for infectious diseases in diagnosis of botulism was estab-

lished in 49 (90.7%) people, but 5 (9.3%) patients - the diagnosis was wrong . botulism incubation period lasted up to 24 hours in 26 (48.2%) patients, between 25-48 hours - 18 (33.3%), 49-72 hours - from 9 (16.7%) and 73-120 hours - 1 (1.8%). Were addressed and were hospitalized on day 2 of botulism only two (3.7%) patients in the three days - 15 (27.8%) in the 4-5 days - 13 (24.1 %) in the 6-7 day - 5 (9.3%) in the 8 to 10 days - seven (12.9%) after 10 days of - 12 (22.2%) patients. Thus the first three days of botulism were sent to only 17 doctors (31.5%) patients and 5 days later - 24 (44.4%). Milder form of botulism stated in 10 (18.5 %) patients, the average - 36 (66,7%) and serious - 8 (14.8%). Of those eight patients with severe forms of botulism two died. Gastrointestinal syndrome was characterized by dry mouth mucosa in 53 (98.1%) patients, loss of appetite - 52 (96.3%), nausea - 53 (98, 1%), thirst, pain in epigastrium at how many 51 (94.4%) and vomiting and fluid seat 37 (68.5%) patients. Complications were found in 13 (24%) patients of botulism, including more frequent myocarditis was diagnosed in 4 (7.4%), more rarely, pneumonia, pyelonephritis, bulbar syndrome. Lung and brain edema with fatal end was detected in 2 (3.7%) patients. Concomitant diseases were diagnosed in 13 (24%) patients with botulism, including most frequently (5 patients) was specified viral hepatitis C chronic. Pelonephritis and pneumonia was detected in two patients each, and candida, asthma, chronic alcoholism and follicular angina - on each one. Eritropenia in peripheral blood was present in 17 (31.5%) of patients, leukopenia - 21 (38.9%), neutrophilia - 30 (55.5%), neutrophils deviation to the left - in 45 (83.3%). The diagnosis of botulism was confirmed by detection of botulinum toxin in 28 (51.9%) of all those examined by neutralization of botulotoxinei of which was determined separately botulotoxina B only 10 (35.7%) patients older than 40 years. The ill treatment solutions were applied dezintoxicante, desensitizing preparations, antibiotics (orally or intramuscularly levomicitina), vitamins, remedies and other preparations symptomatic heart. Hormone therapy was performed only in one patient. Antibotulinic serum treatment was performed in 38 (70.4%) patients. An initial dose of saline was administered to 14 patients, two doses - 16, three doses - at seven, four doses - in a patient. Treatment to cure were taken from one to 12 doses. Average of botulism patients in treatment were 21.7 days.

Conclusion: 1. Botulism has developed more frequently in connection with the consumption of meat food products less frequently - from canned mushrooms or cooked fish or in household conditions. 2.Disease evolved more frequently in mild and medium. Evolution of botulism in patients investigated was typical dyspeptic syndrome, oftalmoplegic for intoxication and neurological are present almost all patients. Rarely have detected changes in the cardiovascular and respiratory system. 3. Diagnostic errors committed at the behest and patients with botulism hospitalized late favored internment in touch with what the two people with severe death occurred. 4.Diagnosticul of botulism confirmed by determining botulotoxinei B took place at about half the patients. In other patients the diagnosis was confirmed based on clinical data, history of disease and epidemiological data.

Conservative treatment of spinal infections - Progress and results

ESC-ID: 897
Authors: Sipovac D, Subic M, Vlajankov A, Sevic S
Country: Serbia
University: University of Novi Sad , Medical Faculty , Department: Medicine

Aim: To determine the most frequent subjective symptoms and discomfort in patients, clinical and neurological findings, basic laboratory characteristics, length of illness, localization of the inflammatory process and etiological causes. One of the goals was to point the place and importance of imaging methods in diagnostics treatment, the combination of antibiotics used, the length of time needed for the treatment, the result and sequelae.

Material and methods: In a retrospective study 33 patients with diagnosed spondylodiscitis were observed. Demographic characteristics in patients as well as clinical and laboratory indicators of inflammation were observed. The study showed predisposed factors and also up to what percent certain parts of spine were affected and appropriate diagnostic methods. Antibiotics combined in the treatment of patients were also evaluated.

Results: Illness was present in most cases in males, aged 31 - 65. Sedimentation was elevated in 93.94% of patients, 33.3% had elevated fibrinogen, 72.73% elevated C - reactive protein, 42.4% lymphocytosis, 9.09% neutrophilia and 27.27% alpha 2 globulinemia. The most frequent predisposed factors were operations with 24.24%. Inflammation was in most cases present in lumbal area (51.51%). MRI was used for diagnosis in 78.79% of cases.

Conclusion: Spondylodiscitis is found mostly in work age males. The illness more frequently affects lower segments of spine while subjective symptoms and medical findings are nonspecific. In most cases the etiology of the illness was not determined. Conservative antimicrobial therapy of wide spectrum proved to be efficient in most patients. MRI is the most populat method when it comes to diagnosing spondylodiscitis.

Study of bacterial infection of hydatid cysts in slaughtered animals of west of Iran, Hamadan, and, bacterial exotoxin effect on cyst sterilization in vitro

ESC-ID: 964
Authors: Fallah N, Fallah M, Kavand A, Yousefi Mashouf R
Country: Iran
University: Hamadan University of Medical Sciences , Department: Parasitology and Mycology

Objective: Hydatid cyst, is an infection caused by E. granulusus and often localized in viscera of animals and man. Hydatid cyst typically filled with a clear fluid (hydatid fluid), that is sterile bacteriologically Bacterial infection of hydatid fluid is sometimes present, and this leading to sterilize the cyst. There are few studies on the bacterial infections of hydatid cysts in animals and man, and the type of infecting bacteria as well. The aim of this study was determining the bacterial infection rate of animal's hydatid cyst in Hamadan and identification of bac-

terium. Moreover, another objective of this study was testing the isolated bacterium effect on the viable protoscoleces, in vitro.
Materials and Methods: A total of 2859 livestock (481 cattle, 2127 sheep and 251 goats) in Hamadan from daily slaughters were inspected for the presence of hydatid cysts. Lungs and livers from each animal were collected at slaughter, individually identified, and maintained until cyst analysis was performed within the next 3 hours. All cysts that were found on parallel 1-cm slices through the parenchyma of the lungs and liver were examined. Location, cyst number, size, type, fertility and bacterial infection were recorded. The hydatid fluid of all collected cysts cultured for isolation and identification of bacterium. The effect of isolated and cultured bacterium tested on the viable protoscoleces in the culture tubes in vitro. The culture tubes observed and examined under a light microscope every 2 hours for 24 hours and, then until 36 and 48 hours.
Results: Hydatid cysts were found in the 6.5% of animals (8.7% in cattle, 6.6% in sheep, and 1.2% in goats). Localization of cysts was in lung 42.34%, liver 46.93%, and both liver and lung 10.7%. Totall, 59% of animals had single cyst, 11.9% had two cysts, and 29.1% were polycystic. Only 20% of cysts were fertile and rest was infertile. Fertility of cysts in different animals were 21.4% in sheep, 16.6% in cattle, and 0% in goats. Infected cysts were found in 74% of animals in Hamadan (46% were calcified and from 52% bacterium isolated). Isolated bacteria in infected cysts were as following: Escherichia coli, Klebsiella, Proteus, Enterobacter, Staphylococci hemolytic and non hemolytic, Pseudomonas and Edwardsiella. The most common bacteria in Hamadan were E. coli (23.94%) and Klebsiella (22.5%). The most common isolated bacteria in liver in Hamadan were Staphylococci non hemolytic. Sixty three percent isolated bacteria in Hamadan were toxinogenic type. Protoscoleces incubated with isolated bacteria degenerated totally but, fifty percent of protoscoleces in control groups were intact and viable even after one week.
Conclusions: High percentage of cysts in area was infected bacteriologically. The common isolated bacteria were E. coli and Klebsiella. The bacteria could degenerates protoscoleces in vitro during short time incubation.

Quality of life before and after hepatitis C antiviral therapy in hemophilia and thalassemic patients

ESC-ID: 1123
Authors: Teimoori M, Alavian SM, Hoseinzade A, Behnava B, Keshvari M, Noorani M, Tavalaei A, Bagheri Lankarani K, Foster GR
Country: Iran
University: Baqyatallah University of Medical Science , Department: Internal Medicine

Background and Aims: Treatment for Hepatitis C with Alpha Interferon (IFN-α) therapy in patient with Hemophilia and thalassemic increase problematic physical side effects, but prior studies have found little influence on patients' perceived health status. The aim of this study was to determine the psychosocial outcomes of treatment Hepatitis C with Alpha Interferon (IFN-α) therapy in patient with Hemophilia ant thalassemia.
Methods: This research was done on 202 chronic hepatitis C patients whom they also diagnosed by hemophilia or thalasemia. A self-reported questionnaire of HRQOL and continence was administered to patients who were candidates for Alpha Interferon (IFN-α) therapy. The questionnaire was re-administered during follow-up. The pretreatment and post treatment HRQOL burden scores were compared and correlated with the treatment, socioeconomic variable, virus type and other co morbid status.
Results: There were no significant differences' between two groups at base line HRQOL score (P>0.05). Total score of HRQOL significantly increased after therapy in overall two groups (1951 versus 2059. P value = 0.01). Significant improvement in total score of HRQOL was seen in two groups separately. Reduces In domains of physical domain and was seen than mental and psychological domain. Except of Physical energy domain, all difference was the same in two groups of patients. Total score and physical function were significantly better in thalassemic patient than the hemophilia at the end of study. In summary disrupted PT in hemophilia and greater age in thalassemia associated with reduce in Health related quality of life.
Conclusions: our findings demonstrate that physical domains of Health related quality of life are impaired among patients with hemophilia and thalassemia with hepatitis C and mental domains tend to gone better in antiviral treatment, however physical profile may be reduced because of treatment side effect. These results support the initiation of antiviral treatment in this population, it's strongly showed that successful treatment for hepatitis C has can improve Health related quality of life.

Fever of unknown origin

ESC-ID: 1192
Authors: Dabbas D, Matavulj, Stevanovic G
Country: Serbia
University: University of Belgrade, Serbia , Department: Institute of infectious and tropical diseases

Objective: The aim of this study was to define the distribution of diseases that cause Fever of unknown origin (FUO). Except of a single study on pediatric patients, no other studies on FUO have been preformed in Serbia.
Methods: 120 adult patients who were hospitalized from January the 1st to December the 31th 2008 and who fulfilled classic criteria for FUO had been retrospectively analyzed.
Results: Mean age of the patients was 46,6 years (range, 13-79 years). The gander breakdown was 62 (51,7%) male and 58 (48,3%) female patients. Mean duration of hospitalization was 21,4 ± 16,6 days. Infection was found in 76 (62,5 %) patients. The most frequent entities were urine infection, pneumonia, Epstein- Barr virus and tuberculosis. Noninfectious inflammatory diseases were found in 18 (15%) patients. Sarcoidosis was the most common. 3(2,4%) patients had both infection and noninfectious inflammatory disease. 4 (3,3%) patients had malignancy (2 haematological malignancies). Miscellaneous causes were found in 4(3,3,%) patients (2 subacute thyroiditis and 2 hyperthyreoidism). In 14 (11,6%) patients the cause of the fever was not determined. One patient died.
Conclusion: Infectious diseases emerge as the most

prevalent diagnostic category as demonstrated in other studies from Mediterranean countries.

Sex and HPV- do I know the possible prevention of HPV infection? - The assessment of knowledge about HPV infection and vaccination among students

ESC-ID: 1201
Authors: Sztylc J, Kowalik A, Morcinek A, Kasperska-Zajac A
Country: Poland
University: Medical University of Silesia , Department: Internal Diseases, Allergology and Immunology

Introduction: Genital human papilloma virus - HPV is a common virus that is passed on through genital contact, most often during sex. Most sexually active people will get HPV at some time in their lives, though most will never even know it. It is most common in people in their late teens and early 20s. There are about 40 types of HPV that can infect the genital areas of men and women. Most HPV types cause no symptoms and go away on their own. But some types (mostly type 16,18) can cause cervical cancer in women and other less common genital cancers - like cancers of the anus, vagina, and vulva. The vaccine is available to protect females against the types of HPV (type 16,18) that cause most cervical cancers. The HPV vaccine is recommended for 9-13 year-old girls. This vaccine targets the types of HPV that most commonly cause cervical cancer and genital warts. The vaccine is highly effective in preventing those types of HPV and related diseases in young women. Aim The aim of the study was to estimate the knowledge about the HPV vaccination among students.
Material and methods: Research was carried out in two cities in Upper Silesia. Research was based on a group of 266 people, 210 women and 57 men. The source of information was the anonymous questionnaire with 19 questions. To analysis was used Statistica 5.0.
Results: 61% women and 31% men heard about HPV vaccine. 45% women and 24,5% men answered negatively that the vaccine can protect from cervical cancer in 100%. 78% respondents think that women who have already been sexually active can be vaccinated, 29% declared that women who have been already infected can be vaccinated. 22% women and 67% men answered that men can be vaccinated. 33,5% students know that HPV vaccine is recommended for 9-13 years old girls. What is interesting 50,5% women and only 20,5% men know the price of the vaccine. 50,5% respondents think that HPV vaccination is safe and effective and should be recommended for young girls.
Conclusion: The students knowledge find out to be different depends on sex, age and which type of school they are attending. It is important to educate young people about the possibilities of prevention of HPV infection. Education of HPV infection and its prevention should go especially for young men, who think that the problem of HPV infection does not refer to them.

I am not at risk of HPV infection ... or maybe I am? – the assessment of knowledge about HPV infection and related with it cervical cancer among students

ESC-ID: 1203
Authors: Kowalik A, Sztylc J , Morcinek A, Kasperska-Zajac A
Country: Poland
University: Medical University of Silesia , Department: Internal Medicine, Allergology and Immunology

Introduction: Genital human papilloma virus (also called HPV) is the most common sexually transmitted infection (STI). There are more than 40 HPV types that can infect the genital areas of males and females. Most people who become infected with HPV do not even know they have it. In 90% of cases, the body's immune system clears HPV naturally within two years. But some types of virus, mostly type 16,18 can cause cervical cancer (anal, penile, vulvar cancer and genital warts) and usually does not have symptoms until it is quite advanced. For this reason, it is important for women to get regular screening for cervical cancer. Screening tests can find early signs of disease so that problems can be treated early, before they ever turn into cancer. Aim The aim of the study was to estimate the knowledge about the HPV infection and related with it cervical cancer among students.
Material and methods: Research was carried out in two cities in Upper Silesia. Research was based on a group of 266 people, 210 women and 57 men. The source of information was the anonymous questionnaire with 19 questions. To analysis was used Statistica 5.0.
Results: Generally 89% of questioned students admitted that they heard about the cervical cancer disease. 95% women and 77% men heard about the cervical cancer disease. 64% women and 50% men can correctly determined the age of incidence of this cancer. 74% respondents answered positively that cervical cancer can be caused by virus infection and 74% women and 61% men know that this type of virus is HPV. 63% students declared that HPV is passed on through genital contact. What is interesting 50% women and 24,5% men think that they can be at risk of this virus infection. 24,5% women and 13% men answered correctly that the body immune system can clear HPV infection naturally.75% respondents think that prognosis of the cervical cancer is less seriously that it really is.
Conclusion: The students knowledge find out to be different depends on which type of school they are attending. Better knowledge about cervical cancer was observed among women in comparison to men. Propagation of importance of regular cytology among young girls is still needed. There is need to educate young people about HPV infection and to realize them that some types of HPV are truly dangerous.

The correlation of microbiological, serological tests on brucellosis with clinical picture and the success of therapy

ESC-ID: 1258
Authors: Obradovic J, Dizdarevic I
Country: Serbia
University: University of Belgrade , Department: Infectious and tropical diseases

Introduction: Brucellosis is antropozoonosis caused by the bacteria from Brucella species. Infection is usually

transmitted by crude milk products. Brucellosis is a systemic disease with various clinical manifestations. It is often proved by commercial serological tests: BAB test, Wright's reaction, ELISA and PCR. The antibiotic therapy is used in treatment of this desease. Purpose: The purpose of this work was to show the correlation of microbiological and serological tests on brucellosis with the clinical picture and the success of therapy.
Material and methods: The work included patients from Institute for infectious and tropical diseases, treated in the period between 2004. and 2008. year, due to brucellosis. The results are graphically displayed and appropriate statistical methods were processed.
Results: Total number of hospitalizations from 2004. to 2008. year was 14. There were 9 (64%) men and 5 (36%) women among them. The age of hospitalized patients was from 25 to 78 years. Predominantly symptoms were: heightened body temperature, pain in muscles and joints, the feeling of shivers and chills. Serological diagnosis used standard tests to detect brucellosis: BAB test, Wright's reaction and ELISA. Additional clinical investigations were made: Rtg, CT, NMR and ultrasound of heart and abdomen in order to find differential diagnosis. The following antibiotics were used in the initial and alternative therapy: doxycycline, rifampin, ciprofloxacine, gentamycyne, trimethoprime-sulfometoxazole.
Conclusion: BAB test was positive in 92% and Wright's reaction was positive in 62% of patients. All patients had positive therapeutic response, depending on the duration of disease before hospitalization. All patients recovered and were sent home with extended treatment and control examinations.

Study on arthritis with reference to lymphatic filariasis

ESC-ID: 1438
Authors: Garg A, Das BK
Country: India
University: SCB Medical College, Utkal University , Department: MBBS

Aim: The objective of our study is to review the musculoskeletal manifestation in lymphatic filariasis. The incidence of arthritis of possible filarial etiology.
Methods and Material Study Group: Patients with the history suggestive of filarial etiology like fever, lymphangitis, lymphadenitis, and musculoskeletal manifestations with short history were screened. Blood was collected for complete blood count, ESR, and Og4C3 ELISA (for circulating filarial antigen, CFA) studies. Synovial fluid was collected from the patients who agreed for the intervention, for cytobiological, biochemical, crystal studies and for Og4C3 ELISA.
Methods: Circulatory Filarial Antigen (Cfa) Detection Test: Serum specimens and Synovial fluid of the joint involved (if effusion present) were tested using standard procedures for circulating filarial antigen (Og4C3) detection by ELISA test.
Main Outcome Measures: Proportion of patients detected with filarial antigen in their serum and/or synovial fluid samples were analyzed along with other relevant clinical findings.
Results: 30 patients fulfilled the criteria outlined earlier. It includes 09 males, and 21 females in the age group of 14-62 yrs. The complete blood count were within the normal range except for Eosinophil count which was high in 11 patients out of 30 (36.7%). Inflammatory parameter like ESR was raised in 12 out of 30 patients (40%). CFA, a marker of presence of adult worms, of the serum sample, was positive in 9 patients out of 30 (30%). Synovial fluid from the joint could be drawn in 7 cases. The fluid had high protein, normal sugar and low cell count. Most of the cells were polymorphonuclear (neutrophil) type. Og4C3 ELISA (CFA) was found positive in three cases out of seven. Two of these positive cases, had no circulating CFA levels. The other positive case, though had circulating CFA, the circulating level was lower than that in the corresponding joint fluid.
Conclusion: The classical manifestations of oligoarticular arthritis and Monoarticular arthritis are characteristic of Reactive arthritis and filarial arthropathy. Since other causes of reactive arthritis were excluded, the current manifestation is presumed to be of filarial etiology. The presence of CFA positivity in serum in 9 out of 30 cases (30%) indicates the presence of adult worms of filaria in the host. The test for detection of CFA is found to have 100% sensitivity and 94.12% specificity for detection of Mf carriers in sera samples. However, the presence of CFA positivity in 2 samples of synovial fluid, in the absence of CFA in serum strongly indicates the presence of adult worms within the joint space. This is a conclusive evidence of a direct relationship between the filarial parasite and arthritis and suggests that filaria, filarial worm or its components per se can induce arthritis.

Evaluation of the sensitivity of burn isolates of Pseudomonas aeruginosa to Cefepime

ESC-ID: 1509
Authors: Babazadeh H , Hosseini Jazani N, Zartoshti M, Sabahi Z
Country: Iran
University: Urmia University of Medical Sciences, Department: Faculty of Medicine

Introduction: Cefepime is a 'fourth generation' cephalosporin known to be active against a wide range of Gram-positive and Gram-negative bacteria. Cefepime is usually reserved to treat severe infections caused by multi-resistant microorganisms (e.g. P.aeruginosa).The aim of this study was to evaluate the sensitivity of burn isolates of Pseudomonas aeruginosa to Cefepime.
Methods: A total of 52 isolates of P.aeruginosa were obtained from burn wound infections. Bacterial isolates were cultured in Müller-Hinton agar and Minimum inhibitory concentration (MIC) was determined by Hicomb strips (Hi-media). Isolates were divided in three groups: Resistant, Sensitive and of intermediate resistant. The sensitivity of isolates to currently used antibiotics was determined by Kirby-Bauer method.
Results: 88.4% of isolates were resistant to Cefepime and 11.5% were intermediately resistant and none of the isolates were sensitive to Cefepime. The rates of resistance determined to antibiotics as follows: Gentamicin 96%, Ceftazidime, Kanamycin, Tobramycin, Ceftizoxime 100%, Amikacin 73%, Piperacillin 94.2%, Imipenem 50% and Ciprofloxacin 71%. All the isolates were multi-Drug resistant.

Conclusions: High prevalence of infection in the burn patients and detection of high levels of antibiotic resistance patterns of P.aeruginosa even to Cefepime suggest continuous surveillance of burn infections and the developing of strategies for antimicrobial resistance control.

Session: Microbiology and Hygiene / Infectious Disease

A study of antimicrobial effects from the smoke of burnt Peganum Harmala seeds in delivery room

ESC-ID: 493
Authors: Mohammadi Z, Sanagoo A, Jouybari LM , Seyfi A, Qaemi E
Country: Iran
University: Golestan , Department: Student Research Committe

Introduction: Peganum Harmala is an herb with a few years lifespan, and a low stem, apparently looking like Rue. Inside the black seeds of this herb, due to the presence of a collection of alkaloids and beta carbolines, are many noble properties considered to be anti microbes, anti fungi, and anti intestinal concealed parasite.
Aim: The aim of this study was to study the antimicrobial effects of Peganum Harmala smoke on space and facilities in delivery room and surrounding areas.
Material and Methods: In this study, the delivery room of the Dezyani teaching hospital was used to obtain samples. For sampling the open plate method was used. Immediately after the samples were collected, the internal space of a delivery room was smoked by the burning of seeds of wild rue at a rate of 100 Gr. of seeds per each 3 cubic meter of space. Immediately after smoking of the room sampling was performed and the same process of culturing was applied. For more assurance this operation was performed for three times with one week and one month elapse time for each operation. The results of the tests were recorded in the check list. Findings: During three cultures of the testing, samples were obtained from the delivery room and hospital facilities included in: files, lockers, trays, cabinets, switches and sockets, serum stands, suction valves, wall mounted oxygen supply outlets, patient's beds, refrigerator door, and the space atmosphere. Smoking with Peganum Harmala seeds showed no effect on the germs during the 1st. and 2nd.trials. In the samples taken in the 3rd.trial, after one hour smoking, considerable reduction in the number of colonies was observed. Cultured colonies in the suction was reduced from 200 to 70 colonies after applying smoke.
Conclusions: Considering the fact that no studies have been carried out in the human environ similar to that already performed, and also considering the unique conditions existing in the hospital environs, it is recommended that in the next investigations, yet to be carried out, additional controls of the variable factors be applied. Changes in duration of application of smoke and the dosage of wild rue seeds can also be effective on the test results. Performing laboratory studies can also be a guide line.

Influence municipal the occurrence of psychological noise interference

ESC-ID: 642
Authors: Djurovic S, Vasiljevic M
Country: Serbia
University: Kragujevac, Department: Microbiology and hygiene

Introduction: Noise is unwelcome, extremely loud, unpleasant or unexpected sound, may be permanent, interrupted or impact of variable levels of different duration and time distribution. There is no real definition for this phenomenon, but one must accept a subjective assessment and an auditory sensation. Depending on the source, noise can be industrial and municipal(town). The main sources of noise in human environment are traffic, industry, construction and public works, recreation, sport and entertainment. The increase of noise in the environment is affected by all the more faster pace of life in large urban areas. When over a certain intensity, it harms people's health causing aural and extraaural effects. Depending on the source, noise can be industrial and municipal(town). Permissible communal noise levels are regulated by law: 1. Law on Environmental Protection Sl. Gazette RS no. 66/91, 83/92, 53/95 and 135/04 2. Regulation on permitted level of noise in the environment Fig. Gazette RS no. 54/92 3. Measuring noise in the environment JUS U.J6.090.1992 4. Acoustic space zoning JUS UJ6 205 1992 Goal: To examine the impact of communal noise to the appearance of psychological disturbances of the population in the central-noisy and peripheral-less noisy area of the city of Kragujevac.
Material and Methods: For the experimental (noisy) zone were selected streets in the center of the city and along the two main roads in Kragujevac, where they expected a similar social structure and housing conditions in 2007. The total noise measurement was performed at 26 measuring points. For the control zone were selected streets designated for individual and collective housing (houses and buildings), with a similar social structure and housing conditions. In the control zone during 2007 the total noise measurement was performed at 24 points in Kragujevac.
Noise Measuring: Traffic noise measurements were performed in accordance with legal regulations (Official Gazette 54/92 and R.S. JUS U. J6.090. 1992). It was measured L eq (A) in three daily, 8-10, 13-15 and 18-20 hours, and two night intervals 23-01 and 4-6 hours in the period from January to December 2006. At all measuring points the traffic density was controlled, especially in light (cars and vans) and heavy vehicles (buses and trucks). Testing of acoustic conditions and traffic density tests were performed during 2006. In terms of exposure to traffic noise, according to address, respondents can be classified in two groups, those who lived in the area of the city center or along main traffic routes in the city and were exposed to significantly higher levels of noise both day and night, and respondents who lived in a purely residential area, which is not exposed to higher levels of noise during the day and night.
Study Design: Method for the study was an interview in the study section. The respondents themselves filled in questionnaires at their homes, after familiarization with the requirements of work. There were 898 people older than 18 who participated in the work. There were 398 respondents from noisy areas, while there were 500 of

those who lived in the quiet streets. All respondents were aged between 18 and 70 years, and they lived longer than one year at the aforementioned location. Groups of subjects were formed by using random samples. We formed the examined group-noisy zone by residents from four local communities using the electoral register (every ninetieth enrolled citizen was interviewed). We formed the control group at the same way, by interviewing every ninetieth voter from five local communities.
Poll: The questionnaire was anonymous and consisted of five parts.
Statistical Analysis: For statistical analysis were used methods of descriptive statistics such as: measures of central tendency (arithmetic mean), measures of variability: standard deviation, variance and determining the relative frequencies for all variables separately. Of the statistical tests there were used Student's t-test for two large independent samples (parametric statistical test), as well as nonparametric tests.
Results: 20.1) visits to a psychologist There is a highly significant statistical difference in relation to the distribution of visits to psychologists depending on the group. (0:01< 2 = 28.94 r c) 20.2) visits to a psychiatrist There is also highly significant statistical difference in relation to the distribution of visits to a psychiatrist, depending on the group. (0:01< 2 = 38.99 r c) 20.3) headaches The obtained answers expressed in percentage of respondents of both groups are very similar in terms of "Do you have a headache?" So that there is no statistically significant difference, in relation of headache distribution according to the group. (0:05> 2 = 3.33 r c) 20.4) the treatment of headaches There is a highly significant statistical difference in relation to the distribution of the treatment of headaches, depending on the group. (0:01< 2 = 41.13 r c) 20.5) the intensity of headaches There is a highly significant statistical difference in relation to the distribution of headache intensity depending on the group. (0:01< 2 = 41.13 r c) 20.6) the use of drugs to treat headaches There is a statistically significant difference in relation to the distribution of drug use to treat headache depending on the group. (0:05< 2 = 7452 r c) 20.7) headache medication prescribed by a doctor Headache medication prescribed by a physician to respondents is of a similar percentage in both groups. There is no statistically significant difference in relation to the distribution of prescribing drugs to treat headache depending on the group.(0:05> 2 = 2486 r c) 20.8) frequency of use of drugs for headache There is a highly significant statistical difference in relation to the distribution of frequency of use of drugs for headaches, depending on the group. (0:05> 2 = 2486 r c) 20.9) the use of drugs for sedations There is no statistically significant difference in relation to the distribution of drugs for sedation depending on the group. (0:05> 2 = 2486 r c) 20.10) drugs for sedation prescribed by a doctor There is a highly significant statistical difference in relation to the distribution of prescribing drugs for sedation, depending on the group. (0:01< 2 = 26.16 r c) 20.11) the frequency of using drugs for sedations There is a highly significant statistical difference in relation to the distribution of frequency of use of drugs for sedation, depending on the group. (0:01< 2 = 29.09 r c) 20.12) Mental illness in the family Almost the same percentage of respondents deny psychological illness in the family. There is a statistically significant difference in relation to the distribution of mental illness in the family depending on the group. (0< 2 = 5048 r c:05).
Conclusions: Study of psychological disturbance in the communal noise exposure shows in this work that the examined from the control group do not visit psychologists and psychiatrists, while there are respondents from the noisy group that have visited them. Respondents of both observed groups answer very similarly to the questions about headache, headache intensity and treatment, while research conducted in the vicinity of the highway in Gothenburg with equivalent noise level of 72 dB (A) shows that significantly more people complain of having a feel of "a clear fatigue","headache", in comparison with residents of control villages with communal noise level of 56 dB (A). A similar percentage of respondents of this study use drugs for headache and for sedation. Answers to use of headache drugs and drugs for sedation are equal for both groups, which may be explained by the subjective sense and the status of all subjects, as well as social norms. A similar study of psychological effects of traffic noise, as well as research on psychotropic drug consumption in the population around Amsterdam airport, points out to the increased consumption of sedatives and hypnotics, in comparison with the control region with low level of aircraft noises. While analizing the answers of respondents related to psychological interference with communal noise exposure, it is determined that there is a difference because they are members of the noisy zones who have visited psychologists and psychiatrists, while members of the control zones have not contacted help.

Bacterial species isolated from medical device and their antibiotic susceptibility

ESC-ID: 722
Authors: Kryeziu M, Rrahmani F, Kryeziu R
Country: Kosova
University: University of Prishtina , Department: Medical Faculty

Background: Bacterial contamination of medical devices and increased resistance of bacteria to antibiotics, is an important public health problem and major concern during inpatient treatment. Device associated infections, particularly ventilator associated pneumonia, central venous catheter associated bloodstream infections, catheter associated urinary tract infections and drain catheter surgical wound infections pose the greatest threat to patient safety in high risk units and are the cause of the major nosocomial infections.
Objectives: The aim of this study was to investigate contamination of medical devices with bacteria and to analyze their antibiotic susceptibility.
Methods: There where 420 samples of swabs taken from medical devices such as: endotracheal tube, central venous catheter and drain catheters, used for patient treatment in different cilical units in the University Clinical Centre of Kosova, during the year of 2008. The identification of isolates was done with a standard microbiological method. Using disk-diffusion method, the isolated bacteria where tested to the corresponding antibiotics, in Microbiology department in the National Institute of Public Health in Pristina. Through descriptive method the data has been processed based on the ward, bacteriological profile and antibiotic susceptibility.
Results: Results showed that from 11 wards, 92.4% of samples where from the Intensive Care Unit and the Center for Premature Born Babies. The most common isolated species, also from the above mentioned wards, where

species from the genus of Pseudomonas (27.8%), Staphylococcus (23.1%) and Klebsiella (16.7%), with Staphylococcus showing a high resistance rate to Oxacillin (82,6% of cases).The global resistance of bacteria tested to the corresponding antibiotic, is in the average rate of 63,1%.
Conclusion: Together with the awareness of the medical staff for device associated infections, ongoing surveillance of bacterial resistance, regular and sufficient supply with sterile equipments for one time use, it is necessary to found national nosocomial infection control programs in order to lower morbidity, disability and mortality in Hospital care.

Lipid profile and cardiovascular risk of hiv positive patients on antiretroviral therapy

ESC-ID: 902
Authors: Novakovic M
Country: Serbia
University: University of Novi Sad , Department: Faculty of Medicine

Introduction: Thanks to the application of modern antiretroviral therapy, HIV-infected patients have a significantly extended life expectancy and improved quality of life. Three main groups of anti-HIV drugs are: nucleoside reverse transcriptase inhibitors (NRTI), non-nucleoside reverse transcriptase inhibitors (NNRTI) and protease inhibitors (PI). Some of these drugs, however, may lead to consequential dyslipidemia, which is a risk factor for the cardiovascular disease.
The Aim: The aim of the study was to examine whether there were differences in terms of lipid status and cardiovascular risk between PI/NRTI and NRTI/NNRTI treatment protocols, as well as the influence of the duration of consumption and type of antiretroviral therapy and other risk factors on the occurrence of cardiovascular disease.
Material and Methods: The study included 36 HIV-infected patients who were taking highly active antiretroviral therapy (HAART). Patients were divided into two groups based on therapeutic protocols: the first group consisted of patients in the therapeutic PI and NRTI protocol, and the second one of patients in the NRTI and NNRTI protocol. There were 22 patients in the first group and 14 patients in the second one. Data were obtained by the questionnaires, anthropometric measurements, control examination, laboratory analyses and cardboards. Framingham score was used for calculation of the 10-year cardiovascular risk. A p-value less than 0.05 was considered statistically significant.
Results: The mean age was 40 years, and 88.9% were males. Anthropometric measures, such as body mass index, waist-to-hip ratio and body fat percentage, had similar values in both groups. Concerning lipid profile, patients using PI/NRTI protocol had lower total cholesterol and LDL than patients using NRTI/NNRTI protocol (5.53 vs. 5.86 mmol/l and 3.16 vs. 3.82 mmol/l respectively), but the difference was insignificant ($p>0.05$). Mean values of HDL were almost identical in both groups (1.24 vs. 1.21 mmol/l, $p>0.05$). Patients in the PI/NRTI protocol had significantly higher triglycerides compared to patients in the NRTI/NNRTI protocol (2.73 vs. 1.74 mmol/l, $p<0.05$). Average duration of consumption was 5.45 years, similar in both PI/NRTI and NRTI/NNRTI groups. There were no significant changes in lipid profile influenced by longer duration of consumption in both therapeutic groups. Patients in both groups did not show any significant difference in having additional cardiovascular risk factors (age, male sex, cigarette smoking, physical inactivity, atherogenic diet, family history of cardiovascular disease, hypertension, hyperglycemia). Patients in the PI/NRTI protocol had significantly higher 10-year cardiovascular risk compared to patients in the NRTI/NNRTI treatment protocol (9.68% vs. 5.14%, $p<0.05$).
Conclusions: PI/NRTI protocol causes significantly higher triglyceridemia and increased cardiovascular risk compared to NRTI/NNRTI protocol, which should be taken into account when prescribing therapy to HIV-infected patients, especially to those ones with additional risk factors.

Factors associated with helicobacter pylori infection among inpatients at a tertiary care hospital in the largest city of Pakistan

ESC-ID: 1060
Authors: Ahmed B, Khan F, Valliani A, Khuwaja AK
Country: Pakistan
University: Dow University of Health Sciences , Department: Medicine

Background: It is known that blood group antigens are related to the development of peptic ulcer and gastric carcinoma. Infections due to H.pylori are most widespread among the developing regions due to the poor standard of living. This study sought to determine the relationship between H. pylori and ABO blood groups, age, gender, smoking and life style among inpatients at a public sector hospital in Karachi.
Methods: A cross-sectional study was conducted at endoscopy suit at a Public Sector Hospital in Karachi in year 2009. All the symptomatic patients coming for upper GIT endoscopy were included in this study.
Results: Biopsy for histopathology was taken from 93 patients, with age ranges from 15-65 years. Age group of 15 to 20 years was found to be related with H.pylori infection but was not found highly significant (p-value 0.83). In all, 36 (38.7%) were turned out H.pylori positive with a significant male preponderance (p=0.04). Distribution of ABO blood groups in H. Pylori positive group were A= 31.4%, B= 15.4%, AB= 25.0% and O= 53.7%, with a statistically significance of blood group O (p= 0.05) with H pylori infection. Rhesus factor was also compared but could not found statistically significant (p-value 0.73). Similarly, use of tobacco was also not highly significant with H pylori infection (p-value 15).
Conclusions: This study demonstrates that H. pylori infection can be related to ABO blood group, middle age persons and male gender of the society. People of blood group O are more prone to develop infection related gastritis, ulcers, and even perforations, so they should be cautious against transmission of it.

To assess the sero-prevalence of viral hepatitis B, C and HIV in multi-transfused thalassemia major patients of Civil Hospital, Karachi, Pakistan

ESC-ID: 1101
Authors: Ullah F, Riaz H, Aziz S, Khan MU, Ejaz A, Hasan M, Pervaiz R, Moiz F, Riaz T, Naqvi SAA
Country: Pakistan
University: Dow University of Health Sciences , Department: Dow Medial college

Background: Thalassemia major is the most prevalent genetic disorder in Pakistan. Repeated transfusions predispose the patient to transfusion transmitted infections such as viral hepatitis and HIV. The present study aimed to assess the seroprevalence of hepatitis B,C and HIV in multi-transfused thalassemia major patients.
Methodology: This is a cross sectional study in the Paediataric Emergency Unit of civil hospital Karachi, a tertiary care hospital of Pakistan in a duration of 3 months after approval by the Ethical review board(ERB) of Dow University of Health Sciences(DUHS). Diagnosed cases of thalassemia major n=79, diagnosed through heamoglobin electrophoresis that had undergone at least ten transfusions were included in the study after an informed written consent. The sampling technique was non probability purposive sampling. Further inclusion criteria included that the screening of patients for the viral hepatitis and HIV hasn't been carried out for at least one year prior to the start of study. Less than ten transfusions, non-provision of consent or a screening during the past 12 months excluded the patient from the study. The patients were interviewed for basic demographic data with the help of a questionnaire, after which sample of blood was obtained by venepuncture and laboratory tested for HepB, Hep C and HIV.
Results: The mean SD age was 10.8± 4.4 years (range 2 to 18 years). Males were 46(58.2%) while remaining were females. A total of 34 out of the 79 (43.0%) of the patients enrolled in the study serologically tested positive for hepatitis C (Mean ± SD age= 12 ± 4.1 years). The mean ± SD age for Hepatitis C-ve patients was 9.0 ± 4.5 years compared to 12.0±4.1 years for Hepatitis C+ve patients. Hepatitis B surface antigen was positive in 4(5.1%) and none for HIV. 36.4% revealed that their monthly house hold income was between 5000-10,000 PKR per month; just 45.5% provided the history for Hepatitis B vaccination.
Conclusions: Hepatitis C is rampant in multi-transfused thalassemia major patients suggesting a pitfall in the screening of blood. Improved screening techniques, superior surveillance methods, awareness programs through print and electronics media are some of the measures to address this menace.

Molecular characterization of CTX-M-type extended-spectrum [beta]-lactamases of escherichia coli isolated from a portuguese university hospital

ESC-ID: 1135
Authors: Frois M, Silva,G
Country: Portugal
University: Coimbra , Department: Pharmacy

Background: Extended-spectrum [beta]-Lactamases (ESBL) is the name given to some specific proteins that confer bacterial resistance to penicillins, first-, second- and third generation cephalosporins, and aztreonam. The majority of ESBLs is inhibited by [beta]-lactamase inhibitors. Cephamicins and carbapenems are not hydrolyzed by these enzymes. The existence of these enzymes is being documented since the introduction of third generation cefalosporins in the market. ESBL genes can be divided in 3 big families: TEM, SHV and CTX-M. CTX-M-enzymes are a type of ESBL whose prevalence has dramatically increased worldwide in the past recent years. The name given to this ESBL type evidences the greater capacity to hydrolyze cefotaxime (CTX) and ceftriaxone than ceftazidime (CAZ). TEM- and SHV-derived ESBLs hydrolyze more efficiently ceftazidime. Recently, a few CTX-M emerged with a high capacity of hydrolysing both CTX and CAZ, namely the CTX-M-15. The first description of an isolate Escherichia coli producing CTX-M-14 was reported in this country in 2003. In 2005, the first CTX-M-15 isolated in Portugal was identified. Recent studies indicate that E. coli ESBL-producers might be widespread across the country both in nosocomial and community environments. Objective.The aim of this work was to study the prevalence of CTX-M-producing E.coli isolates collected from the Hospital of the University of Coimbra (HUC) and to characterize these isolates both phenotypically and genotypically.
Methods: Between November and December 2007, 220 non-duplicate E. coli isolates were recovered at HUC. The ESBL producers were identified by the automatic VITEK 2 AES, further confirmed by the disk diffusion synergy test. The blaCTX-M genes were detected by PCR and the amplicons were sequenced. Genetic relatedness was assessed by ERIC-PCR. A CTX-M-15-producing E. coli isolate collected in 2004 at the same hospital was included in the study.
Results and Conclusions: Twenty one isolates (100%) were identified as ESBL-producers resistant to all penicillins, first generation cephalosporins, CTX and CAZ, but susceptible to imipenem mostly isolated from urines (76,19%). The nucleotide sequence analysis identified the CTX-M-15 enzyme in all isolates. All the isolates were clonally related. The DNA fingerprinting was identical with the CTX-M-15-producing strain collected in 2004. Our results showed the spread of hospital-acquired urinary tract infections caused by CTX-M-15-producing E. coli and the prevalence of these infections in women. Also, the results showed that the emergence of CTX-M-15 in this institution is related to the spread of a clone over time. We have also concluded the need to upgrade the control infection measures in this hospital as our work has confirmed the presence of an endemic Escherichia coli clone disseminated in different wards, a clone already identified in 2004, and according our results, maintained at this hospital until 2007.

Bactericidal activity of argentums nanoparticles against antibioticresistant and susceptible strains

ESC-ID: 1186
Authors: Baitsova N, Tapalski D, Kazlova A, Yarmolenko M, Rogachev A
Country: Belarus
University: Gomel State Medical University , Department: Microbiology, Virology and Immunology

Aim: To estimate minimal inhibitory concentrations of silver nanoparticles on multiantibioticresistant and sensitive referent strains.

Materials and methods: Argentum nanoparticles (AN) were obtained in active gaseous phase generated by electron beam dispersion of AgNO3 powder under vacuum. AN were applied on polyethylene plate (PEG-115). Nanoparticles size was determined by electron transmissive microscope JEM 2100 (JEOL). Water suspension of AN was achieved by dissolution of plates into distillated water. AN concentration in solution wes determiner under mas-spekrometer Elan 9000 (PerkinElmer). Minimal inhibitory concentrations (MIC) for following bacterial cultures have been tested: Staphylococcus aureus ATCC 25923 (antibiotic-sensitive), S.aureus ATCC 35591 (methicillin resistant), E.coli ATCC 25922 (antibiotic-sensitive), E.coli ESBL CTX M-3 (productive of extended spectrum beta lactamase CTX-M(ESBL CTX-M producing)), Klebsiella pneumoniae ATCC 13883 (antibiotic-sensitive), K.pneumoniae ATCC 700603 (ESBL SHV producing), Pseudomonas aeruginosa ATCC 27853 (antibiotic-sensitive), P.aeruginosa 257 MBL VIM (multi antibiotic-resistant, productive MBL), Salmonella Typhimurium ATCC 13311, Shigella sonnei ATCC 29930 Double serial dilutions of nanoparticles in tripticase-soy broth were made (concentrations range 0.125-8.0 mg/L). Solutions were introduced into alveolar flat-bottomed polystyrene plates in amount of 150 mcL plus 10 mcL of bacterial suspension of tested microorganism, containing 104 cells each flat. As a growth control flats with 150 mcL of broth without nanoparticles were used. Plates were incubated at 37°C for 24 h, growth was checked visually.
Results: Mean nanoparticles value as determined with electron transmissive microscope was 25-30 nm. Marked antimicrobial activity against all tested microorganisms was revealed. MIC of argentums nanoparticles for tested cultures were ranged from 0.5-4 mg/L. Most susceptible to AN (MIC 0,5 mg/L) was ESBL-produsing E.coli. The largest MIC value was determined for polyantibioticresistant MBL-producing P.aeruginosa strain. At concentrations about 1 mg/L AN inhibited growth of antibioticsusceptible E.coli ATCC 25922 and S. aureus ATCC 25923 and antibioticresistant strain K.pneumoniae ATCC 700603. Concentration of AN about 2 mg/L were bactericidal against S.Typhimurium, S.sonnei, MRSA S.aureus, susceptible strains of K. pneumoniae ATCC 13883 and P.aeruginosa ATCC 27853.
Conclusions: Developed technology of forming of argentum nanoparticles has a marked bactericidal activity against all studied bacteria and fungi referent strains. Estimated bactericidal effect is universal and does not depend on antibiotic susceptibility-resistance of tested strains and has a potential usefulness for local antimicrobial treating of infections caused with multiantibioticresistant strains.

Studying the relationship between previous Chlamydia pneumonia infection with atherosclerotic coronary artery disease

ESC-ID: 1373
Authors: Kazemitabrizi N, Khazanehdari S, Darvishi M, Barbati ME, Zareiy S, Alizade K
Country: Iran
University: Shahid Beheshti University of Medical Sciences , Department: Medicine

Background: Ischemic heart disease is the most common cause of mortality and morbidity in developed countries. In recent years, atherosclerosis has been introduced as an inflammatory and immunological disease in response to vascular injury. In addition, it is proposed to be associated with the infectious diseases such as Chlamydia pneumonia. The aim of this study is to evaluate anti-Chlamydia antibody in CAD patients and normal population.
Materials and methods: In a case - control study, 80 subjects were divided into two groups based on their angiography .The data contains demographic and medical information such as age, gender, history of diabetes, hypertension, smoking status and etc. Blood samples were sent to laboratory for biochemical and immunological assessments. Antibody titers of 5urb/ml and higher was considered as positive.
Results: Anti-Chlamydia pneumonia antibody was positive in 76.2% of study population. 90% of cases and 62.5% of the control group had positive antibody which is statistically significant.
Conclusions: The results indicate a positive relationship between previous Chlamydia pneumonia infection and CAD. And also it is showed that previous infection with this microorganism should be considered as a risk factor for CAD.

Study of microbes contaminating computers in hospitals and the effectiveness of spirit in their disinfection to prevent nosocomial infection.

ESC-ID: 1413
Authors: Anand T, Asima B
Country: India
University: Bangalore Medical College and Research Institute
Department: Department of Microbiology

Computers are ubiquitous and have been shown to be contaminated with potentially pathogenic microorganisms. They present unique infective control challenges as the keyboards and mouse are difficult to clean and moreover most hospitals do not offer disinfection instructions. This is a prospective study designed to obtain the degree of contamination of computers. Two swab samples were taken from each object, one before and the other after disinfection with spirit. The samples were inoculated in appropriate media and the isolates were identified. Antibiotic sensitivity test was done to confirm their pathogenicity potential. It was found that all the tested 50 computer keyboards and mice, were positive for microbial contamination. The organisms isolates were Gram negative bacilli (45.98%), Staph sp. (19.54%) and fungi (2.30%); revealed a general level of contamination. The antibiotic sensitivity test revealed a high degree of resistance in the isolated microbes, Imipenem and Meropenem (94.25%) appeared to be the most active antibiotics against the majority of isolates. The presence of a high resistance to ceftazidime and ceftriaxone but high sensitivity to imipenem and meropenem indirectly suggests extended-spectrum beta-lactamases (ESBL) activity, which may appear under the selective influence of extensive usage of third-generation cephalosporins. The disinfectant spirit wipes were highly effective at removing or inactivating 98.85% of microbial contamination. There is both a rapid emergence and increasing prevalence of resistant microbes in the hospital. Hence, it is highly

suggested that routine cleaning of these surfaces with disinfectants like spirit should be encouraged.

Types of Oral Candidial species and influence of ART treatment over it in HIV+ve patients in a Tropical country

ESC-ID: 1422
Authors: Khare A, Adchitre HR
Country: India
University: Maharashtra University of Health Sciences, Nashik, Department: Medicine

Aim: Oropharyngeal candidiasis is among the initial manifestations of HIV-Induced immunodeficiency to be recognized and typically affects the majority of persons with advanced untreated HIV infection. Although HIV infected individual harbor multiple strains of oral candida albicans, little is known of their micro evolution overtime. By carrying out the laboratory investigations, this study will give a clinical correlation to find out various species of candida involved and we help in finding out which species is common in our area and their relation with CD4 count and influence of ART treatment.
Materials and Methods: Fifty individuals suffering from symptoms of presences of mouth and recurrent ulcers having positive serology for HIV infection were enrolled in the study. A swab from oral mucosa was examined for the presence of Candida and it was put to laboratory tests including Gram Staining, germ tube test, sugar assimilation test, sugar fermentation test for confirmation of the same. The CD4 count of the patients was also measured and the treatment history was obtained.
Results: 37 out of the 50 patients enrolled had candidal infection after the gram staining of the smear was performed.5 samples showed doubtful structures which were then excluded from the study. All the 37 samples were diagnosed as Candida dublienensis and maximum number of patients had CD4 counts in range of 100-150.
Conclusions: High degree of candidiasis was found associated with low CD4 counts.This signifies the fact that very low CD4 counts were prevalent in the patients suffering from Candida, thus worsening the disease in them. Candida was seen in 74% of the patients and in 30% of patients full blown high degree candidiasis was seen who were having ART .C. dublienensis which is an uncommon species in tropics was the main species which could be identified in the patients. Oraphalyngeal candidiasis has become increasingly common in immunocompromised patients and leads to increased morbidity mortality of the patient.Rapid diagnosis and antifungal treatment will help in improving the life standards

Analysis of phosphodiesterase-12- A potential new target for therapeutic inhibtion of hepatitis C virus replication

ESC-ID: 1475
Authors: Sri-Ganeshan M, Sadiq F, Thursz M
Country: United Kingdom
University: Imperial College London , Department: Faculty of Medicine

Introduction: Hepatitis C infection is a significant International Health Issue, with 3% of the World's population currently being chronically infected. The present treatment regimes are not satisfactory as they produce a relatively low sustained virological response rate and have undesirable side-effects. We have observed the potential for a new therapy through amplification of an interferon induced intracellular antiviral pathway known as the 2-5 oligoadenylate synthetase/ RibonucleaseL pathway. The aim of this study was to observe the potential anti-viral effect that arises from the knockdown of a particular enzyme within this pathway, known as Phosphodiesterase -12 (PDE-12) using RNA interference (RNAi).
Material and methods: Firstly the degree of knockdown of Phosphodiesterase-12 using RNA interference was determined by transfecting HuH7 cells with Phosphodiesterase-12 specific small interfering RNA (siRNA) and the quantifying Phosphodiesterase-12 messenger RNA within the cell using Real Time PCR. Conditions were adjusted until the optimum transfection conditions were found. Then the anti-viral effect of the Phosphodiesterase-12 knockdown was determined by transfecting cells under optimum transfection conditions and then performing an anti-viral assay by treating cells with Interferon and then exposing to Encephalomyocarditis Virus (EMCV) before observing the effect of cell survival through observing cell viability.
Results: Transfecting HuH7 with Phosphodiesterase-12 at a concentration of 50nM siRNA followed by an incubation of 48 hours achieved a knockdown of about 70%. The results of the anti-viral assay showed that treating cells under these same conditions, provided an increase in cell viability of about 45%, compared to untransfected cells following interferon treatment.
Conclusion: This investigation demonstrated that there is a significant increase in the anti-viral resistance of Huh7 cells when there has been a large enough knockdown of PDE-12. This could provide the basis for further investigation into this area with the potential for the development of a new therapy which could could not only prove beneficial in the treatment of Hepatitis C, but other single stranded RNA viruses as well.

Session: Nephrology / Urology

Cryotherapy for prostate carcinoma

ESC-ID: 505
Authors: Ivan C, Suciu M, Hondola R, Grad L, Keresztes A, Sulea C
Country: Romania
University: Universitatea de medicina si farmacie Iuliu Hatieganu Cluj Napoa , Department: Medicina generala

*Introduction:*Cryotherapy is a procedure that represents the ablation of the tissue by using extremely low temperatures. Nowadays is used as a first line treatment for the patients with prostate localized carcinoma and also as a therapeutic option for refractar prostate tumors and salvage cryotherapy.
Aim: The aim of this study is to evaluate the efficiency of cryotherapy as curative and paleativ treatment of prostate carcinoma in our center. As a secondary objective is the comparison with the literature results.
Materials and Methods: In this study were included 98

patients diagnosed with prostate carcinoma after clinical examination, PSA level dosage, transrectal ecography, CT of abdomen, torax and pelvis, MRI and prostatic biopsy. All the patients underwent third generation transrectal guided cryotherapy. The median patient age was 68 years and the median follow up period was 18 months. According to the D'Amico risk stratification system, 70 patients had low risk,19 had intermediate risk and 9 had high risk prostate cancer. All patients underwent a dual freeze thaw cycle using third generation cryotechnology with ultrathin 17 gauge cryoneedles. Follow up included PSA determination at 3, 6 and 12 months and every 6 months thereafter.Transperineal biopsies were performed in case of biochemical failure defined as PSA nadir value increasing with 0.5ng/ml or subsequent biochemical failure PSA (increase with 0.2 ng/ml).
Results: The prostate specific antigen level for all patients at the last follow up visit was less than 0.5 ng/ml in 88 patients and 0.5 ng/ml or more in 10 patients. Six patients had persistent prostate cancer confirmed by prostate biopsy and were treated with salvage criotherapy. Four other patients had an elevated PSA level after cryotherapy despite negative posttreatment biopsies and a metastatic evaluation. Of these 4 patients, 2 had their postcryotherapy PSA level normalized and 2 patients with intermediate risk and high risk preoperatively had a consistent incease of PSA and we consider them for re-biopsies.The survival rate was 100%.
Conclusions: Cryotherapy is offering a safe and efficient alternative in the treatment of prostate carcinoma, being considerated a future technique in controling prostate carcinoma.

A report on metabolic evaluation of 153 children with urolithiasis

ESC-ID: 733
Authors: Fallahzadeh MK, Fallahzadeh MH, Sedighi V, Basiratnia M
Country: Iran
University: Shiraz University of Medical Sciences, Department: Pediatrics

Objectives: The objective of this study was to evaluate the possible underlying metabolic abnormalities in children with urolithiasis.
Methods: 153 patients (82 boys and 71 girls with M/F ratio of 1.15) ranging in age from 2 months to 18 years (mean age =4.84 ± 4.81 years) with documented renal stones were enrolled in this prospective cross-sectional study. Full metabolic evaluations of blood and urine were done for all of the patients.
Results: 139 patients (90.8%) had at least one related metabolic abnormality. The frequencies of these abnormalities in decreasing order were as following: hypomagnesuria (n = 93, 60.8%), hypocitraturia (n = 81, 52.9%), hypercalciuria (n = 72, 47.1%), hyperuricosuria(n = 57, 37.3%), hypernatriuria (n = 52, 34.4%), hyperoxaluria(n = 26, 17%), renal tubular acidosis(n=10, 6.5%), hyperuricemia(n = 7, 4.6%) and cystinuria (n = 3, 2 %). Anatomical abnormalities were detected in 6 patients; of these patients, 5 had associated metabolic abnormalities.
Conclusions: In contrast to previous reports, higher proportion of our patients have underlying metabolic abnormalities, even in those with anatomical abnormalities. Furthermore, in other reports, hypercalciuria is the most frequent abnormality associated with urolithiasis; however, in our study, hypomagnesuria and hypocitraturia are more common.

The role of gstm1 and gstt1 polymorphism in patients with renal cell carcinoma

ESC-ID: 746
Authors: Coric V, Suvakov S
Country: Serbia
University: University of Belgrade , Department: Institute for Medical and Clinical Biochemistr

Members of glutathione transferase (GST) superfamily exhibit polymorphic expression. GSTs are investigated as biomarkers of risk for various cancers, including renal cell carcinoma (RCC).
Aim: The aim of this study was to test the association between GSTM1 and GSTT1 polymorphism and susceptibility to RCC, independently or in conjunction with known risk factors.
Methods: Genomic DNA was isolated from 182 controls and 76 patients with RCC. GSTM1 and GSTT1 genotypes were determined by multiplex PCR. Data obtained were analyzed with respect to RCC risk factors including smoking and occupational exposure.
Results: The frequency of GSTM1-null genotype was higher in patients with RCC (60.5%) compared to controls (47.2%). GSTT1-null genotype was found in 28.6% controls and 27.6% cases. GSTM1-null individuals exhibit 1.9-fold increased risk of RCC (95% CI: 1.06-3.33). The presence of GSTT1 active genotype was associated with increased risk of RCC in occupationally exposed subjects when unexposed GSTT1-null subjects were used as a comparison group (OR: 2.48; 95% CI: 1.05-5.86). No association was found between inactive form of GSTM1 and GSTT1 and smoking in RCC patients.
Conclusions: In Serbian cohort of patients, the presence of GSTM1 active genotype is protective against RCC, whereas GSTT1 active genotype increases RCC risk in occupationally exposed subjects.

Short-term stimulation of the thiazide-sensitive Na^+Cl^- cotransporter by vasopressin involves phosphorylation and membrane translocation

ESC-ID: 774
Authors: Mutig K, Saritas T, Uchida S, Kahl T, Borowski T, Paliege A, Böhlick A, Bleich M, Shan Q, Bachmann S
Country: Germany
University: Charite Berlin , Department: Anatomy

Vasopressin influences salt and water transport in renal epithelia. This is coordinated by the combined action of V2 receptor-mediated effects along distinct nephron segments. Modulation of NaCl reabsorption by vasopressin has been established in the loop of Henle, but its role in the distal convoluted tubule (DCT), an effective site for fine regulation of urinary electrolyte composition and the target for thiazide diuretics, is largely unknown. The Na^+Cl^- cotransporter (NCC) of DCT is activated by lumi-

nal trafficking and phosphorylation at conserved NH2-terminal residues. Here, we demonstrate the effects of short-term vasopressin administration (30 min) on NCC activation in Brattleboro rats with central diabetes insipidus (DI) using the V2 receptor agonist desmopressin (dDAVP). The fraction of NCC abundance in the luminal plasma membrane was significantly increased upon dDAVP as shown by confocal microscopy, immunogold cytochemistry, and Western blot, suggesting increased apical trafficking of the transporter. Changes were paralleled by augmented phosphorylation of NCC as detected by antibodies against phospho-threonine and phosphoserine residues (2.5-fold increase at Thr53 and 1.4-fold increase at Ser71). dDAVP-induced phosphorylation of NCC, studied in tubular suspensions in the absence of systemic effects, was enhanced as well (1.7-fold increase at Ser71), which points to the direct mode of action of vasopressin in DCT. Changes were more pronounced in early (DCT1) than in late DCT as distinguished by the distribution of 11beta-hydroxysteroid dehydrogenase 2 in DCT2. These results suggest that the vasopressin-V(2) receptor-NCC signaling cascade is a novel effector system to adjust transepithelial NaCl reabsorption in DCT.

Anti-diabetic, hypolipidemic and crosslink breaking properties of ginger (Zingiber Officinale) in streptozocin-induced diabetic rats

ESC-ID: 911
Authors: Omipidan SA, Nmorsi G, Eze KA
Country: Nigeria
University: St. Luke School of Medicine, Liberia , Department: Medicine

Background: Hypertension, Diabetes and infections like HIV/AIDS, Hepatitis and Malaria, have been blamed for the upsurge in Chronic kidney Disease (CKD). Of the 13 millions Nigerians, estimated to have CKD, about 10 million are diabetic, squaring diabetes as the leading cause of chronic renal failures in Nigeria and the world at large. Advanced Glycosylation End Products, A.G.E.s has been implicated in the pathogenesis of many progressive diseases of aging like vascular diseases and diabetic complications. There is good evidence that early treatments delays or prevent the onset of diabetic kidney disease or CKD. The development of inhibitors and cross-link breakers like Aminoguanidine and thiazolium salts are recently fraught with problems emanating from their safety profiles studies. Against this backdrop, the studies of natural substances like Ginger, documented for its hypoglycemic, hypocholesterolemic, hypolipidemic and reversing proteinuria potentials, has allowed us to explore its therapeutic effects on vascular A.G.E.s accumulation and hypertrophy associated with diabetes, in line with the WHO recommendation of assessment of efficacious natural substance, for the management and treatment of diabetes.
Methods: Male Sprague-Dawley rats weighing 200-250g were selected at random into a normal group (n=8) and STZ-treated group (n=20). The STZ-treated group received 60mg of STZ/kg b.wt intraperitoneally, IP (Axler, 82). After 3dys, blood taking from them was analyzed for glycemia. Those with high serum glucose (>3500mg/l) were selected randomly into two groups (n=8); the control diabetics and ginger-treated diabetics. The control diabetics received daily injections of saline IP, while the ginger-treated diabetic received 500mg dly/kg b.wt of ginger extract IP too. At 2wks, 5 and 7 respectively, blood were taking from these rats through cardiac puncture and the serum prepared for analysis of glucose, cholesterol and triacylglycerol levels spectrophotometrically. Urine samples were also collected for protein analysis using Bradford method (1976). At the end of 7wks, the animals were sacrificed under anesthesia and the mesentery vessels stripped to expose the superior mesenteric tree, then weighed, frozen in liquid nitrogen and stored at -80°C for assays of A.G.E.s concentrations by immunoperoxidase technique described by Soulis T. Readings of 3-groups were done using ANOVA and readings between 2-different groups done by independent sample test. SPSS version 13 was used for the statistical analysis with a p value of <0.05 considered to be statistically significant.
Results: The glucose levels, cholesterol, triacylglycerol and urine protein, continued to increase during the 7wks experimentation in the control diabetics compared to the post-STZ injection levels. However, the ginger-treated diabetics showed significant reductions in these levels (52%; 44%; 41%; 56%, $p<0.05$), with urine protein levels approximating the levels in the normal group at 5 and 7wks. Immunohistochemical evaluation of the mesenteric vessels shows marked increase in A.G.E.s staining in the medial layer of control diabetics ($p<0.001$) with no noticeable staining in ginger-treated diabetics.
Conclusions: Raw ginger may be effective in inhibiting or reversing A.G.E.s accumulation in blood vessels and management of diabetic complications.

The correlation between erectile dysfunction and LUTS

ESC-ID: 970
Authors: Petrut M-C, Popa M-I, Porav-Hodade D, Coman I, Boja R
Country: Romania
University: University of Medicine and Farmacy Targu-Mures , Department: General Medicine

Aim: Establishing a possible correlation between erectile dysfunction and LUTS.
Material and methods: The study involved 924 patients who agreed to complete 2 questionnaires: IIEF and IPSS. The IIEF test (International Index of Erectile Function) quantifies the erectile dysfunction. It includes 15 questions, each listed from 1 to 5 (minimum 15 points, maximum 75 points). The IPSS test (International Prostatic Symptom Score) quantifies the intensity of urinary symptoms in man with prostatic pathology. It includes 7 questions, each quoted from 0 to 5 points (0 points minimum, maximum 35 points). The statistical analysis was performed using the Graph Pad statistical program and the Chi-squared Test for Independence.
Results: The patients enrolled in this study were assigned according to age decades, to the degree of erectile dysfunction severity and to the degree of prostate symptoms severity. Group A: 40-49 years Mild IPSS+No ED:16 patients Mild IPSS+Mild ED:8 patients Mild IPSS +Moderate ED:1 patient Moderate IPSS+No ED:3 patients Moderate IPSS+Mild ED:17 Patients Moderate IPSS+Moderate ED:2 patients Severe IPSS+No ED:2 patients Severe IPSS+Mild ED:4 patients The p value is

0.0111. Group B: 50-59 years Mild IPSS5+No ED:4 patients Mild IPSS+Mild ED:73 patients Mild IPSS+Moderate ED:18 patients Mild IPSS+Severe ED:13 patients Moderate+IPSS No ED:19 patients Moderate IPSS+Mild ED:84 patients Moderate IPSS+Moderate ED: 28 patients Moderate IPSS+Severe ED:9 patients Severe IPSS+No ED:8 patients Severe IPSS+Mild ED :24 patients Severe IPSS+Moderate ED: 12 patients Severe IPSS+Severe ED:4 patients The p value is 0.0007. Group C: 60-69 years Mild IPSS+No ED: 21 patients Mild IPSS+Mild ED: 30 patients Mild IPSS+Moderate ED: 43 patients Mild IPSS+Severe ED: 14 patients Moderate IPSS+No ED: 12 patients Moderate IPSS+Mild ED: 70 patients Moderate IPSS+Moderate ED: 41 patients Moderate IPSS+Severe ED: 15 patients Severe IPSS+No ED: 3 patients Severe IPSS+Mild ED: 80 patients Severe IPSS+Moderate ED: 25 patients Severe IPSS+Severe ED: 11 patients The p value is < 0.0001. Group D: 70-79 years Mild IPSS+No ED: 2 patients Mild IPSS+Mild E: 10 patients Mild IPSS+Moderate ED: 12 patients Mild IPSS+Severe ED: 16 patients Moderate IPSS+No ED: 2 patients Moderate IPSS+Mild ED: 18 patients Moderate IPSS+Moderate ED: 25 patients Moderate IPSS+Severe ED: 18 patients Severe IPSS+Mild ED: 6 patients Severe IPSS+Moderate ED: 13 patients Severe IPSS+Severe ED: 33 patients The p value is 0.0114. Group E : over 80 years Mild IPSS+Mild ED: 1 patient Mild IPSS+Severe ED: 3 patients Moderate IPSS+Mild ED: 1 patient Moderate IPSS+Moderate ED: 1 patient Moderate IPSS+Severe ED: 2 patients Severe IPSS+Moderate ED: 1 patient Severe IPSS+Severe ED: 6 patients The p value is 0.5345, due probably to the few patients in the group.
Conclusions: The erectile dysfunction rate progressively increases with age and is highly correlated with LUTS

Cholecalciferol for prevention of chronic allograft nephropathy, kidney repair, and management of cardiorenal syndrome in vitamin D insufficient kidney transplant recipients

ESC-ID: 1038
Authors: Kharlamov AN, Parrish AN, Ivanova EJ, Gabinsky JL, Veselova VS, Novoselova OS
Country: Russia
University: Urals State Medical Academy, Department: Internal Medicine #3

Background: We need a new strategy with careful management of all the potential contributing factors. This randomized double-blind placebo-controlled study highlights the meaning of vitamin D as a new therapeutic strategy either for cure or prevention of chronic allograft nephropathy (CAN) and cardiorenal syndrome (CRS), or heart and kidney regeneration.
Methods: A total of 90 patients (mean age 58 years, male kidney recipients from non-heart beating donors III with vitamin D deficiency defined as 25(OH)D<40nmol/l) were assigned to the vitamin D treatment group (6800-3600 IU, n=28), vitamin D dietary intake group (1000 IU, n=26), and to the placebo group (n=27). Treatment starts on day 5 kidney Tx. The primary outcome is a CAN degree on day 180 Tx.
Results: CAN was characterized by microvascular and glomerular injury with mean Banff degree 1.22 in vitamin D group as compared to 1.43 and 1.68 in dietary and placebo groups respectively (p<0.05 for all comparisons [FAC]). GFR increased from mean 15.2 to 91.4 mL/ min/ 1.73m2 (p<0.05 FAC). Circulating/ „incorporated" SP+ cells constituted 5.7% of peripheral blood progenitors, renal epithelial cells, and cardiomyocytes before Tx (mean, p<0.05 FAC), and 17.2/ 14.1/ 19.3%, 12.7/ 9.9/ 14.3%, 7.1/ 6.2/6.7% on day 180 in vitamin D, dietary intake, and placebo groups respectively (p<0.05 FAC). Vitamin D stimulated stem-progenitor cells of different origin (true bone-marrow derived, mesenchymal, SP-positive) and differentiation potential. Hypercalcemia as one of the most important side-effects was revealed in 14% vitamin D-treated patients (p<0.001 FAC). More significantly decreased levels of blood pressure (p<0.01) and heart failure (p<0.01) as manifestations of CRS were revealed after the treatment with vitamin D.
Conclusion: Vitamin D high-dose treatment and dietary intake are similar effective for prevention of CAN, renal and cardiac repair, and management of CRS.

The importance of surgical anatomy concepts in the risk decrease of the superior mezenteric artery in case of giant left Wilms tumor at child

ESC-ID: 1189
Authors: Demian A, Dragomir S, Grad D, Retegan M, Viorel D
Country: Romania
University: UMF "Iuliu Hatieganu" Cluj Napoca , Department: General Medicine

Aim: Considering the fact that Wilms is the 5th tumor as frequency at children and that over 40% are diagnosed at large diameter we chose to analyze the importance of surgical anatomy term in the preparation of radical nephrectomy. After AAST-OIS (American Association For The Surgery Of Trauma – Organ Injury Skill) the lesion of superior mesenteric artery are enclosed in group 4 out of 5, next to celiac trunk lesion and infrarenal aorta, injuries that cover over than 6% of the intraoperatory incidents in radical nephrectomy.
Material and methods: The analysis of surgical anatomy implication estimated in comparison with: - learning curve - the enlightening of the ways to avoid superior mezenteric artery injuries by retrospective analysis of intraoperatoric incidents - the limits of preoperatoric investigations in outlining the anatomic distortions in giant Wilms tumor. We analyzed: - The security rate of vasculo-tumaral approach - posterior-transperitoneal approach between Treitz angle and the superior mesenteric vein - left coloparietal detach and posterior mezogastric detach - The levels of risk in injuring the superior mesenteric artery after Fullen: - area1 – primary trunk - area2 - lower duodeno-pancreatic and middle colic artery - area3 – distal of middle colic - area4 – segmentery branches The identification criterias of damaging / arterial stringing of superior mesenteric artery are: - intestinal color and intestinal peristaltic assessments - vascular pulsation and hemorrhagy.
Results: 1. The left coloparietal approach and posterior middle gastric assures the aortic access from the diaphragm to inferior mesenteric artery allowing a correct identification of the left renal artery (superior mezenteric artery is frequently juxtaposed to the renal hilum arousing

confusion with the renal artery). 2. The stringing of superior mezenteric artery can be achieved without majors repercussions in areas 3 and 4 after the first jejunal segmentation. 3. The rapid approach of renal pedicle through the posterior transperitoneal pathway has not provided it`s oncological superiority in comparison with the longer duration by coloparietal approach. 4. The necessity of arterial stringing after prior clipping tracking evaluation criteria of arterial lesions (intestinal and vascular).
Conclusions: We appreciate the utility of a surgical therapeutic plan which involves a good knowledge of a complex anatomy of large blood vassals with a posterior structure hard to approach even in the existence of multiple preoperatory ways of investigation which do not spare the surgeon from unpleasant incidents.

Comparison of efficacy and complications of general and spinal anesthesia in adult patients that are candicated for PCNL

ESC-ID: 1228
Authors: Saberinejad A, Mehrabi S, Akbartabar M
Country: Iran
University: Yasuj university of medicai science , Department: student research comittee

Introduction and aim: percutaneous treatment of choice for renal stones larger than 20-30 milimeters, nephrolithotripsy (PCNL) is the stag horn stones and stones that are multiple or resistant to extra corporeal shock wave lithotripsy. generally pcnl perform under general anesthesia, although complications and coasts of general anesthesia are more than spinal anesthesia. aim of this study is comparison of efficacy and complications of general and spinal anesthesia in adult patients that are condicated for PCNL.
Materials and methods: in this study 110 patients older than 18years old with renal or upper ureteral stones that were condicated for pcnl and refer to urologic clinic from 2007 march to 2010 february randomly assigned in to group by zelen randomization and informed consent form was taken from them. then in first group general anesthesia and performed in standard method and in second group spinal anesthesia was done in sitting position by No 23-25 spinal needle in L4 lumbar inter space with 0/5 percent bupivacain(marcaine) and 0/5 mililiter (25μg) of fentanyl as standard in both group in abscence of special complication after operation patients was transfered to recovery and ward. In 2th post operation day nephrostomy tube was clumped and if there was no urinary leak, fever and flank pain nephrostomy was removed and patients discharged. All data records and analysed by SPSS software and chi square and T student Tests.
Results: demographic characteristics of patients such as age, sex, body weights and hemoglobin were normal in to groups. Mean stones size in group 1,2 were 30/92 ± 10/60 and 32/82 ± 9/83 milimeters respectively (p ≥0/05). Mean operation time from start of operation to holding nephrostomy tube in group 1,2 were respectively 55/64 and 62/41 respectively without significant difference (p=0/099) considering efficacy and success of operation in groups 1,2 were respectively 80 and 72/73 percent free of stone or have residual stones small than 4mm(p=0/37). There were no significant difference between two groups regarding intra operative and post operative complications, post operative fever and 24hours post operative hemoglobins. Need to narcotic drugs in operative day(D0) in groups 1,2 were respectively 12/4 ± 3/1 and 7/8 ± 2/3 mg equivalent morphine sulfate that these difference were significant (p=0/03), also mean coast of anesthetic drugs in groups 1,2 were respectively 23 ± 3/7 and 4/5 ± 1/3 (p = /001) that were significant.
Conclusions: this study shows that spinal anesthesia with combination of fentanyl and marcaine is a safe and high efficient method performing pcnl in adult patients even in stag horn stones. Furthermore need to narcotic drugs and also coasts of drugs and disposable instruments in spinal anesthesia was more less than general anesthesia and it is a low coast method for this operation, although for results it is necessary that more study with big samples in other patients such as supine will be done.

The prognostic significance of red blood cell distribution width in patients with impaired renal function after invasive treatment of acute myocardial infarction

ESC-ID: 1239
Authors: Swoboda R, Francuz P
Country: Poland
University: Medical University of Silesia , Department: Zabrze

Background: Red blood cell distribution width (RDW) is a hematological parameter assessing variability in size of circulating erythrocytes. An increase in RDW is associated with adverse outcome in patients with heart failure, stable coronary artery disease and acute myocardial infarction (AMI). Impaired renal function (IRF) worsens the prognosis in patients with AMI despite invasive treatment.
Aim: To evaluate the impact of RDW on mortality in patients with IRF and AMI treated with percutaneous coronary intervention.
Methods: Single-center study evaluated 607 consecutive AMI-pts treated invasively. Final study population encompassed 215 subjects with IRF defined as the presence of the baseline kidney dysfunction and/or contrast-induced nephropathy development. Patients with IRF were divided with respect to admission RDW terciles into 1st tercile group, RDW <13.8% (n=65, 30,2%); 2nd tercile group, RDW 13.8% - 14.3% (n=80, 37.2%), 3rd tercile group, RDW >=14.4% (n=70, 32.6%). Comparative analyses were performed between each of these 3 groups. Mortality rates were compared at 30-day, 1-year and remote observations. Independent predictors of death were identified with the multivariate Cox-regression model and expressed as hazard ratio (HR) with a 95% confidence interval (CI). Regression model was developed after stepwise backward selection.
Results: Patients from 3rd tercile when compared to subjects from 1st tercile more frequently showed baseline kidney dysfunction (57.1% vs. 38.5%, p<0.05) and lack of Thrombolsis in Myocardial Infarction flow grade 3 after PCI (25.7% vs. 7.7%, p<0.05). Patients from 3rd tercile when compared to 2nd tercile more frequently showed baseline kidney dysfunction (57.1% vs. 38.8%, p<0.05). Remote mortality in tercile 3 was higher than in tercile 1 (27.1% vs. 12.3%, p<0.05). Multivariate analysis performed for total study population revealed following independent risk factors for death: cardiogenic shock on

admission (HR 8.89, CI 95% 8.62 - 9.16), ejection fraction < 35% (HR 2.53 CI 95% 2.26 - 2.80), admission RDW value >=14.4% (HR 2.03 CI 95% 1.78 - 2.28), diabetes mellitus (HR 1.93 CI 95% 1.68 - 2.18), anemia at discharge (HR 1.85 CI 95% 1.59 - 2.11) and incomplete revascularization (HR 1.83 CI 95% 1.55 - 2.11).
Conclusions: Admission RDW >=14.4% is associated with increased remote mortality in patients with impaired renal function and acute myocardial infarction treated invasively. It has been identified as an independent risk factor for death in all AMI patients treated invasively.

Sexual function: A comparison between female renal transplant recipients and hemodialysis patients

ESC-ID: 1296
Authors: Barbati M E, Khazanehdari SH, Zamani M
Country: Iran
University: Shahid Beheshti University , Department: Medical Research Center

Aim: Decreased sexual function is common in end-stage renal disease (ESRD) patients. A few of studies exist concerning the therapy of decreased libido and sexual function in Renal Failure women and the effect of renal transplantation on the patient's sexual function. The aim of the study is to compare the sexual function of kidney transplant recipients and ESRD patients under hemodialysis in female patients.
Material and Methods: In the sample population of this study there were 72 women in the transplant group and 40 women in hemodialysis group. To test the differences in the quantitative variables between these two groups, an independent sample Student's t-test was performed. The x2 test or Fisher exact test was used to compare the sexual intercourse and sexual satisfaction between the study groups. $P \leq 0.05$ was considered significant.
Results: Sexual relationship, sexual function, sexual frequency and sexual fear in the renal transplant patients are significantly better than hemodialysis patients. 25 out of 40 (62.5%) of hemodialysis patients had no sexual intercourse in the 2-week period prior to the commencement of the study, while this proportion in transplantation group was 27 out of 72 (37.5%) patients (p=0.03). According to table 2, sexual intercourse satisfaction was apparently higher in the kidney recipients than that in the hemodialysis patients. 21 patients in transplanted group described their sexual satisfaction as much or very much (29.2%) but in the hemodialysis group this number was 6 (15%) (p=0.03).
Conclusion: This study indicated that female kidney transplant recipients experienced a significantly better sexual relationship compared with the ESRD patients under hemodialysis.

Is it possible to reduce the length of hospital stay for surgically treated patients with urogenital congenital anomalies?

ESC-ID: 1460
Authors: Cvetinovic N, Isakovic A, Gusic N, Miroslav LJ, Djordjevic
Country: Serbia
University: University of Belgrade, School of Medicine , Department: Surgery

Aim: Urogenital congenital anomalies are among the most common congenital anomalies, and also the most frequent pathology in pediatric urology. Health care systems tend to shorten the duration and reduce the costs of hospitalization, and to maintain treatment effectiveness. The aim of our study was to determine the length of stay of surgically treated patients with congenital anomalies and to estimate the possibility of reducing it.
Methods: The study included 351 patients who had been surgically treated at the pediatric urology department of the University Children's Hospital, between 1.1.2008.-31.12.2008. Descriptive statistic methods and statistical methods of deduction were used to analyze the data.
Results: The average length of hospitalization was 7.72 ± 5.36 days. Patients with testicular anomalies had the shortest length of stay (4.24 ± 1.64 days), and patients with abnormalities of the penis and urethra had the longest - 9.29 ± 5.21 days. Patients of doctors who had the shortest length of stay spent 6.28 ± 3.82 days in the hospital, while patients of doctors who had the longest length of stay spent 10.38 ± 5.76 days. Patients with testicular abnormalities had significantly less preoperative stay (2.43 ± 0.68) in comparison to other patients (3.95 ± 3.30 days). Also, they had shortest postoperative stay (2.81 ±1.69 days), while the longest postoperative hospitalization had the patients with penis and urethra abnormalities (6.47 ± 4.61).
Conclusion: Factors influencing the length of hospitalization are method of treatment and the doctor who treated the patient. Modern methods of surgical treatment would allow shortening of hospitalization, the economic savings to the health care system and greater comfort and satisfaction for patients.

Session: Neurology

High prevalence of orthostatic hypotension in vascular and degenerative dementia

ESC-ID: 560
Authors: Traykova M, Stankova T, Mehrabian S, Duron E, Labouree F, Rollot F, Traykov L, Hanon O
Country: Bulgaria
University: Medical University Sofia , Department: Department of Neurology

Background: The prevalence of orthostatic hypotension (OH) in the elderly population ranges from 4% to 33%, depending on comorbidities and the definition of OH. Few studies, to date, have examined the relationship between OH and cognitive decline and their results have been contradictory.

Aim: To determine the relationship between OH and cognitive function in elderly subjects with memory complaints.
Methods: We studied the association between cognitive function and OH in 495 consecutive elderly outpatients attending a memory centre. Blood pressure (BP) was measured with a validated digital electronic monitor (OMRON M6), in a sitting and standing position. We examined cognitive function using a validated comprehensive battery of neuropsychological tests, the cognitive efficiency profile (CEP) assessing the main cognitive areas. Subjects were classified into 4 categories according to their cognitive status: normal cognitive function, mild cognitive impairment (MCI), Alzheimer's disease (AD) or vascular dementia (VaD).
Results: In this population, 76±8 years of age (women 72%), 18% had normal cognitive function, 28% had MCI, 47% AD, and 7% VaD. Hypertension was observed in 74% of patients. OH was present in 14% of subjects (n=69). After adjustment for age, education level, systolic BP, diastolic BP, weight, and antihypertensive drugs, subjects with OH had worse cognitive function than those without OH (CEP score 50±24 vs. 56±22, $p<0.05$). Moreover, a significant relationship was observed between OH and cognitive status (normal cognitive function, MCI, AD, or VaD). OH was present in 22% in VaD subjects, 15% in AD subjects, 12% in MCI subjects and 4% in normal control subjects ($p<0.01$ for overall test).
Conclusion: Our data support previuos studies suggesting that OH could play a role in the pathogenesis of dementia. These results emphasize the necessity of longitudinal studies designed to evaluate the role of OH in the onset of cognitive decline and dementia.

Hyperechogenicity of the substantia nigra (SN) in idiopathic Parkinson's disease (IPS) does not correlate with dopaminergic degeneration as shown by I123-FP-CIT SPECT

ESC-ID: 638
Authors: Schreiner S, Lobsien E, Kupsch A, Plotkin M, Schreiber SJ, Doepp F
Country: Germany
University: Charité Berlin , Department: Neurologie CVK

Objectives: Hyperechogenicity of the SN is found in about 80% of patients with IPS using transcranial sonography (TCS). Most studies suggest that the SN hyperechogenicity remains stable during disease progress and does not correlate with the severity of the dopaminergic deficit. However, recently a strong association between the extension of SN echogenicity and the degree of the nigrostriatal dopaminergic degeneration measured by FP-CIT-SPECT was described. The aim of our study was to investigate the relation of SN echogenicity and disease severity in a larger cohort of IPS patients using a fully automated, investigator-independent analysis of SPECT data.
Methods: In 101 patients (mean age: 66 ± 10 years, mean UPDRS: 19 ± 11) with clinically diagnosed IPS, TCS of the SN (2.5 MHz probe, Siemens Antares) and I123-FP-CIT SPECT (Multispect 3 gamma camera, Siemens; BRASSTM software analysis, HERMES) were performed. SN echogenicity of ≥ 0.18 cm2 (≥ mean + 1 SD of 82 healthy controls with normal distributed SN) was considered pathologic. SN echogenicity was correlated with the striatal and putaminal binding of dopamine transporters.
Results: SN hyperechogenicity was found in 80% of the patients. Mean SN echogenicity was 0.21 ± 0.1 cm2. Reduced putaminal/striatal FP-CIT uptake was found in 90/83%. No correlation was found between the extent of putaminal/striatal FP-CIT uptake and the extent of SN echogenicity (putamen: right $p = 0,75$, left $p = 0,75$; striatum: right $p = 0,67$, left $p = 0,78$, Pearson`s correlation). Similar results were observed regarding the hemisphere contralateral to the clinically more affected side (putamen: $p = 0.21$; striatum: $p = 0.10$).
Conclusion: Our findings support the hypothesis that SN hyperechogenicity is a marker of nigral neurodegeneration, which is independent from the degree of dopaminergic neuronal degeneration.

Elevated levels of chromogranin B in mice with experimental autoimmune encephalomyelitis

ESC-ID: 640
Authors: Hoang HT, Mo M, Ehrlich BE
Country: Germany
University: Yale University , Department: Pharmacology

Chromogranin B (CgB) is a high capacity, low affinity calcium binding protein expressed in hormone storing organelles, the endoplasmic reticulum (ER), and the nucleus. In the ER, CgB acts as both a buffer for calcium and a binding partner for the inositol 1,4,5-trisphosphate receptor (InsP3R), an intracellular calcium channel spanning the ER membrane. The InsP3R is critical for regulating many physiological processes and its activity is modulated by a variety of binding partners. CgB amplifies InP3R mediated calcium release from the ER by increasing channel open probability in the presence of InsP3. Cellular locations expressing high amounts of CgB thus become calcium signaling initiation sites. Although CgB has been implicated in a number of neurological disorders, such as schizophrenia and Alzheimer's disease, little is known about its functional role in the nervous system. Recently, however, the involvement of CgB in another neurological disorder, multiple sclerosis (MS), has been proposed. The hallmarks of MS are inflammation, demyelination and neurodegeneration in the central nervous system. One of the leading causes of permanent disability in MS patients is due to axonal damage. When intra-axonal calcium levels are increased, calcium-dependent proteases are activated, followed by cytoskeletal degradation and the eventual loss of neurons. Due to the involvement of calcium in MS and the altered levels of CgB peptides in neurodegenerative diseases, we investigated the role of CgB in MS. Myelin oligodendrocyte glycoprotein (MOG)-induced Experimental Autoimmune Encephalitis (EAE) mice, a well-studied animal model of MS that reflects both clinical and pathological features of MS, were used. We found that CgB is elevated in EAE mice using both biochemical and immunohistochemical methods. Lysates and slices were generated from the spinal cord and several brain regions, subjected to western blotting and immunohistochemistry, and probed with a number of neuron-specific markers. CgB was elevated 10-fold throughout regions of

the brain and spinal cord, and was expressed solely in neurons, microglia, and T-cells/macrophages. In addition, elevated levels of CgB appear to be correlated with the onset of MOG-induced EAE symptoms and with disease severity. By probing with markers for myelin, we found that obvious lesions - areas of inflammation and demyelination - were correlated with high expression of CgB, whereas CgB expression was sparse or absent in non-pathological areas. This study shows that CgB is elevated in EAE mice as disease severity increases, and that elevation of CgB may have a potential role in the pathogenesis of MS.

Preventive vs. therapeutic antibacterial therapy of post stroke infections in experimental stroke: translating an important clinical issue from bed to benchside

ESC-ID: 734
Authors: Hetze S, Engel O, Meisel A
Country: Germany
University: Charité Universitaetsmedizin Berlin , Department: Department of Neurology

Background: The incidence of severe infections after acute cerebral ischemia is considerably higher than in other internal or neurological diseases. In particular pneumonia is a common complication (7-22%) after stroke and a main cause of death (attributable risk of death 31%) in these patients. In an experimental model of stroke we have shown recently that preventive antibiotic treatment not only prevents infections but also reduces mortality and improves neurological outcome. However in this experimental study we have not modeled the clinical setting, since mice of the control group were not treated with antibiotics at all, independently of whether they developed an infection or not, being in contrast to the stroke treatment guidelines in patients. Here we investigate whether a preventive antibiotic treatment is superior to the current „gold standard“ of treatment of post-stroke infections. Thus, we will compare whether the time point of starting antibiotic treatment influences the outcome as well as immunological parameters after experimental stroke.
Methods: Mice underwent transient middle cerebral artery occlusion (MCAo) with reperfusion after 60 minutes. After MCAo, mice either received preventive antibiotics (Enrofloxacin 10 mg/kg) or placebo. Therapeutic antibiotic treatment was given immediately after confirmation of infection via MRI and the appearance of clinical signs (general health score > 6), typically between day 4 and 5. Reasoned by the lack of an established method to detect pneumonia in living mice we established a new procedure to diagnose pneumonia with magnetic resonance imaging. Mice were anaesthetized, monitored with ECG and respiratory pads for the gating. Subsequent the lung inflammation was analyzed with Image J. To assess the influence of the antibacterial treatments on the resulting neurological outcome we analyzed gait parameters before and after stroke and compared them within the three different treatment groups by using the CatWalk (Noldus, The Netherlands) method. This implied an additional effort to define characteristic stroke induced changes in Gait parameters, and the effect of different animal weights. Infiltration of immune cells into the brain was measured by FACS.
Results: We found good agreement between the gold standard (quantitative bacteriology from lung tissue of mice) and the new technique (MRI) in diagnosis pneumonia according to the modified Bland Altman Plot of comparability. Using MRI we were now able to reliable diagnose pneumonia in living mice. Stroke induced infections were associated with a lower survival rate. Preventive medicated animals showed significant lower lung inflammation suggesting a successful inhibition of bacterial colonization. However, preventive antibiotic treatment resulted in no improvement in survival than treating animals directly after onset of pneumonia. Functionally, the preventive group presented less severe deficits of gait parameters after stroke, whereas the therapeutic group didn't show improvement in comparison to placebo.
Conclusions: Here we show in a mouse model of stroke that an early therapeutic antibiotic treatment based on reliable diagnostic criteria for post-stroke infections improves survival similarly compared to a preventive treatment, however at the cost of a worse neurological outcome compared to the preventive approach. These data support the concept of preventive antibacterial treatment of stroke patients. In a recent clinical phase IIb trial (PANTHERIS) we proofed the concept and demonstrated that preventive anti-infective treatment reduces the frequency of post-stroke infections. Our data demonstrate the preventive anti-infective treatment is a promising therapeutic strategy to improve outcome after stroke, which has to been proven in a phase III trial. In addition our results underline the essential role of a timely antibacterial therapy. Stroke patients might have a great benefit through consequent monitoring of infection parameters, to reduce severe post stroke infections that are leading to a delayed rehabilitation of neurological defects.

The role of astrocytes in an animal model of multiple sclerosis grey matter demyelination

ESC-ID: 876
Authors: Bargiela D
Country: United Kingdom
University: Imperial College London , Department: Medicine

Objectives: We previously described an association between glia limitans damage and cortical grey matter demyelination in human postmortem multiple sclerosis cases. Here we characterise astrocyte changes at the pial surface in a rat model of grey matter demyelination to evaluate the consequence of decreased barrier function in the propagation of meningeal inflammation.
Methods: Rats were immunised with a sub-clinical dose of myelin oligodendrogyte glycoprotein (MOG) followed by injection of pro-inflammatory cytokines (TNF-alpha and IFN-gamma) into the subarachnoid space. Using immunofluorescence labelling of the glia limitans (GFAP) and basal lamina (Laminin) layers on coronal cryosections of the cerebrum, analysis of disruption was carried out using both quantitative and semi-quantitative methods. Leakage of serum protein across a disrupted glia limitans and consequent demyelination and inflammatory activation in the subpial region were further assessed.
Results: A significant early disruption of the glia limi-

tans was present in rats receiving cytokine injections as opposed to non-cytokine controls ($p < 0.05$). Extravasated fibrinogen within the subarachnoid space showed leakage into the parenchyma across sites of glia limitans damage. The number of Iba-1 positive microglia/macrophages within the parenchyma was associated with sites of glia limitans disruption. Extensive demyelination was associated with sites of glia limitans damage and inflammation. Discussion: Our results demonstrate an early disruption in the pial glia limitans barrier and we suggest a cytokine-mediated mechanism of glial retraction as a cause of such damage. Resulting leakage of CSF proteins and subsequent immune cell activation within the parenchyma may contribute to the creation of an inflammatory milieu within the grey matter. This may encourage lesion formation and immune cell infiltration within this region supporting the hypothesis that meningeal inflammation is involved in multiple sclerosis grey matter pathology. Clarification of the roles of astrocytes in multiple sclerosis and their contribution to disease progression deserves further investigation.

Reduced brain-derived neurotrophic factor (BDNF) expression & secretion after treatment with advanced glycation endproducts in brain microvascular endothelial cells

ESC-ID: 944
Authors: Karaca I, Navaratna D, Lo Eng H
Country: Turkey
University: Hacettepe University , Department: School of Medicine

Objective: Diabetes Mellitus(DM) is a well-established independent risk factor for ischemic stroke. However, it is not clear, as to how exactly diabetes confers this elevated risk. The aim of this study is to define the impact of diabetes on neurovascular trophic coupling mechanisms, such as endothelial BDNF mediated trophic support.
Material and Methods: We used AGE-BSA (advanced glycation end products of bovine serum albumin) to mimic diabetes in cell culture. Non-glycated BSA was used as a control for our studies. We studied BDNF expression and secretion by immunocytochemistry and BDNF-ELISA respectively.
Results: After 48 hours of stimulation with AGE-BSA, there was a marked decrease in BDNF expression in AGE-BSA treated endothelial cells as compared to untreated controls. Consistent with these results, the secretion of BDNF into endothelial conditioned media was decreased after AGE-BSA stimulation.
Conclusion: Taken together, our findings suggest that crucial endothelial-neuron trophic coupling pathways may be disrupted in diabetes, and that accrued deficits in vascular neuroprotection may contribute to the increased risk of brain injury in stroke.

Study into the T cell response following amyloid beta 42 immunisation in human alzheimer's disease

ESC-ID: 1002
Authors: Morgan W, Zotova E, Nicoll JA, Boche D
Country: United Kingdom
University: University of Southampton, Department: Division of Clinical Neurosciences, Department of Cellular Pathology, Southampton University Hospitals

Alzheimer's disease (AD) is a neurodegenerative disease associated with cognitive impairment that results from amyloid-beta and tau protein deposits within the brain. An immunisation strategy has been designed to stimulate clearance of amyloid-beta deposits, the aim being to improve cognitive performance. Unfortunately, after animal studies demonstrated removal of amyloid-beta deposits and cognitive improvement, a human clinical trial was terminated because of a meningoencephalitis side effect that is suspected to be T-lymphocyte mediated.
Aim: To investigate whether the meningoencephalitis is T-lymphocyte mediated. To investigate whether pathology modification associated with immunisation is T-lymphocyte driven.
Methods and Materials: CD8 (a marker of CD8(+) T-lymphocytes) immunohistochemistry was conducted on formalin-fixed, paraffin-embedded sections from 28 unimmunised AD brains used as controls and 10 immunised AD cases (Elan Pharmaceutical). One immunised AD case developed the side-effect. CD8(+)T-lymphocytes were quantified and their location (white or grey matter) within each section was recorded.
Results: Analysis shows no significant difference in the number of CD8(+) T-lymphocytes after immunisation. The CD8(+) T-lymphocyte number in our meningoencephalitis case does not exceed that of any control AD case or any immunised AD case unaffected by meningoencephalitis. In control AD cases, grey matter CD8(+) T-lymphocyte number is significantly correlated with amyloid-beta42 load ($r= -0.634$, $P<0.001$) and phosphorylated tau load ($r=0.405$, $P=0.036$). Such correlation with AD key grey matter pathology disappears after immunisation, with grey matter CD8(+) T-lymphocyte number instead being significantly correlated with amyloid-beta found in the vasculature (cerebral amyloid angiopathy) (Amyloid-beta42: $r=0.788$, $P=0.035$; Amyloid-beta40: $r=0.788$, $P=0.035$).
Conclusions: In this study, we have concluded that i) it is unlikely that CD8(+) T-lymphocytes are involved with the side-effects observed following human amyloid-beta42 immunotherapy and ii) although CD8(+) T-lymphocytes could be linked with the pathology of AD, the post-immunisation pathology modification does not appear to be CD8(+) T-lymphocyte driven. Further work is required to establish whether or not CD4(+) T-lymphocytes are involved in either the side-effects or the pathology modification seen after amyloid-beta immunotherapy.

Characterisation of microglial activation in an organotypic hippocampal model of a primary brain tumour.

ESC-ID: 1034
Authors: Powell M, Gatherer M, Johnston D, Nicoll JA, Boche D
University: University of Southhampton , Department: Clinical Neurosciences, Biomedical Imaging Unit, Southampton General

Introduction: Gliomas are group of common primary brain tumours associated with poor prognosis. There has been recent interest in the role that microglia, the cerebral resident macrophages, have in the pathogenesis of this condition. It is known that microglia infiltrate gliomas in significant numbers, however there is controversy as to whether they represent a true anti tumour response mounted by the central nervous system, or whether they are recruited by the tumour to aid its growth. There is increasing evidence for an attenuated immune response by microglia against the glioma. Greater understanding of this interaction may eventually lead to improved therapy for this condition. Recent hippocampal developments in organotypic modelling have allowed closer representation of the in vivo environment than traditional in vitro models. Organotypic modelling provides a model which can be manipulated relatively easily, but retains cellular architecture and function, and thus seem ideally placed to study microglia and their interaction with gliomas.
Objectives: To characterise the C6 glioma infiltration in an organotypic model. To characterise the microglial activation in this model.
Method: Rat hippocampal slices were prepared and 7 days later, fluorescent C6 glioma cells were added. At different time-points (day 1, day 3, day 5 and day 7), the cultures were stopped and the C6 cells infiltration and the level of cell death within the organotypic slice were analysed using a confocal microscope. Sham and control groups were prepared in parallel. CD68 (a phagocytic marker) and MHCII (an antigen-presentation marker) immunohistochemistry were undertaken on fixed slices at identical time points after C6 glioma application. CD68 levels were quantified and histological relationships were characterised for both CD68 and MHC II positive microglia.
Results: The confocal analysis shows significant C6 glioma cell infiltration within the hippocampal slices over time ($p<0.001$). The number of dead cells per unit volume in the organotypic culture was markedly higher in the glioma cultures relative to the Sham cultures, and was also correlated to the depth of glioma infiltration. The CD68 quantification shows a significant increase between the different time points in the C6 group ($p <0.001$) but also when compared with the sham and control groups. The morphological observation of the CD68 staining also shows 2 different microglial populations: macrophage-like morphology and stellate microglia. Histological examination of organotypic slice after glioma addition shows significant CD68 positive microglia at the tumour margin. Microglia migration from the hippocampal slice to within the tumour bulk was also observed. Our preliminary observation of the MHCII expression shows a weaker staining in the C6 group when compared with the Sham group at day 5 and day 7.
Conclusions: In this study, we have reproduced an in vitro model of brain tumour. Using this model, we have evidence for a sub-acute toxic effect exerted by the glioma cells. Concurrently increased microglial phagocytic activity and downregulation of the microglial antigen-presentation was observed, which may contribute to glioma growth and invasion. However further work is needed to characterise the exact microglial contribution to tumour biology.

Analysis of ictal semiology in temporal lobe epilepsy

ESC-ID: 1047
Authors: Stanic D, Ristic A, Sokic D, Vojvodic N, Zovic LJ
Country: Serbia
University: University of Belgrade , Department: Faculty of Medicine, Department of Neurology

Aim: We analysed complete clinical phenomenology (semiology) in chronological order of apperance according to the beginning of seizure registered by EEG.
Subjects and methods: Based on retrospective analysis of 87 patients with drug-resistant epilepsy that underwent video-EEG monitoring, 23 with symtomatic temporal lobe epilepsy were detected. Data from patient's history were collected. The results of high resolution MRI based on protocol for focal epilepsies were grouped by localization and etiology according to neuroradilogical criteria. EEG during seizure was considered according to lateralization and chronological characteristics. Semiological sign was treated as present if it had appeared in one seizure at least. Semiological signs were classified as early (apperance within first 20s) and late(after 20s from seizure beginning registered by EEG).
Results: Epigastric aura appears considerably more frequent in the group of patients with hippocampal sclerosis, as well as oral automatisms and nonversive head deviation. Only oral automatisms and motionless stare are semiological signs with considerably more frequent appearance within first 20s of seizure. Complex partial seisures last considerably longer in patients with hippocampal sclerosis.
Conclusion: Results which show that oral automatisms and motionless stare appeare considerably more frequent early during seizure, as well as signifficant connection of some of those with hippocampal sclerosis, speak for the fact that early semiological signs can be important help to MRI and EEG findings in effort to localize seizure focus.

Glycine receptor alpha 1 is required for glioma growth in vivo

ESC-ID: 1164
Authors: Foerstera B, Eichler SA, Bernert C, Markovic DS, Synowitz M, Kettenmann H, Glass R, Meier JC
Country: Germany
University: Max-Delbrück-Center / FU Berlin , Department: Meier Group / Neurobiology

Gliomas are the major form of brain tumors and have a poor clinical prognosis. Recently, it has been suggested that glioma utilizes Cl- channels and anion transport mechanisms to support the invasion of surrounding tissue by rapid adjustment of their cell volume and shape through Cl- flux. In this study we addressed the question whether glioma cells express glycine-gated Cl- channels

(GlyR) and whether their expression affects glioma growth. We have found that human WHO grade IV glioma and primitive neuroectodermal tumors express the GlyR alpha 1 and alpha 3 subunits. Likewise, the GL261 mouse glioma cell line expresses GlyR alpha 1. Two stable GL261 knock-down lines were generated using GlyR alpha 1 shRNA. These GL261 knock-down lines were inoculated into the caudate-putamen of mice and the survival rate was compared to mice injected with control GL261. The survival time of mice injected with GL261 knock-down lines was significantly prolonged as compared to controls. While 91% of control mice died within 40 days, 59% of mice injected with the knock-down lines survived more than 95 days. Furthermore, in a late state of the disease, protein expression of the Cl- transporter NKCC1 was significantly lower in GlyR alpha 1 knock-down tumor tissue. Taken together with microarray data of the National Cancer Institute, showing a dramatically decreased life expectancy of glioma patients with up-regulated NKCC1 expression, this study demonstrates that transmembrane Cl- flux is an important factor for glioma expansion.

Deficiency in Na,K-ATPase alpha isoforms differentially affects the threshold for spreading depolarization in vitro

ESC-ID: 1286
Authors: Reiffurth C, Alam M, Zahedi-Khorasani M, Dreier JP
Country: Germany
University: Charité - University Medicine Berlin , Department: Center for Stroke Research

The striking neurophysiological phenomenon of spreading depolarization (syn.: spreading depression, abbr.: SD) has been studied extensively for decades in animal models in-vitro and in-vivo and has recently been shown to occur frequently in patients suffering from ischemic stroke, head trauma, and subarachnoid hemorrhage. Whereas SD is considered harmless under normal conditions, it has been reported to augment damage by promoting lesion growth in tissue at risk. Specific inhibition of the Na,K-ATPase by cardiac glycosides is known to promote SD and mutations in the gene encoding the alpha2 isoform of the Na,K-ATPase have been associated with an autosomal-dominant subtype of migraine with aura: Familial Hemiplegic Migraine type 2 (FHM2). It has been hypothesized that SD, the likely neurophysiologic correlate of migraine aura, might be facilitated by a loss of function of a single allele of the gene encoding the alpha2 subunit. To investigate the consequences of a deficiency in Na,K-ATPase alpha isoforms we employed heterozygous knockout mice lacking one copy of the alpha2 subunit (alpha2±) encoding allele. In acute coronal brain slices SD was triggered focally by microinjection of 1 M KCl-solution, by electrical stimulation or by raising the K+ concentration in the bathing solution in a stepwise fashion. We recorded changes in extracellular K+ concentration, the accompanying slow extracellular potential shift, and changes in intrinsic optical signals to assess spatiotemporal patterns. To further investigate whether the observed effects were specific for a reduced amount of the alpha2 isoform, alpha1 and alpha3 heterozygous (alpha1± and alpha3±) mice were included in this study. We found a significantly lowered (P<0.001) threshold concentration for K+ to trigger SD in alpha2± mice compared to wild-type mice. This fact was reflected by a 22 % shortening of the wash-in time needed to induce SD. No significant reduction in threshold concentration was found in alpha1± or alpha3± mice compared to their wild-type littermates indicating that the observed effect in the alpha2 group is specific for this isoform. These results support the notion that different catalytic Na,K-ATPase alpha isoforms have distinct functional properties and substantiates the hypothesis that functional haploinsuffiency may underlie the increased susceptibility to SD in FHM2.

Session: Neurology / Psychiatry POSTER

Stigmatization of persons who visit psychiatrist - comparation between medical and non-medical students

ESC-ID: 581
Authors: Zaric N, Zarkovic B, Stojiljkovic D, Maric N
Country: Serbia
University: Belgrade , Department: Faculty of Medicine

Introduction: Stigmatization of persons who visit psychiatrist is widespread not only among general public, but sometimes among healthcare professionals, too.
Aim: The aim of the present study was to compare the tendencies of medical and non-medical students to stigmatize a person who visits psychiatrist.
Methods and materials: The study was designed as a randomized cluster experiment. The subjects were students of medicine (II and VI year), law (IV year) and philology (I-IV year) at the University of Belgrade. The instruments of the study included Sociodemographic and Academic Achievement Questionnaire, Rosenberg's Self esteem Scale and a Questionnaire that included a vignette presenting a case of a young, mentally healthy, but shy person, who has been attached a „psychiatric label".
Results: The study included 805 subjects, 525 of which were students of medicine (68.3% female, age 23.1 ± 2.8, average grade 8.2 ± 0.9), 126 students of philology (82.5% female, age 21.6 ± 2.9, average grade 7.8 ± 0.7) and 154 students of law (64.9% female, age 22.7 ± 1.0, average grade 7.9 ± 0.8).The difference in self-esteem was not evident between students from different schools after controlling for sociodemographic variables ($F(2,704) = 0,507$, $p = 0,602$). Regarding the stigmatization, medical students stigmatized significantly more than students of philology ($t = 2.76$, $df = 322$, $p = 0.018$). The level of stigmatization was not different between students of medicine and law. However, second year medical students had comparable levels of stigmatization to those studying philology and law, but medical students at their final year of studies had significantly higher tendency to stigmatize persons who visit psychiatrist ($F(1,279) = 17.26$, $p<0.001$).
Conclusions: It is crucial to address students' stigmatizing beliefs which are evident from our study. The anti-stigma activities should be directed to healthcare students, since education and believes that future physicians

gain greatly affect health, awareness and attitudes of the general public.

Genetic and phenotypic study of patients with DYT 1 dystonia

ESC-ID: 810
Authors: Stankovic I, Kostic V
Country: Serbia
University: University of Belgrade, Department: Institute of Neurology, CCS, Belgrade

Aim: DYT 1 mutation is the three base pair GAG deletion on human chromosome 9q34 and is identified as a cause of idiopathic torsion dystonia. The phenotypic expression of this mutation is associated with early limb onset and generalization to other body parts within next few years.(1-4) The aim of the study was to analyze prevalence and phenotypic expression of DYT 1 mutation in patients with different forms of dystonia.
Material and Methods: This retrospective study was carried out on 93 patients with different forms of dystonia. The PCR method was used for DNA amplification. The obtained product of PCR reaction was analyzed using enzyme digestion method in order to identify GAG deletion.
Results: The mean age of onset of all patients was 30.0 ± 16.5 years. Ten DYT 1 positive patients were found (12.1%). DYT 1 mutation carriers (18.9 ± 8.8 years) were significantly younger than non-carriers (31.2 ± 16.7 years) ($p = 0.044$). Limb onset dystonia was more often in patients younger than 26 years (69.4%) than in patients older than 26 years (24.5%) ($p = 0.001$). In the group of younger than 26 years, 7 (19.4%) DYT 1 positive patients were identified, while only 2 (3.8%) DYT 1 positive patients were identified in the group over age of 26 ($p=0.017$). There were 25 (27.8%) DYT 1 positive patients in the group younger than 26 with limb onset, while only 3 (4.6%) DYT 1 carriers were found in the group older than 26 years with limb onset form of dystonia ($p = 0.002$).
Conclusions: The frequency of DYT 1 mutation in the researched group of patients was 12.1%. In most cases of patients with the limb onset, and also patients who were DYT 1 carriers, the first symptom of the disease appeared before age of 26. Among DYT 1 positive patients with the limb onset, there were significantly more patients younger than 26 years.

The clinical and epidemiologocal aspects of gerontopsychiatric disorders in armenia

ESC-ID: 881
Authors: Tataryan K
Country: Armenia
University: Yerevan State Medical University after Heratsi , Department: Departmen of Psychiatry

The study presents the clinical and epidemiological aspects of pre-senile and senile mental disorders in Armenia. Relevant issues in the field of gerontopsychiatry are presented and analyzed, recommendations have been made and justified on an organizational level The study is based on an analysis of data from the case histories over the past ten years of 224 elderly patients hospitalized at the Nork Republican Center for Mental Health, of data over the past ten years from the out-patient cards of 289 elderly patients who were examined and received treatment at the Nor Arabkir Health Center as well as on the results of examinations of the mental state of 45 residents at the Nork elderly home. Statistical analysis was conducted and Student's test for significance was used. Based on the epidemiological and nosological structure of mental disorders, it was revealed that 224 patients received in-patient treatment between 1995 and 2004, the majority of whom (57.1%) were aged 60-65 years; women were predominant (59.4%) in all age groups. In the given time period, 289 patients sought out-patient treatment. The majority (57.1%) here also consisted of the 60-65 year age group and women. A comparison of socio-demographic indicators (living conditions, marital status, education, source of income and so on) showed that these factors were largely similar in the in-patient and out-patient groups. The exceptions were the indicator for seeking medical attention, which was 1.3 times higher in the out-patient group as well as the indicator for the presence of somatic disease, with such diseases detected 2.7 times more frequently in the out-patient cases than with hospitalized patients. A study of the gerontopsychiatric structure of diseases in these patients showed that the diagnosis in the in-patient cases consisted largely of psychotic disorders and dementia, while in the out-patient cases non-psychotic disorders dominated, with the exception of senile dementia (28%). A study was also conducted of the cognitive function of residents at the Nork elderly home, which constitute a group with high risk. According to the results, 29% of the residents had mild cognitive disturbances, which was a condition between age-related changes and dementia, with a high probability of the development of dementia within the following 3-5 years. Prophylactic measures at this stage would prevent the rapid development of dementia. The cognitive functions of patients were tested both through individual interviews and through the use of the mini-mental state examination (MMSE). Based on the results obtained, a "risk group" for the development of dementia in elderly patients was distinguished. The need for prophylactic measures was established. Taking into consideration the fact that Armenia does not have a gerontopsychiatric service, the need was established for the organization of such a service and the importance within it of primary care was emphasized.

Protective role of agmatine on oxidative and nitrossative stress ina brain rats with experimentally autoimmune encephalomielythis

ESC-ID: 1102
Authors: Zabar K
Country: Serbia
University: Medical University of Nis, Department: Department of Biochemistry

Introduction: Experimental autoimmune encephalomyelitis is inflammatory demyelinating CNS disease
The Aim: Investigate of exogenous agmatine influence on NO production and concetration of MDA,GSH, SOD activity in brain of EAE rats
Material and methods: EAE was induced by subcutaneous injection of myelin basic protein (MBP 50 micro g per animal).Wistar rats were divided into five groups:I group-(C) treated by 0.9% rastvor NaCl (i.p.) during experiment

course,II group–(EAE),III group–(CFA)-CFA (0.2 ml subcutaneously), IV group–(EAE+Agm) treated by agmatine (75 mg/kg bw i.p.) upon EAE and V group–(Agm) received only agmatine in the same dose.The animals were treated every day during experiment–from day 0 to 15 and sacrificed on day 16 from MBP application. MDA, GSH, NO2 + NO3 concentrations and SOD activity in cerebellum homogenate of EAE rats were determined

Results: Increased MDA concentration (26.34 ± 6.49 nmol/mg prot.;p<0.001) and decreased GSH level (12.36 ± 2.59nmol/mg prot.;p<0.001)and SOD activity (0.59 ± 0.09U/mg prot.; p<0.001) in cerebellum homo genate of EAE rats related to control values (12.89 ± 3.56;15.48 ± 3.51; 0.94 ± 0,14), prove the existance of oxidative stress. The treatment of EAE animals with agmatine decreased MDA concentration and increased levels of GSH and SOD acitivity.NO2+NO3 concentration in EAE rat brain was increased (348.34 ± 30.49 nmol/mg prot.; p<0.001) compared to control values (198,89 ± 26,56). Agmatine treatment diminishes NO2+NO3 concentration in EAE animals.

Conclusion: Oxidative and nitrosative stress is the part of inflammatory response to EAE in rats. These changes are successfully supressed by agmatine application, which could be the the new aspect of the mechanisms underlying the neuroprotective effects of agmatine.

A novel psychophysiological mechanism of the effect of alcohol use on academic performance

ESC-ID: 1191
Authors: Welcome MO, Pereverzev VA, Pereverzeva EV
Country: Belarus
University: Belarusian State Medical University , Department: Normal Physiology

Background: Regardless of the enormous epidemiological data on students' drinking behaviors, the fact that alcohol use reduces Academic Performance, AP remains disputable. Many factors like stress, cognitive abilities, competency in blood glucose control might determine the AP level. The functional activity of the central nervous system correlates with intensiveness of brain glucose metabolism. Next to the nervous system, the liver is the main target organ of the toxic effects of ethanol. The liver plays a central role in maintenance of blood glucose homeostasis. It might be assumed that intensive mental activities under maximum stressed condition, even in a period of fasting, can cause hypoglycemia or even hyperglycemia as a result of the increase in the energy support for brain functions, and this might allow to finding some peculiarities in blood glucose homeostasis control among alcohol users.

Aim: To test a model of students' alcohol use based on glucose homeostasis control under intensive mental activities that might define the pathogenetic mechanisms of alcohol use on AP of students.

Methods: Participants (medical students) were administered standardized questionnaires (AUDIT, STAI, AP questionnaires etc), and assigned special tasks in three phases and took 6.5 hours on fasting. The tasks involved measurement of Visual Productivity Coefficient, VPC and Intellectual Capacity, IC on visual, auditory memory, and attention tests using psychophysiological tasks. Blood glucose sampling was done at 2 hours intervals.

Results: Disturbances in cognitive functions, precisely a decrease in the effectiveness of active attention and a faster development of fatigue after 4-6 hours of mental work in drinkers, compared to abstainers was statistically proven. The state anxiety level among drinkers increased by about 10% immediately after 2hrs of intensive mental activities (p<0.05), while increase in the trait anxiety was noted only after the 4th hr of work (p<0.05). Anxiety level among abstainers remained generally low in all phases of the experiment (p<0.05). The effectiveness to sit for examinations was significantly reduced among drinkers by 11% (p<0.05), compared to the abstainers. Alcohol users had significantly lower glucose level after 4th-6th hours, compared to their initial level, as well as to the values of the abstainers (p<0.01). Increase in VPC by +0.88 ± 0.31 bytes/sec (p<0.05) was noted only among the abstainers after the third phase of the experiment. The IC on various tasks correlated with the blood glucose level in the 2nd-3rd phases of the experiment (p = +0.75, p<0.01). Alcohol users had 13 in 40 times higher error commission rate in various tasks than the abstainers (p<0.001). Statistical analysis showed negative correlation between blood glucose level and total number of errors committed during the 2nd-3rd phases of work (p = 0.9, p<0.001).

Conclusions: The model presented in this study defines the pathogenetic mechanisms of alcohol use on academic performance of students. The reduced AP of students who use alcohol might be related to the incompetency in blood glucose regulation, which is accompanied by low cognitive functions. The procedures used in this study could well serve as a model and a new method for early detection of alcohol-related problems.

Psychiatric comorbidities in patients with pemphigus: an issue to be considered.

ESC-ID: 1196
Authors: Arbabi M, Mahdanian A, Ghodsi Z, Noormohammdi N, Shalileh K, Chams Ch,
Country: Iran
University: Tehran University of Medical Sciences, Department: Psychiatry

Purpose: There exists a high prevalence of psychiatric disorders in dermatological patients. However, investigators have evaluated psychiatric aspects of the patients suffering from skin diseases, there are rare studies concerning mental health in pemphigus patients. Our objective was to evaluate mental health status and quality of life of newly diagnosed pemphigus patients.

Methods: Between April 2007 and June 2008, all newly-diagnosed pemphigus patients attending the outpatient clinic of a dermatological hospital were given a questionnaire comprising the GHQ-28 and DLQI to fill out.

Results: Out of 283 patients, 212 complete forms were returned. The bimodal score of GHQ ranged from 0 to 26 (Mean=9.4) and the Likert score of GHQ ranged from 6 to 68 (Mean=31.9). The DLQI score ranged between 0 and 30 (Mean of 13.8). A total of 157 patients (73.7%) were yielded to be possible cases of mental disorder considering GHQ-28 bimodal scores. Significant correlation between the DLQI score and bimodal and Likert scoring of GHQ-28 was detected.

Conclusions: Our study has depicted high prevalence of psychiatric co-morbidity in pemphigus patients. It underlines the fact that physicians, who are in charge of care for these patients, are in an exceptional position to distinguish the psychiatric co-morbidity and to take appropriate measures.

CRP as a prognostic factor in acute ischemic stroke

ESC-ID: 1240
Authors: Vuksanovic M, Matkovic M, Jovanovic D
Country: Serbia
University: Faculty of Medicine,University of Belgrade , Department: Faculty of Medicine

Aim: The aim of our study was to evaluate the significance of inflammation in the early phase of stroke by determinating the association between the CRP value and neurological deficit, etiology, early functional outcome and future vascular events in one month period after stroke. Material and methods: Our study included 48 patients with ischemic stroke who were admitted within 24 hours after the onset of symptoms. They were divided into two groups, with CRP values < 8 mg/l (23 patients) and with CRP values > 8 mg/l (25 patients). We compared neurological deficit, etiology,risc factors, functional outcome, mortality and future vascular events between the patients with normal and elevated CRP values.For the assessment of stroke severity we used National Institute of Health Stroke Scale (NIHSS). NIHSS is a measuring system consisted of 13 parts that integrates all components of neurological exam (consciousness, cranial nerves, motoric, sensorial and cerebellar deficit, speech disorders and neglect).Stroke severity, expressed by this growing scale is divided into three groups: minor neurological deficit (NIHSS ¡Ü 7), moderate neurological deficit (NIHSS 7 to 13) and severe neurological deficit (NIHSS > 13). Functional outcome of stroke was expressed with Modified rankin Scale (mRS) who was marked on hospital discharge. MRS score from 0 to 1 indicates that patient has no or minimal neurological deficit, a score of 2 is a patient with a deficit, but which is independent in everyday activities. In the group with a score of 3 to 5 are patients who require others' help and have moderate to severe neurological deficit while patients with fatal outcome are given a score of 6. A blood sampe was taken from all patients on admission for CRP value analysis and the time of stroke onset has been recorded. All patients who had previous infection or body temperature over 37I0;C at the time of admission were excluded from the study.
Results: Stenosis of large blood vessels has proved to be the most common cause of AIMU both in the group with normal CRP values (69.6%) and in the group with elevated CRP values (56%). By comparison of NIHSS scores on admission we found that patients with elevated CRP levels have more severe neurological deficit (p<0.05). Good functional outcome (Modified Rankin Scale on discharge <1) had 18 (78,3%) patients in group with normal CRP values and 8 (32%) patients in group with elevated CRP values, which is statistically highly significant (p<0,01).
Conclusions: Elevated CRP value in the early phase of ischemic stroke is associated with higher neurological deficit and is an independent prognostic factor of early functional outcome. However, further studies with a larger number of patients and longer following period are required to justify its clinical use.

Serum uric acid concentration in multiple sclerosis

ESC-ID: 1310
Authors: Przybek J, Chorazka K, Podlecka-Pietowska A
Country: Poland
University: Medical University of Warsaw , Department: Neurology

Introduction: Multiple sclerosis (MS) is a chronic inflammatory disease of the central nervous system (CNS). Uric acid (UA) is the final product of purine metabolism in humans. UA was proved to be a strong peroxynitrite scavenger. Peroxynitrite was hypothesized to be involved in the pathogenesis of MS due to its various neurotoxic effects. The lower level of UA can lead to inordinate inflammation. Presumably, this state may be characteristic for MS patients.
Aim of the study: The main purpose of this analysis was to verify the hypothesis on lower serum levels of uric acid in MS patients as compared with controls. In addition, we aimed to study the correlations between UA concentration and few characteristics such as age, gender, MS duration, EDSS, DEDSS and immunomodulating therapy.
Material and methods: This prospective study involved 80 MS patients (54 females and 26 males, aged: 17-65) and 53 controls with non-inflammatory neurological diseases (excluding vascular disorders). We analyzed serum uric acid concentrations and correlated them with demographic, clinical and other biochemical characteristics of MS patients.
Results: Multiple sclerosis patients present significantly lower serum uric acid concentration in comparison to control group (mean 4,26 vs 4,93, p=0.0092). Within whole MS group the study did not review strong statistical relation of MS duration and serum UA concentration (p pearson < 0,1468, p spearman < 0,0924). However, a tendency showing that patients who are suffering from this disorder for a longer time have lower serum UA concentration. Moreover, the correlation between disease duration and UA concentration in a subgroup of patients who did not take mitoxantrone (p < 0,0321) was found. Results of links between serum UA, EDSS and DEDSS are puzzling (p= 0,0528, p= 0,916 respectively). There were no correlations concerning: age, duration of MS, IFN-b treatment, number of relapses in last 2 years, MS subtype and steroids therapy.
Conclusion: Our study indicates a reduced serum UA level in patients with MS. Although the accurate mechanism of UA involvement in MS pathogenesis remains unknown, it seems that serum UA level might be useful as a biomarker in multiple sclerosis.

Botulinum toxin treatment of head tremor

ESC-ID: 1336
Authors: Radeka T
Country: Serbia
University: University of Belgrade , Department: Institute of neurology

Introduction: Essential tremor, likewise cervical dystonia, is sometimes defined exclusively by head tremor. Head tremor is usually resistant to oral medications. However, botulinum toxin is proved as an efficient therapy of dystonic disease.

Aim: The aim of this study was to examine botulinum toxin A efficiency in head tremor therapy.
Material and methods: 15 patients with clinical diagnosis of head tremor, age 27-75, were injected bilaterally into m. splenius capitis with botulinum toxin A. Tremor was clinically rated and quantitatively assessed with triaxial accelerometric system, prior to and two weeks after the treatment. Spectral tremor analysis was performed using tremor analysis software (Viking Select Master 8.1), obtaining data of dominant frequency and area under the curve (AUC) i.e. total power. Both subjects and examiner evaluated global improvement using Patients Global Assessment (PGA) scale on follow-up visit. All collected data were subsequently statistically assessed.
Results: In this study, seven patients were with essential tremor and eight patients were with dystonic head tremor. Clinical ratings showed statistically significant decrease in head tremor severity after the treatment with botulinum toxin A. Dominant frequency and AUC didn't show any significant changes after the botulinum toxin A injections; however, the AUC median value was decreased with all of the constitutive points more grouped around it. On the PGA rating scale 11 patients confirmed subjective improvement. Our data also suggest that total power median value was decreasing consistently as the patients global improvement was increasing in scaled groups of subjective responses.
Conclusions: Our study implies that local injections of botulinum toxin A may be of a potential therapeutical use in head tremor therapy and useful in cases where other medications have failed to benefit.

Spectrum of the prevalence rate and risk factors of peripheral neuropathy in Type 2 diabetes in Stavropol , Russia

ESC-ID: 1418
Authors: Mathur R, Kapoor R
Country: India
University: Stavropol State Medical Academy , Department: Neurology

Introduction: Peripheral neuropathy constitute an important group of disorders in clinical practice , but establishment of the aetiological diagnosis is often difficult. Diabetic neuropathy is commonest variety of neuropathy in entire world, So it is very important to find the co-relation between the diabetes type 2 and peripheral neuropathy.
Aim: To study the prevalence rate of peripheral neuropathy (PN) and associated risk factors: age, sex, duration of diabetes, history of smoking, alcohol, family history etc in diabetes type 2 in Stavropol , Russia.
Materials and Methods: 395 (160 Men and 235 Women) randomly selected Type 2 diabetic patients of Stavropol, Russia were examined. Ankel Brachial Index was examined by calculating brachial and ankle blood pressure by Sphygmomanometer and stethoscope to predict the severity of peripheral arterial disease (PAD). Statistical analysis was done by Binary Logistic Regression Model for the risk factors with respect to PN. Monofilament 10gm test and biothesiometer was used to assess vibratory sensation.
Results: The prevalence of PN was 70.5% . Peripheral neuropathy was associated with age, proteinuria, and duration of diabetes, insulin-treatment. Using a stepwise binary logistic regression model which is used to predict a variable from a set of predictor variables ,we found that age, duration of diabetes and proteinuria were significant autarchic predictors of PN.
Conclusions: Peripheral neuropathy is a common complication of diabetes mellitus in Russia. Russian population has higher cases of peripheral neuropathy than that reported in India and Other Asian countries. As PN is a presage for diabetic foot ulcers , so grading the risk helps the individuals and the health professionals to take appropriate measures without being too relaxed or too strict. Monofilament test and Biothesiometer , non invasive test correlates well with Vibration Perception threshold used in diagnosis of PN. Since PN poses a precarious menace to diabetic patients of Russia so early and comprehensive neurological investigations for PN in patients with diabetes are assured.

Attention-deficit/hyperactivity disorder – Prevalence of symptoms in lower elementary school childern in Serbia

ESC-ID: 1433
Authors: Jovicic M, Jovanovic S, Teovanovic P
Country: Serbia
University: School of Medicine, Univerity of Belgrade, Serbia, Department: Psychiatry

Introduction: Attention-deficit/Hyperactivity Disorder is the most common neurobehavioral disorder in childhood. It is characterised by symptoms of inattention, impulsivity and hyperactivity that can vary in intensity. The world prevalence of ADHD in school children is 1-20%, and male-female ratio is 3:1. However, there are no studies concerning the prevalence of ADHD in Serbia.
Aim: To determine prevalence, age and sex distribution of ADHD symptoms on a sample of school children from 3 elementary schools in Serbia, and to establish possible differences in these parameters between children in the capital city and in a small town.
Material and Methods: Our study included 376 respondents from first to fourth grade from 2 elementary schools in center Belgrade and 1 school in Arilje. The study was conducted using IOWA Conners rating scale that was filled by teachers for every child in their class.
Results: Score equal or above 15 was present in 8,51% (n=32) of children and male-female ratio was 2,55:1. Score equal or above 20 was present in 3,72% (n=14) of children, and male-female ratio regarding the greater score, i.e. more expressed symptoms was 13:1. There was no statisticaly significant difference in the prevalence of ADHD symptoms between Belgrade and Arilje, nor was there a significant difference in symptom distribution between the four grades in the mentioned schools.
Conclusion: The results of our study suggest that symptoms of ADHD are significantly present in Serbia, and that it is of great importance to educate teachers and parents to recognise ADHD and to actively participate in the therapeutical process of a child with this disorder.

Prevalence of depressive symptoms in patients with systemic lupus erythematosus

ESC-ID: 1448
Authors: Zakeri Z, Narouie B, Moeini-aghtaei P, Hafani H, Mladkova N, Ghasemi-rad M, Taheri H, Jahrighi B, Dehghan M
Country: Iran
University: Urmia university of medical sciences , Department: student research committee

Aim: Psychiatric disorders including depression represent clinical manifestation of systemic lupus erythematosus (SLE).. Recognition of depression in SLE patients is of utmost importance, since it is treatable and can be of fatal consequences if unrecognized. This study was conducted to determine the prevalence of depressive symptoms in SLE patients in terms of age, gender, disease duration and severity, and duration of steroid treatment in SLE patients.
Methods: 85 SLE patients (77 females, 8 males) with verified SLE diagnosis completed Beck's depression inventory, a self-reported measure of depression. Clinical data on disease and treatment were obtained from patient files. Data were analyzed by chi-square test and the severity of depression according to Beck's inventory was determined in patients.
Results: Totally, 60% of patients achieved schores indicating depression. The most common depressive symptoms in participants were fatigue and weakness (88.2%), irritability (82.3%), sadness (77.6%) and somatic preoccupation (76.4%), while the least common symptoms were weight loss (34.1%), low level of energy (28.2%) and suicide ideation (10.5%). Meanwhile, there was a significant difference between the disease activity and the severity of depression (p=0.0001).
Conclusion: Our findings show higher prevalence of depression in our sample in comparison to previous studies,, suggesting that the prevalence depressive symptoms and depression varies across different populations. This may be related to multiple factors including ethnicity, age, cultural background and disease course of individual patients.

Session: Neurology – Poster

Chitooligosaccharide protects PC12 cells from oxidative cell injury: the role of mitogen activated protein kinases and heat shock proteins

ESC-ID: 477
Authors: Joodi G, Mahdavi SA
Country: Iran
University: Tehran University of Medical Sciences , Department: Medicine

Aim: Oxidative stress induced cell damage is considered to play an important role in a variety of neurodegenerative diseases including Alzheimer's diseases. Therefore, different compounds with antioxidant characteristics have been drawing attention as a reasonable choice in treating these diseases. In this study we investigated the possible protective effect of Chitooligosaccharide, an antioxidant oligosaccharide, on Hydrogen peroxide-induced cell injury.
Methods and Materials: Using NGF-differentiated rat PC12 adrenal pheochromocytoma cells, the levels of Caspase-3, p38 Mitogen Activated Protein Kinase (p38MAPK),C-jun N-terminal Kinase (JNK), Extracellular signal-regulated Kinase (ERK), NF-E2-Related Factor 2 (Nrf2),Heat Shock Protein 70(HSP70), Heat Shock Protein 90 (HSP90), intracellular reactive oxygen species (ROS) and ionized calcium (Ca2+) were determined after exposure to H2O2 in the presence and/or absence of Chitooligosaccharide.
Results: Chitooligosaccharide protected PC12 cells against H2O2 insult. H2O2 exposure led to apoptotic changes in PC12 cells which were associated with increased ROS generation and intracellular Ca2+. Pretreatment with different concentrations of Chitooligosaccharide protected cells from H2O2-induced apoptosis as determined by MTT. Intracellular generation of ROS and Ca2+ was also diminished upon treatment with Chitooligosaccharide.In order to identify the underlying mechanism through which Chitooligosaccharide exerts its protective effect, we measured levels of different MAPKs. Chitooligosaccharide attenuated the H2O2-induced phosphorylation of P38, JNK and ERK. It also increased the Nrf2 nuclear protein level. When activated, Nrf2 translocates into the nucleus where it binds to the Antioxidant Response Element(ARE) present in the promoter regions of many antioxidant genes, resulting in increased cell defense against oxidative stress. We further show that Chitooligosacchride induced HSP70 activation but it inhibited activation of HSP90.
Conclusions: Our results indicate that Chitooligosaccharide can protect PC12 cells against oxidative stress through regulation of MAPKs and HSPs.

Effect of GABA-B receptor agonist SKF97541 on hippocampal epileptic afterdischarges

ESC-ID: 480
Authors: Fabera P
Country: Czech
University: Charles University , Department: 1st Faculty of Medicine

Rationale: Activation of GABA-B receptors led to longer inhibitory postsynaptic potentials than activation of GABA-A receptors. Therefore GABA-B receptors may be a target for anticonvulsant therapy. SKF97541 used in our experiments is GABA-B receptor agonist tenfold more active than baclofen.
Methods: Adult male rats of the Wistar strain are bred under standard conditions (12/12 h light/dark period, temperature 22oC, humidity 50-60%). Animals with body weight 300-350 g underwent surgery under isoflurane anesthesia. Stimulation electrodes were implanted stereotaxically into right dorsal hippocampus, registration electrodes into left hippocampus and right sensorimotor cortex. One week after surgery threshold intensity for elicitation of hippocampal afterdischarges (ADs) was found. Biphasic 1-ms pulses were applied for 2 s at 60-Hz frequency. Stimulation series were applied six times with 10-min interval, all animals were exposed to three experiments, interval between them was at least three days.

SKF97541 (in a dose of 0.1 or 1 mg/kg) or saline was administered intraperitoneally 5 min after the end of the first AD. EEG and behavior of rats was registered before, during and at least 2 min after each stimulation.
Results: First stimulation always induced an AD, repeated stimulation frequently failed. There was no difference in the incidence of ADs between experimental and control rats. Duration of ADs was not significantly changed by either dose of SKF97541 in spite of a marked myorelaxant effect of the higher dose of SKF97541.
Conclusions: GABA-B receptor agonist SKF97541 did not significantly influence hippocampal epileptic ADs. It is in contrast to our older findings with cortical ADs which are suppressed by SKF97541. Our data indicate that GABA-B receptors have a different role in these two brain structures.

Transcranial parenchymal sonography in amyotrophic lateral sclerosis

ESC-ID: 754
Authors: Kuzmanovic A, Velimirovic M, Ukic S
Country: Serbia
University: University of Belgrade , Department: Neurology

Background: Modern ultrasound systems allow high resolution transcranial sonography (TCS) of the brain structures. There is accumulating evidence that amyotrophic lateral sclerosis (ALS) is a multisystem degenerative disease, raising the question whether some symptoms are of extrapyramidal origin. TCS is widely used for diagnosis and differential diagnosis of Parkinson's disease (PD). Enlargement of the ehogenic signal (hyperechogenicity) of the supstantia nigra (SN) has been reported as a highly characteristic findings in idiopathic PD. This is the first study in witch TCS is used to assess brainstem and subcortical brain structures in ALS. Objective: To investigate possible degeneration of basal ganglia in sporadic ALS (SALS) patients with TCS, and its clinical correlates.
Method: The study comprised 16 nondemented patients with SALS and 17 age-matched controls. For TCS examination a colour-coded, phased array ultrasound system equipped with 2,5 MHz transduser was used (ALOK, Alpha 10, Japan). The examination was performed through a preauricular acoustic window, with a penetration depth of 16cm and dynamic range of 45-50dB. The Amyotrophic Lateral Sclerosis Functional Rating Scale (ALSFRS-R) was an instrument for evaluation of the functional status of patients with ALS.
Results: Unilateral SN hyperechogenity identified in 3 out of 16 (18,7%) examined ALS patients, which was marked in 2 (12,5%) and moderate in 1 (5,7%) patient. Unilateral SN marked hyperechogenity was found in 1 out of 17, (5,9%) healthy patients. Mean SN echogenity was not significantly different between groups. There was no correlation between mean SN echogenity and clinical parameters in examined ALS patients. No ventricular enlargements were found notified in our study.
Conclusion: Our pilot study did not show significant impairment in SN in SALS patients examined with TCS.

Erythropoietin for acute multiple sclerosis (ERAM study): To study the safety, tolerability and efficacy of treatment with erythropoietin in patients with optic neuritis as a first demyelization event, initial report

ESC-ID: 807
Authors: Mardani S, Borhanihaghighi A, Ghodsi M, Razeghinezhad M
Country: Iran
University: Shiraz University of Medical Sciences , Department: Neurology

Background: Multiple sclerosis (MS) is a leading cause of disability in young age people. Pathologically it is characterized by multifocal areas of demyelization and neuronal degeneration. Optic neuritis, an acute inflammatory disorder of the optic nerve is also known as clinically isolated syndrome which could be a silent indicator of progress multiple sclerosis in the future. Erythropoietin is a cytokines which has pleiotropic functionality in human body. Tissue injury, local inflammation, hypoxia and metabolic stress induce the synthesis of hypoxia inducible factor (HIF) which increases production of EPO locally which could act as a multifunctional protective molecule result in decrease tissue damage by inhibition of apoptosis, reduction of inflammatory cytokines and product neuroprotection in brain. Objective: To study the safety and tolerability of combined therapy with intravenous methylprednisolone and high dose recombinant human erythropoietin as a neuroprotective agent in optic neuritis patients as a first demyelization event.
Material and Methods: 10 patients (18 -35 years old) with first episode of acute attack of optic neuritis, lasting for >24hours who have at least 2 clinically silent lesions on brain MRI were included. The study performed in case and control groups (Two 5-patient groups which were allocated randomly from 10 included patients). The treatment regimen comprised 1000mg/day intravenous Methylprednisolon + 2000 units/day of intravenous recombinant human erythropoietin in case group in a 5 days period. And 1000mg/day intravenous Methylprednisolon +200ml of sodium chloride solution in control group in a 5 days period. Probable adverse effects of Erythropoietin and tolerability of patients with the mentioned protocol were studied during one year by means of accurate observation and physical examination, laboratory tests (include complete blood count, blood sugar, and liver function test) and multiple brains MRI in defined intervals.
Results: None of the case group patients (n=0) revealed any of monitored adverse effects during treatment in the 5 days period. No abnormal changes in laboratory findings and blood pressure of patients were detected during the 1 year period of follow up in case and control group (n=0). The rate of new attacks was significantly lower in case group (p-value=0.048).
Conclusion: According this pilot study erythropoietin could be safe in healthy people (considering systemic diseases) and tolerated well.

Cauda equina paraganglioma with ependymal morphology: A rare case report

ESC-ID: 1128
Authors: Erban T, Erban N, Midi A, Yener N, Çubuk R, Sav A
Country: Turkey
University: Maltepe university , Department: medicine

Introduction: Paraganglioma (PG) is the neoplasm of dispersed neuroendocrine system that affects a variety of anatomic sites mainly head and neck, mediastinum and retroperitoneum. PGs of the central nervous system (CNS) are uncommon and usually arise from the cauda equina/filum terminale region or less commonly from the spinal nerve roots.
Case Report: A 38 year-old woman applied to a neurosurgery clinic with a 9-month history of progressive left-sided leg pain with difficulty in ambulation. MRI of the lumbosacral spine demonstrated an intradural-extramedullary well-circumscribed, tumor nodule with the dimensions of 2.5x1x1 cm which revealed homogenous contrast enhancement in the region of the left filum terminale. The patient underwent L3 laminectomy followed by total microsurgical total excision of the lesion. The specimen was grossed in and signed out at the department of pathology in that medical center. Gross inspection revealed a grayish-white tumor with dimensions of 2.5x1x1 cm and with moderate hard in consistency. Based on the histomorphological findings and focal immunohistochemical expression of GFAP, the case was diagnosed as ependymoma and the patient was decided to undergo adjuvant radiotherapy. At this point, she needed to have an extramural opinion for her pathology. All paraffin blocks from the patient's tumor were sent to us to be reviewed. Therefore her sent-in material to our institute showed two distinct morphologies, consisting of PG-like areas and ependymoma-like areas. Former pattern was represented with lobules and nests of uniform chief cells encompassed by flattened layer of sustentacular cells. Latter pattern was ependymoma-like areas with typical pseudorosettes. There were also numerous ganglionic cells within the tumor. Gomori / Wilder's reticulin stain showed septate delineating Zellballen. An immunohistochemistry panel was applied. The chief and ganglionic cells expressed synaptophysin (SYN) and chromogranin A (CGA) whereas sustentacular cells were positive for S100 protein in PG areas. Strong biphasic expression of CD99 in two above-mentioned parts of the tumor was observed. Ki-67 labeling index was 3% throughout the lesion. Immunohistochemistry (IHC) repeated twice with external positive controls was negative for GFAP except for focal immunoreactivity in normal glial tissues surrounding and in a few flattened sustentacular cells. IHC stains negative were EMA, NFP and pancytokeratin. With the histologic and immunohistochemical findings, we signed out the case as „paraganglioma with ependymal morphology". She didn't undergo any adjuvant therapy and has been doing well for the last 15 months after her operation.
Discussion: The diagnosis of a cauda equina tumor should not be based solely on conventionally stained sections. Morphological similarity between ependymomas and paragangliomas may lead to a diagnostic confusion especially when paragangliomas exhibit ependymal and/or ependymoma-like areas. Since ependymomas are more common tumors than paragangliomas at this location, this condition may easily be overlooked on conventionally stained sections resulting in unnecessary, or even injurious adjuvant radiotherapy of patient. Immunohistochemistry batteries consisting of a variety of antibodies and/or ultrastructural analyses are essential to make an accurate diagnosis.

Significance of magnetic resonance in differential diagnosis of nontraumatic brachial plexopathies

ESC-ID: 1209
Authors: Milena M
Country: Serbia
University: Medical School , Department: Belgrade

Introduction: Magnetic resonance (MRI) is the method of choice for evalution of patients with nontraumatic brachial plexopathy.
Aim: Aim of the study was to present a significance of MRI as a sofisticated diagnostic method in revealing the cause of nontraumatic brachial plexopathy.
Materials and methods: Two-year retrospective study included 22 patients with nontraumatic brachial plexopathy. In all patients typical clinical finding was confirmed by upper limb neurophysiological studies. In all of them MRI of brachial plexus was performed by 1.5 T scanner in T1 and T2 weighted sequences.
Results: Seven patients (32%) had brachial plexopathy with signs of inflammatory proces, 5 patients (23%) had secondary tumors, in 4 patients (18%) multifocal motor neuropathy was established and in same number of patients (18%) postradiation fibrosis was found. Two patients (9%) had primary neurogenic tumors.
Conclusions: According to our results, MRI is a method which may determine localisation and cause of brachial plexopaty. MRI has a direct influence on further diagnostic and therapeutical procedures.

Voltage-dependent calcium channel and NMDA receptor antagonists augment anticonvulsant effects of lithium chloride on pentylenetetrazole-induced clonic seizures in mice

ESC-ID: 1210
Authors: Ghasemi M, Shafaroodi H, Nazarbeiki S, Meskar H, Dehpour AR
Country: Iran
University: Shahed University of Medical Sciences , Department: pharmacology

Although lithium is still a mainstay in the treatment of bipolar disorders, the underlying mechanisms of action of lithium have not been completely demonstrated. Several studies have also shown that lithium could modulate seizure susceptibility in a variety of models. In the present study, using a model of clonic seizure induced by pentylenetetrazole (PTZ) in male Swiss mice we investigated whether there is any interaction between lithium and either calcium channel blockers (CCBs; nifedipine, verapamil, and diltiazem) or N-methyl-D-aspartate (NMDA) receptor antagonists (ketamine and MK-801) in modulat-

ing seizure threshold. Acute lithium administration (5-100 mg/kg, i.p.) significantly ($P < 0.01$) increased the seizure threshold. CCBs and NMDA receptor antagonists also exerted a dose-dependent anticonconvulsant effects on the PTZ-induced seizures. Non-effective doses of CCBs (5 mg/kg, i.p.) when combined with non-effective dose of lithium (5 mg.kg, i.p.) exerted a significant anticonvulsant effects. Moreover, co-administration of non-effective doses of either MK-801 (0.05 mg/kg, i.p.) or ketamine (5 mg/kg, i.p.) with non-effective dose of lithium (5 mg/kg, i.p.) significantly increased the seizure threshold. Our findings demonstrated that lithium increased the clonic seizure threshold induced by PTZ in mice and there is an interaction between lithium with either CCBs or NMDA receptor antagonists in this effect, suggesting a role for Ca2+ signaling in the anticonvulsant effects of lithium in the PTZ model of clonic seizures in mice.

Inhibition of NMDA/NO signaling blocked tolerance to the anticonvulsant effect of morphine on pentylenetetrazole-induced seizures in mice

ESC-ID: 1215
Authors: Ghasemi M, Shafaroodi H, Meskar H, Nazarbeiki S , Dehpour AR
Country: Iran
University: Shahed University of Medical Sciences , Department: pharmacology

Although morphine has anticonvulsant effect in several animal models of seizure, its potential clinical application in epilepsy may be hindered by its adverse effects like the phenomenon of opioid tolerance. The present study evaluated the development of tolerance to the anticonvulsant effect of morphine in a model of clonic seizure induced by pentylenetetrazole (PTZ) in male Swiss mice. We also examined whether N-methyl-D-aspartate (NMDA) receptor/nitrergic system blockage was able to prevent the probable tolerance. Our data demosntrated that anticonvulsant effects of a potent dose of morphine (1 mg/kg) was abolished in chronic morphine-treated mice (with the same dose of morphine twice daily, 4 days, i.p.). Chronic pretreatment with low and non-effective doses of different NMDA antagonists ifenprodil (0.5 mg/kg), MK-801 (0.05 mg/kg) and ketamine (0.5 mg/kg) as well as the non-selective nitric oxide (NO) synthase inhibitor L-NAME (2 mg/kg) inhibited the development of tolerance to the anticonvulsant effect of morphine (1 mg/kg). Moreover, a single acute injection of the above mentioned agents at the same doses reversed the expression of tolerance to the anticonvulsant effects of morphine (1 mg/kg). These results demonstrate that anticonvulsant effect of morphine can be subject to tolerance after repeated administration. Both development and expression of tolerance are inhibited by NMDA receptor/nitrergic system blockage, suggesting a role for NMDA receptor/NO signaling in the development of tolerance to the anticonvulsant effect of morphine

Frequency of restless legs syndrome in patients with chronic renal failure

ESC-ID: 1225
Authors: Moric A
Country: Serbia
University: Belgrade , Department: School of Medicine

Introduction: Restless legs syndrome (RLS) is a neurological disorder which is characterized by irresistible need to move the legs usually accompanied or caused by unpleasant sensations in the legs. There is primary and secondary (in pregnancy, iron deficiency, kidney disease) RLS.
The Aim: To determine the frequency of RLS in patients with chronic renal failure (CRF) and possible connection of this syndrome with clinical and biochemical parameters.
Materials and Methods: The study was performed in 84 patients diagnosed with CRF, in the Department of Hemodialysis, Clinical Center of Serbia. We established the existence of RLS using the International RLS research group questionnaire. The cases proven positive for RLS were compared with the group without this syndrome, to determine the clinical demographic parameters. The results were analyzed using standard statistical methods.
Results: The average age of patients was 54.4 ± 13.06 years. RLS was found in 13 patients (15.5%), 8 men (61.5%) and 5 women (38.5%). Most patients,7 (53.8%), had moderate RLS symptoms. In 76.92% of patients with and 42.25% of patients without RLS,CRF lasted more than five years (statistical difference $\chi^2 = 3.99$). Patients with RLS had higher erythrocyte sedimentation ($P=0.035$) and triglyceride levels ($P = 0.011$) than those without RLS. Patients with RLS had lower values of parathyroid hormones, but not statistically significant. No significant difference was found in the levels of Kt/V, URR, urea, phosphate, hemoglobin and creatinine of patients with and without RLS.
Conclusions: We found a significant incidence of RLS, which is more frequent in patients who had longer duration of CRF, increased triglycerides and sedimentation, lower values of parathyroid hormone. This research is important because it draws attention to this syndrome, whose existence greatly disrupts daily functioning of patients on hemodialysis.

Which factors influence the risk of intracerebral haemorrhage onset during warfarin therapy?

ESC-ID: 1226
Authors: Tengryd C, Berntsson J
Country: Sweden
University: Lund University , Department: Neurology

Background and Aim: Warfarin-treatment (oral anticoagulation) is used as prevention against thromboembolic events, unfortunately it is also associated with an increased risk for bleeding, where intracerebral haemorrhage (ICH) is the most feared complication. In our work we therefore explored which factors that influence the risk of ICH onset during warfarin therapy.
Methods: We conducted a literature study of the relative articles to examine which risk factors that was often associated with the risk of suffering from an ICH when on war-

farin treatment. We then did a large retrospective register study. We used data from the Swedish stroke register, Riks-Stroke, where 4085 patients were included between 2005 and 2009. First we compared risk factors between patients treated with warfarin that either had an ICH or an ischemic stroke (IS). We also compared risk factors in the patients with or without warfarin-treatment that had an ICH. The parameters that we compared using the statistics program SPSS were; gender, living conditions (living alone or with others), previous stroke, atrial fibrillation, diabetes, treatment against hypertension and age (over and under 75 years of age).
Results: 277 patients were treated with warfarin and of these, 51 patients had an ICH and 226 patients had an IS. A total of 485 patients had an ICH and of these, 51 were warfarin-treated and 434 were not warfarin-treated. We found no significant differences among risk factors in warfarin-treated patients that suffered from ICH compared to warfarin-treated patients that suffered from IS. In the group where all patients had an ICH, patients with warfarin-treatment were statistically significant (p=0,041) less often smokers (7,6% vs 17,9%) compared to patients without warfarin treatment. Patients treated with warfarin were statistically significant (p = 0.039) less often treated against hypertension (39,2% vs 54,3%) compared to those without warfarin-treatment. Patients treated with warfarin more often had a prior stroke (31,4% vs 17,8%) compared to those not treated with warfarin (p = 0,020).
Conclusion: Even though we found significant differences between the groups we could not conclude any specific risk factors that influenced the risk of ICH onset during warfarin therapy. The fact that the patients that were treated with warfarin, less often were smokers could indicate that they are more prone to live a healthier lifestyle due to the regular monitoring of INR levels needed when treating with warfarin. The question of which factors that influences the risk of bleeding during warfarin treatment is far from answered but new promising and safer anticoagulant drugs are in trials. There is also some hope concerning genetic risk factors and radiologic examination to help physicians determine in which patient the benefit of reducing the occurrence of thromboembolic events with anticoagulation is higher than the risk of causing an intracerebral haemorrhage.

Clinical evaluation of patients with mitochondrial myopathy

ESC-ID: 1342
Authors: Bogicevic A, Milosevic B, Despotovic M, Banjanin N
Country: Serbia
University: Belgrade , Department: School of Medicine

Introduction: Mitochondrial myopathies (MM) are a heterogenous group of diseases, characterized by defective oxidative phosphorylation, histological structural abnormalities in skeletal muscle, and neurological sympthoms. Clinical phenothypes can present as Kearns-Sayre syndrome (KSS), mitochondrial myopathy with epilepsy, lactic acidosis and stroke-like episodes (MELAS), Leber's hereditary optic neuropathy (LHON), myoclonus epilepsy and ragged-red fibers (MERRF) and chronic progressive external ophthalmoplegia (CPEO). „Ragged" red fibers (RRF) detected in muscle biopsies are the hallmark of MM.
Aim: To determine the clinical and histological characteristics of MM.
Material and methods: Retrospective analysis of 18 patients admitted to the Institute of Neurology, Faculty of Medicine, at the Clinical Center of Serbia in Belgrade from January 1, 2005 to December 31,2009.
Results: First symptoms were presented at 28 ± 15 years, with ptosis as the most common first symptom (at 67% of our patients). 72% of our patients had increased serum lactic levels 9 minutes after light exercise. EMNG showed myopathic lesions in mimical muscles and upper extremities muscles, without denervating activities, in all 18 patients. In 33% of patients, brain MRI showed lacunary multi-ischemic changes which were associated with increased lactic acid levels. Presence of RRF was detected at all muscle biopsies.
Conclusions:: Increased lactic levels, EMNG, MRI, as well as the presence of RRF represent key factors in the diagnosis of MM.

What is the relationship between serum level of vitamin D and multiple sclerosis in Isfahan, Iran?

ESC-ID: 1443
Authors: Golabchi KH,Shaygannejad V
Country: Iran
University: Isfahan university of medical sciences , Department: neurology

Introduction: Multiple sclerosis (MS) is a chronic autoimmune disease characterized by demyelinative nature that affects young adults, females twice as often as males. There are two main types of risk factors for MS, i.e. genetic and environmental. There are three main environmental risk factors have recently suggested for MS: hypovitaminosis D, past history of infection with Epstein-Barr virus (EBV) and smoking with effects that should be cumulative. There is no study about correlation between vitamin D serum level and MS in Iran, so in this survey, we investigated serum level of 25-hydroxy vitamin D in MS patients and compare it with normal control population in central region of Iran, Isfahan, area with medium to high risk for disease, in spite of high sun exposure.
Method and materials: A cross-sectional case-control study was conducted from July 1, 2008 to July 31, 2009. We enrolled 50 definitive multiple sclerosis (MS) patients, according to McDonald's criteria as case group and 50 healthy populations matched in sex and age. Our age limits were 15 to 55 and those patients with EDSS less than 5 were introduced to the study. All of the population did not have any known disease related to vitamin D or calcium deficiency and so they did not use any calcium or vitamin D supplements. We measured serum level of 25-hydroxy vitamin D in both groups and the mean was compared with independent T-test. Also we divided them into deficiency, insufficiency and normal serum level of vitamin D categories and compared them in both case and control groups ,and according to sex and age with chi-square.
Results: We could gather 42 females and 8 males as case group and the same as control group without significant age difference (P value = 0.05). The mean of serum level of 25-hydroxy vitamin D in case and control groups were respectively 48 nmol/L and 62 nmol/L , that was signifi-

cant (P value=0.036). Also our study shows significant discrepancy between two groups according to the rate of deficiency, insufficiency and normal range of vitamin D categories (P value = 0.021).
Conclusion: Our study shows the same results as those were done in Europe and North America, which implicates lower serum vitamin D level in MS patients than normal population, in spite of sufficient sun exposure in Isfahan region. So, we need to find other possible predisposing factors for vitamin D deficiency in our patients.

Antibodies to Ncore of Morbilli virus in patients with MS and their siblings with trait

ESC-ID: 1473
Authors: Persson L, Longhi S, Andersen O, Lagging M, Johansson M, Enarsson J, Bergström T
Country: Sweden
University: University of Gothenburg , Department: Sahlgrenska Academy

Introduction: The role of paramyxoviral infection for the pathogenesis of multiple sclerosis has been of interest for decades. That MS patients have high IgG titers against morbilli virus antigen in serum and CSF in comparison with their siblings and healthy controls was first demonstrated by Adams and Imagawa in the 1960s. A later discovery that our group made was that a subset of healthy siblings with ≥ 2 oligoclonal bands in the CSF had similar morbilli titers to MS patients and therefore were classified as „MS trait". Our aim with this project was to determine the specificity of this antibody reactivity through an expressed and purified morbilli antigen consisting of the conserved, N-terminal part of the nucleocapsid protein (N-core).
Method: We have utilized an expression system for producing Ncore, the structurally organized part of the morbilli nucleocapsid, as a serological antigen. We wanted to exclude the assessment of auto-antibodies due to presence of host cell antigens in the conventional ELISA that utilizes human fibroblasts for whole virus growth. With the new serological antigen it could be possible to investigate the IgG response in MS patients in an ELISA system devoid of human/primate components. The material that we used in our study was serum and CSF from 47 MS patients, 50 controls, 37 siblings and 9 siblings with trait. The data were analysed by Mann-Whitney U test.
Results: In serum and CSF, IgG titers against Ncore were significantly higher in MS patients as well as in their siblings with trait, as compared to controls and siblings without trait. A p-value <0.0001 for both serum and CSF was statistically significant.
Conclusions: We found that the elevated IgG response, both in serum and CSF, to morbilli virus antigen in MS patients and their siblings with „trait" contained specific antibodies to Ncore. This argues for an elevated IgG response to paramyxovirus nucleocapsids in MS, and against the presence of auto antibodies to cellular antigens as an explanation of the earlier results. Further studies will focus on epitope mapping of the here detected IgG reactivity to a protein that is conserved within the paramyxovirus group.

Spinal cord - motor cortex coculture model: a new technique to study neuronal regeneration in vitro

ESC-ID: 1526
Authors: Pohland M, Kiwit J, Glumm J
Country: Germany
University: Charité – Universitätsmedizin Berlin , Department: Institute of Cell Biology and Neurobiology

Introduction: After mechanical traumas cortical axons have a substantial potential for axonal growth and regeneration. Today several hippocampal, as well as spinal, in vitro lesion models are used to investigate neuronal differentiation, axonal growth and path finding. Here we describe a new cytoarchitecture-preserving slice coculture technique to analyse neuronal regeneration and axonal outgrowth between the motor cortex and the spinal cord.
Methods and Materials: Spinal cord (sc) from postnatal (P0-P3) C57Bl/6 mice and motor cortex (mc) dissected from Bl6.GFP pups (P0-P3) expressing green fluorescent protein (GFP) under beta-actin promoter control were chopped either in a sagittal longitudinal plane for the sc or in a coronal plane for the mc. Afterwards the medial cortex zone was orientated to the rostral end of the spinal cord and incubated up to two weeks.
Results: Using nonfluorescent pups as medulla donors and constantly GFP-expressing heterocygote mice as cortex givers, we can easily distinguish ingrowing cortical neurons in non-fluorescent wild type tissue. Our data shows ingrowing fibers and growth cones which are already detectable after 1 day in vitro (DIV). Moreover, the rate of growth was measured using confocal microscopy. In addition, immunhistochemical staining after 1, 3 and 6 DIV suggest a strong neuronal outgrowth and not only a reestablishment of cortical fibers but also their connections by means of microscopical analysis. Furthermore we were able to design a capable evaluation-matrix.
Conclusion: Thus, this in vitro method offers possibilities to test axon-regenerative properties of determined compounds or treatments and could provide an important tool to answer a variety of questions in the field of neuronal regeneration.

Session: Neurosurgery

Local delivery of darcarbazine prolongs survival in the brainstem glioma model in rats.

ESC-ID: 689
Authors: Kombaka AO, Casalis PA, Zenclussen ML, Thomale UW
Country: Germany
University: Charite Universitätsmedizin , Department: Pedriatric Neurosurgery

Objective: Diffuse intrinsic pontine gliomas constitute approximately 60-75 % of tumors found within the pediatric brainstem. The prognosis of the disease is dismal, and the median survival is less than 12 months. Convection-enhanced delivery (CED) has been reported to

be a safe method of introducing antitumoral agents into the site of lesion in rat brainstem glioma models. In the present study we investigated the efficiency of local delivered dacarbazine (DTIC) for the treatment of brainstem glioma in rats.
Materials and Methods: In 36 male Fisher rats (270-300g) 105 F98 cells/3μl were stereotactically implanted into the brainstem. Animals were randomized in 4 experimental groups; group 1 (n=9) received no treatment, group 2 (n=9) received placebo (3.75mg/ml mannitol, 10mg/ml citric acid), and group 3 (n=9) and 4 (n=9) received 10 mg/ml and 6.67 mg/ml of DTIC, respectively. In those animals receiving placebo or DTIC, five days after tumor implantation one cannula (group 2 and 3) or 3 cannulas (group 4) connected to osmotic pumps (AlzetTM, pump rate: 1μl/h) were implanted for local infusion of the drugs over 7 days. Weight loss and neurological grading using the Berlin-Baltimore Brainstem (BBB) score were assessed on a daily basis. Survival time was recorded to evaluate potential beneficial effect of local delivery.
Results: Local treatment of animals harbouring F98 brainstem glioma with DTIC via CED using 3 cannulas did significantly prolong the survival (25±7 days, $p<0.05$) compared to control animals without treatment (20±3 days), placebo treatment (18±4 days) or one cannula dacarbazine infusion (19±2 days). Neurological scoring showed delayed onset of neurological impairment in the three cannulas group compared to the other groups.
Conclusions: The local administration of dacarbazine with up to three cannulas in the brainstem of rats is feasible in the brainstem glioma model. Using a better distribution by 3 cannulas linked CED of darcarbazine results in beneficial effect on survival.

Expression of coagulation factors and the role of thrombin in human glioma

ESC-ID: 744
Authors: Kratzsch T, Brodhun M, Hanisch UK, Kalff R, Kuhn SA
Country: Germany
University: Friedrich Schiller University Jena , Department: Department of Neurosurgery

Aim: Particularly patients with glioblastomas have a high risk for deep venous thromboembolism. We suppose that activation of clotting in the tumor environment as well as individual coagulation factors produced by glioblastoma tissue itself contribute massively to glioblastoma malignancy.
Methods: Immunohistochemistry staining was performed to identify clotting factors in the environment of 20 human glioblastomas. Furthermore, we used human glioblastoma cell lines U87 and U373 to examine cell proliferation, morphology, migration, cellular vitality, as well as apoptosis. 100 cells were added in each well of a 24 well plate, were starved in serum-free medium for 24 hours, one day later substances were added and after 24 hours cells were examined. All experiments were done in triplicate. Statistical analysis were done by use of the SPSS 18.0 software.
Results: Thrombin causes the retraction of cellular processes in human glioblastoma cells. Whereas low and moderate concentrations of thrombin cause an increase of cellular proliferation, extremely high concentrations result in lower proliferative effects - this causes a so called dual effect. Antithrombin III is known to inhibit glioblastoma proliferation, and albumin raises cellular growth. Clinical AT III preparations containing albumin do not inhibit the glioblastoma proliferation but cause a clear increase instead of this. Whereas pure AT III inhibits proliferation and changes cellular morphology, clinical AT III preparations do not influence morphology at all. Beriplast® and Tachosil® enhance cellular growth, whereas Duraseal® and unfractionated heparin do not influence proliferation at all. Fibrinogen enhances proliferation of human glioblastoma cells. Cellular migration was influenced in an adequate manner compared to the effects of the substances on proliferation. Cellular vitality was not disturbed under the influence of thrombin. Human glioblastomas were strongly positive for the coagulation factor X, but negative for the factor XIII. Former studies showed the expression of prothrombin and thrombin in glioblastoma specimens of humans, syngenic rat models and nude rats. The factors VIII, IX and XI displayed a scattered positivity throughout the tumor tissue.
Conclusions: Thrombin is a highly potent malignancy promoting factor in human gliomas. The system build by coagulation factors and their receptors on human glioma cells causes a paracrine loop. Antithrombin III may be used as inhibitor, but clinical preparations containing albumin cause opposite effects. Therefore, it is of intriguing importance to use antithrombin III without albumin as chemical stabilizator. Dural sealants containing thrombin increase glioma cell malignancy, whereas Duraseal® that is free of thrombin does not have any effect on the tumor. Therefore, Duraseal® should be used instead of Tachosil® or Floseal®. Also other coagulation factors, like factor X/Xa participate in the thrombin-growth factor-system. This makes broader anti-tumor strategies necessary.

Analysis of operatively treated patients with meningioma in period 2007-2010 at cantonal hospital Zenica

ESC-ID: 763
Authors: Pojskic M, Skomorac R
Country: Bosnia-Herzegovina
University: University of Sarajevo , Department: General medicine

Aim: The aim of this study is to present characteristics of meningioma in correlation with age, sex, tumor localization, malignant properties and perioperative mortality in patients who underwent neurosurgical procedure in period from January 2007 to March 2010 in our clinic.
Method and Materials: There are 31 patients involved in the study. Analysis includes following parameters: annual incidence, sex and age distribution, tumor localization, malignant properties, operative method, histological type of tumor, post-operative intrahospital mortality and morbidity. Data are from patients history. Annual incidence is calculated using estimated population of Zenica-Doboj Canton. Malignant property and histological type are determined by pathohistological findings. Operative method is assesed using Simpson meningioma grading system. Intrahospital morbidity is expressed in terms of persistance of neurological deficit.
Results: During three years and three months period there

have been 31 patients with meningioma among total of 96 with neoplasms operated at this unit (32,29%). Annual incidence is 1,7 on 100000 for 2007 and 2008 and 1,9 on 100000 for 2009. Male to female ratio is 1:2,9. Medium age is 60,64. Tumor was located intracranially at 28 patients, predominantly on convexity and parasagittal, and there were 3 cases of spinal localization. Using WHO grade, 28 cases are classifed as benign grade I (26 fibrous type and 2 meningothelial type) and 3 as malignant. Gross total resection of tumor, dural attachments and abnormal bone which classifies as Simpson grade I was performed at 28 patients, while 3 operations belong to grade III. Three patients died in hospital after operation ,and from those who lived 38% had neurological deficit, with only 3 patients with constant deficit or deficit progression.
Conclusions: In this study meningioma comes in second place of all tumors managed at this unit in the observed period, with 29,16%, right after glioma. Three cases of spinal localization make almost 10% of meningiomas which is higher than most of previous studies from the literature showed. This goes also for malignant meningiomas, which there were 3 from 31 patients in total. Women were 3 times more often affected than men, and age distribution shows the largest group of patients among 56 to 50 years of age. Different factors influenced follow up, with case fatality rate of 9,67% and the same procent of patients with constant or progressive neurological deficit. Meningioma is one of the most frequent primary intracranial tumors. Surprising finding in this study is larger number of cases with spinal localization and malignant type. Further analysis is necessary for understanding of causes and consequences of this trend.

Emergency surgical treatment of brain tumors

ESC-ID: 767
Authors: Spasic S, Djurovic B
Country: Serbia
University: University of Belgrade , Department: School of Medicine

Introduction: It is not uncommon for intracranial tumors to present initially as a neurosurgical emergency. Abrupt neurological deterioration may result from several conditions associated with brain tumors, most frequently cerebral edema, intracranial hemorrhage and hydrocephalus, all of which causing increased intracranial pressure (ICP). Surgical internal decompression includes a gross resection of the tumor, if possible. Consecutive brain edema is mostly a combination of two types: cytotoxic and vasogenic. Management of cerebral edema consists of the usage of hyperosmolar agents, loop diuretics, corticosteroids, fluid restriction, as well as surgical resection of the tumor with surrounding edematous tissue. Intracranial hemorrhage may be located within the tumor, brain parenchyma, subarachnoid or subdural spaces. Hematoma, formed as a result of hemorrhage, needs to be surgically evacuated by making a cortical incision, via the most direct pathway, while avoiding eloquent areas of the brain. The precise etiology of hydrocephalus should be established prior to a ventriculostomy. These steps are crucial for providing adequate brain decompression and preventing from further neurological deterioration and progressive brain tissue damage.
Aim: The aim of this study was to precisely define main indications for an emergency surgical treatment of brain tumors, as well as associated conditions.
Methods and materials: In order to obtain data, retrospective analysis of 20 patients, aged 16 to 60 years, treated in the neurosurgical unit of the Emergency Center in Belgrade was used. Information was based on patient history, physical and neurological examination and imaging studies. We have started from a working hypothesis, that the main indication was a severe deterioration of consciousness, or falling unconscious (Glasgow Coma Score, GCS < 7). Furthermore, we have assumed that the only effective course of treatment in these cases was a neurosurgical operation, since medicamentous therapy had no success.
Results: After analyzing the collected data, two main indications for an urgent neurosurgical procedure were defined: severe alteration in consciousness and greater compressive effect of the tumor and/or associated expansive process visualized on CT scans. The study showed a high degree of correlation between indications established prior to surgery and treatment outcome. Effects of neurosurgical operations were better in patients who were younger and with milder disorder of consciousness.
Conclusion: Defining precise indications promptly is one of the most important steps in the course of emergency treatment of brain tumors. Results show that, the sooner the neurosurgical procedure has been preformed the results of treatment were significantly better.

Does gamma knife radiosurgery stop vestibular schwannoma growth? A prospective study

ESC-ID: 808
Authors: Varughese JK, Nansdal C, Pedersen P-H, Wentzel-Larsen T, Lund-Johansen M
Country: Norway
University: University of Bergen , Department: Department of Surgical Sciences

Introduction: Vestibular schwannoma (VS) is a benign tumor that arises in the eighth cranial nerve, giving symptoms of hearing loss, tinnitus, and vertigo. In general, it is a slow-growing tumor that in some cases even shows spontaneous regression. When and how to treat is debated, but in some centers, newly diagnosed small tumors are subject to conservative treatment, i.e. serial MRI scans without active treatment. In cases where the tumor has shown rapid growth in serial scans, or has become relatively large, treatment is usually offered. Two primary treatment methods prevail: microsurgery, where the tumor is physically removed; and gamma-knife radiosurgery (GKRS), where a gamma ray radiation dose is delivered to the tumor. This radiation dose, in theory, causes tumor growth arrest. In this study we wish to detail the success rate of GKRS, by comparing growth rates before and after GKRS treatment, and finding the proportion of tumors that get a successful treatment (defined as a negative or zero post-treatment growth rate).
Material and methods: Between 2000 and 2006, 347 patients were diagnosed with VS. From these, 159 (46%) received treatment by the end of 2007, while the remaining 190 (54%) were treated conservatively. A total of 41 (22%) of these conservatively treated patients later received GKRS treatment due to growth of the tumor, as

detected by the serial MRI scans. These 41 patients were included in the study, and were followed for a minimum of two years after treatment. The tumor volume on both pre-treatment and post-treatment images were measured, and mixed effects models were used to analyze the growth rates before and after treatment. We also conducted a logistic regression analysis to determine whether the age of the patient or the growth rate before treatment are related to achieving successful treatment.
Results and conclusion: We found a lower success rate for GKRS treatment of VS than previously reported. This finding is likely because other studies have included patients that had no growth potential, while our study includes only patients who have had previously documented growth. Details will be presented at the conference.

Microglia activation after aneurysmal subarachnoid hemorrhage (aSAH) – characterization of the cytokine expression profile

ESC-ID: 1217
Authors: Radon AM, Schneider UC, Turkowski K, Ghori A, Brandenburg S, Heppner F, Vajkoczy P
Country: Germany
University: Charité-Universitätsmedizin Berlin , Department: Neurosurgery

Objective: The role of inflammatory processes in the pathogenesis of early brain damage after aSAH gained increased attention in recent discussions. Our group was able to show a correlation between the activation of Microglia cells and brain damage after aSAH. The aim of the present study was to further explore the mechanisms underlying the development of this unfavourable condition. Therefore, we evaluated the production of inflammatory cytokines known to play an important role in the pathomechanisms of a variety of inflammatory CNS diseases.
Methods: C57Bl/6 mice underwent a filament perforation procedure to induce SAH. The brains were harvested on days 4, 14 and 28, respectively. The CD11b-positive cell fraction was isolated by magnetically activated cell sort (MACS) from the cell suspension obtained of these brains. A purity grade above 90% was verified through fluorescence-activated cell sort (FACS). Realtime-PCR was performed to quantify the expression profiles of the cytokines Interleukine (IL) 1a, b, 6 and Tumor Necrosis Factor (TNF) as well as their receptors (IL1 receptor(R) 1 and 2, IL6R and TNFR 1 and 2) at the respective time-points. Sham operated animals served as controls.
Results: Concerning IL1a and IL6, an increase in expression upregulation throughout the observation period was documented (day 4: 1.43, 1.02; day 14: 2.46, 1.59; day 28: 9.02, 2.54) whereas the expression of IL1b was constantly upregulated (day 4: 4.55; day 14: 5.17; day 28: 5.58). In contrast, the RNA production of TNF was only upregulated on day 14 after aSAH while on days 4 and 28 a downregulation was observed (day 4: 0.1; day 14: 4.09; day 28: 0.4). In the cytokine expression profiles of the respective receptors, significant changes could be detected for the IL1R 2 (day 4: 7.87; day 14: 3.24; day 28: 3.5), IL6R (day 4: 1.26; day 14: 1.80; day 28: 2.47) and TNFR 1 (day 4: 1.72; day 14: 2.39; day 28: 3.94) and 2 (day 4: 2.46, day 14: 4.08; day 28: 3.57). Only the expression profile of IL1R1 did not show significant changes throughout the time course.
Conclusions: Our study could show a significant change in the cytokine expression profile of intraparenchymal Microglia cells following an extraparenchymal aSAH. In combination with the correlation of microglia activation and axonal injury (previous study), this provides a possible molecular mechanisms of early brain damage genesis after aSAH and, respectively, an approach for new scientific as well as therapeutic aims.

Imaging of the vertebral venous plexuses in the context of percutaneous vertebroplasty

ESC-ID: 1295
Authors: Urbanski B, Majewski M, Szlufik S, Zebala M, Popiolek W
Country: Poland
University: Medical University of Warsaw , Department: Department of Neurosurgery of the 2nd Faculty

Aim: Fractures of the vertebral column are the most common complications of osteoporosis. Percutaneous vertebroplasty is a minimally invasive technique applying for the relief of pain and for the strengthening of bone in vertebral body lesions. Bone cement is injected into the fractured vertebra through a needle. Complication after inject such as pulmonary emboli may occur when the cement leaks into the veins. The authors aimed to describe the anatomy of the vertebral venous and paravertebral system and to establish its clinical implications, in order to better understand and anticipate complications that are related to the application of vertebroplasty.
Material and Methods: 20 patients from the Department of Neurosurgery were included in the study. All patients underwent contrast-enhanced MR venography (CE-MRV). Patients were imaged in the supine position. Imaging was performed without breath-hold. MR images were evaluated in consensus by three observers. All available MR images were scrutinized for the presence of venous structures.
Results: The lumbar venous system was subdivided into two main vascular systems - the internal venous plexuses, which consisted of vessels surrounding the spinal dura mater within the vertebral canal, and the external venous plexuses which surrounded the lumbar spine. These vertebral venous plexuses were connected by the intraosseous vertebral veins and the foraminal veins. The intraosseous veins were well analyzed in the axial plane and appeared in a tree-like configuration. The trunk of the tree was the major sagittally oriented dorsal channel which led to the transverse plexus, as a single vein or as two large basivertebral veins.
Conclusion: The results of this study demonstrate the importance of anatomical knowledge of lumbar venous drainage system. It helps to predict the possible patterns of the bone cement leakage and thus anticipate the complications of percutaneous vertebroplasty which can be very dangerous for the patients. Moreover, CE-MRV is a good and safe method of vertebral venous system imaging and could be used before every procedure of vertebroplasty.

Computer tomography angiography and digital subtraction angiography as methods in the early diagnosis of intracranial aneurysms - a comparative study.

ESC-ID: 1322
Authors: Majewski M, Urbanski B, Szlufik S, Zebala M, Rejman L
Country: Poland
University: Medical University of Warsaw , Department: Department of Neurosurgery of the 2nd Faculty

Aim: CT angiography (CTA) has been used for the early diagnosis of ruptured intracranial aneurysms whereas digital subtraction angiography (DSA) is the accepted diagnostic procedure for the assessment of intracranial aneurysms and for the preoperative treatment planning of patients suffering from subarachnoid hemorrhage (SAH). However, DSA is not the most valuable diagnostic method in all cases of aneurysms. The reported rate of negative angiography in SAH ranges from 10 to 20%. CTA can be used not only as the first diagnostic tool, but also as a control for diagnostic procedure when DSA was used firstly but the localization of aneurysm was not found or the location of SAH is unsure. The aim of our study was to evaluate the diagnostic value of CTA in comparison with DSA and with surgical findings for the detection of intracranial aneurysms (IA) in patients with symptoms or signs indicating the presence of an aneurysm.
Material and Methods: A retrospective analysis was performed of 328 patients with the diagnosis of subarachnoid haemorrhage, who underwent open aneurysm repair or preservative treatment between January 2006 and December 2008. Eighteen cases were selected, as diagnosed with the use of both CTA and DSA for the detection of aneurysms. From the group, 9 patients (2 men, median age 46±8 years) were treated using neurosurgical intervention and 9 patients (6 men, median age 53±16,9 years) were qualified to preservative therapy. The data were evaluated with the use of statistical analysis.
Results: Comparison of demographic data, preoperative aneurysm anatomic features revealed no significant differences. Overall rate of diagnostic use of CTA and DSA in time after starting the verification of aneurysm diagnosis showed, that more frequently firstly used is CTA (mean time 0,27±0,59 day, p>0,15), whereas DSA is also used, but as the second tool, for the diagnostic confirmation (mean time 0,44±0,63 day, p>0,15). It is correlated with the accuracy of CTA and DSA in detection of IA, which were appropriately 91% in all aneurysms in CTA (ACoA-67%, MCA-100%, PCoA-100%) and 63,6% in all aneurysms in DSA (ACoA-100%, MCA-60%, PCoA-100%), p=0,118.
Conclusions: We conclude that cerebral CTA is equally sensitive to DSA in the detection of intracranial aneurysms. CTA is nowadays the best choice of diagnostic tool for detection rate in AcoA and MCA bifurcation aneurysms, besides microaneurysms, smaller than 2mm. But sensitivity in smaller aneurysms can be improved with optimization of the technique. However some locations of IA still may remain problematic.

Surgical treatment of spinal metastases – The role of stabilization compared to decompressive laminectomy. Experience of 100 operated cases.

ESC-ID: 1384
Authors: Mihaylova S, Laleva L, Spiriev T, Stratev A, Enchev Y, Ferdinandov D
Country: Bulgaria
University: Medical University Sofia, Bulgaria , Department: Medicine

Introduction: Spinal metastases are reasonably common sequels of cancer and their management has undergone a great deal of change in the past 5 years. The modern spinal instrumentation techniques as well as intraoperative neurophysiological monitoring devices has revolutionized the treatment options and has established new management standards with significant advancement in the prognosis and quality of patient's life. Aim The aim of the current study is to present our data, concerning surgical treatment of spinal metastatic lesions and early postoperative outcome.
Matherial and Methods: We studied 100 patients (51 men and 49 women) for the period 2004-2009, diagnosed with spinal metastases and operated on in the Clinic of Neurosurgery, University Hospital „Sv. Ivan Rilski". Retrospective analysis was done.
Results: The peak incidence in the study group was 60.5 years for men and 53.7 for women. The most common localization was: thoracic-55 patients (pts), lumbar-3s, cervical-23pts and sacral-11pts; twelve cases were with multiple metastases. Only 47 % of the patients had history of primary neoplastic disease. The neurosurgical treatment included: laminectomy-63%, hemilaminectomy-33%, and laminotomy-4%. Partial surgical resection was executed in 47%, subtotal in 26%, total-17%, and biopsy only in 10%. Spinal instrumentation techniques was used in 45% of the cases. Early postoperative improvement was recorded in 88% of the cases, with significant improvement in functional status and pain management in the group with spinal instrumentation. Seven patients remained without improvement, one complication-impaired sensory and 3 deaths.
Conclusion: Spinal metastases are an important problem nowadays for the neurosurgery. Advanced spinal instrumentation techniques allow much more radical surgery with reduced rate of complications, better functioning and pain management which is important when considering the palliative role of surgery in this pathology.

Expression of blood coagulation parameters as a useful tool for defining clinical outcome in patients with posttraumatic intracranial extracerebral hematoma

ESC-ID: 1441
Authors: Anczykowski G, Guzniczak P, Zaborowski M. Woloszyn M,
Country: Poland
University: Poznan university of Medical Sciences , Department: General Medicine

Intracranial hematoma, cerebral edema, brain contusion are most common reason for development of secondary brain injury. Cerebral trauma with intracranial bleeding

is characterised by high mortality rate - about 30% - 40%. As a result of appropriate posttraumatic diagnostic and therapeutic regimen some part of victims may survive. The purpose of our paper was clinical analysis of risk factors on the basis of neurological examination, laboratory findings and CT estimation in patients after posttraumatic intracranial hematoma. Relation between craniocerebral trauma severity and D - dimer expression was established. D - dimer expression reflects activity of coagulation and fibrynolysis and indicates risk of embolic and thrombotic complications. Material of our prospective clinical trial included 36 patients operated on due to intracranial hematoma in the Clinic of Neurosurgery. Exclusion criteria were as follows: multiorgan failure, pharmacotherapy with anticoagulants or antiplatelet drugs, intracerebral or posterior cranial fossa hematomas. The cohort consisted of 31 male and 5 female cases in average age 55 yrs. We analyzed reactivity of patients (GCS), neurological deficits, CT scans (the shift of brain middle structures), D-dimers level, thrombocytes, hemoglobin, prothrombin time and INR in venous blood samples. Data were analysed by Student's t-test, Mann-Whitney U test and Spearman correlation (Statistica 8.0). A p-value <0.05 was considered statistically significant. Intracranial subdural hematoma was observed in 28 patients: acute (19 cases), subacute (2 cases), chronic (7 cases). Intracranial epidural hematoma was present in 8 cases. The range of reactivity in GCS on admission to the department was 3-15 points. Mortality rate was 26%. Statistically significant correlation was revealed between reactivity of patients during admission and expression of D-dimers (p<0,001). Statistically significant differences (p<0,05) were present between INR and PLT in comparison with the outcome. Values of D-dimers expression, INR, thrombocyte count are important aspects specifying severity of craniocerebral trauma. These issues are also significant for prognostic purposes.

Session: Ophthalmology

Changes of optic nerve conduction in alloxan-induced diabetic rats

ESC-ID: 510
Authors: Ghita M,Parvu D,Giurgiu M,Braga R,Zagrean L
Country: Romania
University: UMF "Carol Davila" , Department: Physiology

Aim: Diabetes mellitus can severly affect the visual function by developing retinopathy and optic neuropathy. However there is not a clear view about the neurophysiological changes of the central nervous system in diabetes mellitus and the moment they appear. An efficient way to study the optic nerve conduction is by means of visual evoked potentials as response to light stimuli. In the study we examined the changes in visual evoked potential latencies for a 3 month period in alloxan-induced diabetic rats.
Methods and materials: We chose to perform the experiment on Wistar male rats aging 3 months and with a 300 g starting weight. In the experiment we used two groups: a control, age-matched nondiabetic group and a diabetic alloxan-induced group. Diabetes was induced by a single intraperitoneally alloxan dose (200 mg/Kg). In the diabetic group, glycemia was measured 2 days after the induction and then every two weeks. By administrating a single alloxan dose we obtained values over 450mg/dl. The relation between weight and glycemia variation was overseen during the experiment. The glycemia values recorded over the 3 months showed a slight decrease. One week prior to glycemia induction, a chronic implant was made. For anesthesia, we used clorhydrate(8 ml/Kg, concentration 0,1g/ml). In the study, visual evoked potentials with flash stimuli were measured prior to diabetes induction, and then every 2 weeks after diabetes induction.Visual evoked potentials were used to monitor the effects upon the optic nerve conduction. The latencies of the visual evoked potentials reflect the time needed for axonal transmission in the sensory pathway.
Results: Three months after the hyperglycemia induction, the weight in the diabetic group had dropped from 300g to an average of 170g. Glycemia was mantained aproxmatly constant with slight decreases over the 3 months. In the diabetic group visual evoked potential latencies increased comparative to the non-diabetic group. In the first two months we recorded values with no significant variations. After 10 weeks of diabetes, neurophysiological changes in the optic nerve were observed with progressive increased latencies of visual evoked potentials developed in all VEP components compared with the control lot (N1,P1,N2,N3), P<0,001. In the diabetic group only a subject showed signs of cataract.
Conclusion: After 10 weeks of untreated diabetes, in the hyperglycemic group appeared changes denoting optic neuropathy. These modifications are pointed by the increased visual evoked potential latencies. It is shown that the visual function is affected not only by retinopathy but also by injuries in the optic nerve. Therefore, by improving visual function in diabetes mellitus, treatment should also regard the optic neuropathy.

The investigation of vitreous' acid-base balance at proliferative retinopathy of prematurity

ESC-ID: 743
Authors: Amkhanitskaya LI, Nicolaeva GV, Kuznetsova YD, Sidorenko EI, Sidorenko EE
Country: Russia
University: RSMU, Medical Faculty , Department: Pediatric Ophthalmology

The great attention in the pathogenesis of retinopathy of prematurity (ROP) is paid to the defect of retina's vasculogenesis while vitreous' role in the disease progression is slightly investigated. The vitreous carries out a number of critical functions including the participation in the intraocular metabolism. The vitreous is already proved to have big role in the proliferation development at diabetes and eye injury. Similar researches at ROP haven't ever been taken. The investigation of biochemical aspects of ROP's pathogenesis will allow suggesting new effective therapies of such severe eye disease. Purpose is to investigate the vitreous' role in the pathogenesis of retinopathy of prematurity.
Materials and methods: Twenty children with ROP underwent vitrectomy were examined at Morozovskaya City Children's Hospital (Moscow, Russia). The gestational age was average 30±2,3 weeks, the birth weight

was 1375±425 g. The high frequency of comorbidity was registered, namely hypoxic central nervous system affliction (93%) and prenatal infections (20%). Long-term AVL was used in 67 percent of children. The operation age was average 3,75±1,3 months. Lasercoagulation was previously performed in 80 percent of children. According to the stage of ROP three groups of children were formed: stage 4a (5 children), stage 4b (10 children), stage 5 (5 children). The vitreous' withdrawal for in vitro investigation was carried out in total of 0.4 ml directly prior to vitrectomy. The pH, pO2, pCO2 values of the vitreous were indicated using gas-analyzers Radiometer abl 800 FLEX and Radiometer abl 700 SERIES.
Results: The biochemical analysis of vitreous revealed its acidosis (6,93 ± 0,15), hyperoxia (173 ± 8,9 mm Hg) and hypocapnia (6,11 ± 1,77 mm Hg). Acidosis considered being metabolic because of low pCO2 values. Acidosis was associated with low activity of enzyme systems in premature infants, abnormal free-radical and redox processes within eye tissues. The pO2 high value (173 ± 8,9 mm Hg) points at poor oxygen uptake. A comparison between ROP's stages and the parameters of vitreous' acid-base balance showed that pCO2 values fell progressively in proportion to the pathogenic pathway (2 at stage 4a - 7,45 ± 2,8 mm Hg, at stage 4b - 6,89 ± 0,25 mm Hg, at stage 5 - 4,1 ± 1,2 mm Hg) while pH and pO2 values persisted approximately on a level. Such fact points that the vitreous buffer systems excessively strain in attempt to compensate an acidosis followed by the failure of protecting mechanisms.
Conclusions: The development of retinopathy of prematurity accompanies with local metabolic acidosis. The vitreous becomes a vessel for acid metabolites, oxygen and other pathological factors. The reasons and the consequences of changes mentioned above are still questionable and need further investigation. The study is ongoing.

The effect of sub-conjunctival Mitomycin-C on intra ocular pressure in various types of glaucoma.

ESC-ID: 1090
Authors: Manzar N, Mahar PS, Hassan M, Ahmad T
Country: Pakistan
University: Dow University of Health Sciences, Karachi, Pakistan , Department:

Purpose: The purpose of this study was to asses the efficacy of sub-conjunctival injection of mitomycin-C (MMC) in lowering the intra ocular pressure(IOP) in eyes affected with different types of glaucoma.
Patients and Methods: This was a prospective, non comparative, non randomized, interventional, consecutive case series study of 16 patients from both sexes, who presented to glaucoma clinic, Isra postgraduate institute of ophthalmology with bilateral glaucoma, monolateral blindness, and an IOP of greater than 30mmHg and who met the other inclusion criteria. No perception of light (NPL) eye was taken as the study eye and given sub-conjunctival injection of mitomycin-c in dosage of 1mg/0.5ml with consequent drop in IOP at interval of day 1, day 7, 1 months and 3 months. Data was analyzed using proportion, group means, standard deviations, and analysis of variance (anova).
Results: There was a significant and progressive decline in IOP in patients through out the follow up period ($p<0.01$, anova). As early as day 1 post injection, 38% of patients had a drop in IOP of greater than 10mmHg and this proportion increased to 69% at 3 months.
Conclusion: Sub-conjunctival injection of MMC correlated significantly with the drop in IOP observed in patients enrolled in the study

Features of correction of coagulant system indexes in the eye vascular pathology

ESC-ID: 1131
Authors: Biletska Polina, Dyomin Yriy, Gapunin Igor
Country: Ukraine
University: Kharkiv medical academy of postgraduate education , Department: ophthalmology

Treating the vascular pathology of the eye is one of the most pressing problem in ophthalmology.Vascular diseases like retinopathy, arterial and venous thromboses of retina blood vessels, primary glaucoma lead to incurable blindness. Correction of the hypercoagulation syndrome often provides by prescribing ungraded and low molecular weight heparin, that could bring unwanted side effects.During 4 months 30 patients in age of 50-72 with retinal degeneration, venous thrombosis of retina blood vessels, vascular optic retinopathy were examined. Inspection included the case history, clinical and laboratory examinations, ophtalmological survey. All of the patients had coagulation time and activated time of recalcification decrease, 60percents had loss of prothrombin index, 30percents - fibrinolytic activity fall. All this suggests that patients had hypercoagulation syndrome.All of the patients had their coagulant system indexes came to normal after using factor Xa inhibitors. there were no side effects after using this medicine. 1.All of the patients with vascular pathology of the eye had coagulant system failure like hypercoagulation.2.Using factor Xa inhibitors let us provide the hemostasis correction without influence on organism outside the coagulation process.

Purpose: Increasing the effectiveness of treatment of diabetic retinopathy when treating participants-liquidation of the crash consequences at Chernobyl Nuclear Power Station.

ESC-ID: 1219
Authors: Gorbachova EV
Country: Ukraine
University: Kharkiv National Medical University , Department: ophthalmological

The thesis is devoted to the problem of increasing the effectiveness of treatment of diabetic retinopathy when treating participants-liquidation of the consequences (LLC) after Chernobyl Nuclear Power Station (CNPS) accident by application preparation of nicergolin at complex therapy on the basis of the new scientific findings about the features of its clinical motion at this group of patients. The dependences from the doze of irradiation was found: the participants-liquidation of the consequences after CNPS accident with the doze of irradiation 25 cGy and above in comparison with those who were irradiated

with the doze below 25 cGy have positive predominance of proliferate diabetic retinopathy (in 64,7 % and in 37,5% accordingly). Early beginning and accelerated progress of diabetic retinopathy and it proliferate forms among the participants-liquidation of the consequences after CNPS accident in comparison with those who were not irradiated was registered. In order to improve detected damages (electro-physiology indexes of microcirculation and hemodynamics of eye) among the participants-liquidation of the consequences after CNPS accident suffering from diabetic retinopathy the use of nicergolin during the clinical course was offered.

Correlation between ocular surface disease index (OSDI) and ocular surface staining in patients with dysfunctional tear syndrome

ESC-ID: 1307
Authors: Pakdel F, Kashkouli MB, Najafpour E, Panahipour S
Country: Iran
University: Tehran University of Medical Sciences, Department: Ophthalmology

Aim: Improving the diagnosis and assessment of dysfunctional tear syndrome (DTS) can provide a number of options that will ultimately benefit the patients. Currently the diagnosis of DTS relies on a set of diagnostic tests including tear quantity and quality, symptoms and ocular surface damage. Recently, OSDI questionnaire has been introduced as a standard test for evaluating the patients' symptoms and functional derangements secondary to DTS. Some studies have shown discrepancies between patients' symptoms and diagnostic tests. To the best of our knowledge the relationship between the OSDI scores and keratopathy, as revealed by Lissamine and flourescein staining, has not been reported. The aim of this study was to compare the correlation between Ocular Surface Disease Index (OSDI) and ocular surface staining in patients with dysfunctional tear syndrome.
Methods and Materials: In a prospective observational case series 45 patients with rheumatoid arthritis completed the OSDI questionnaire, scored from 0-100, and then underwent a series of diagnostic tests including ocular surface Lissamnie green and flourescein staining, recorded by Oxford System; Shirmer's test and tear break-up time. Other ocular disorders such as lid malpositions, blepharitis, and glaucoma were excluded. The diagnosis of DTS was established according to the revised Japanese diagnostic criteria by the Japan Dry Eye Research Society. Right eye data were used for statistical analysis.
Results: Data of 45 eyes of 45 patients were analyzed. There were 43 (86%) female. Mean age was 56.3 (±10.8) year. Twenty five (55.5 %) had definite DTS, 12 (26.6%) had probable DTS and eight (17.7%) had no DTS. Correlation analysis showed a significant correlation between Lissamine green staining and OSDI score in probable DTS (r=0.72, P=0.008) and marginally insignificant in definite DTS (r=0.389, P=0.060). It also showed a significant correlation between flourescein staining and OSDI score in definite DTS (r=0.447, P=0.029) but not in probable DTS group (r=0.353, P=0.261).
Conclusions: Lissamine green and flourescein staining have a good correlation with patients' symptoms and functional derangements assessed by OSDI questionnaire in patients with dysfunctional tear syndrome.

Prevalence of different types of orbital tumors during 1998-2008 Tehran Iran

ESC-ID: 1388
Authors: Salour H, Abrishami Y, Abrishami A
Country: Iran
University: Shahid Beheshti , Department: Labafinejad Eye Center

Introduction: Orbital cavity has different type of tissues each of them has capacity to transform to tumor. In addition of primary orbital tumors, orbital around tissue and other parts of body also have capability to invasion to orbit. We were aimed to determine the relative prevalence of different types of orbital tumor at labafinejad hospital Tehran-Iran.
Materials and methods: We reviewed the hospital record of 267 patients with orbital tumors who were operated during 1998-2008 .Age, sex and pathologic reports of orbital tumors were evaluated.
Results: There were 267 patients with mean age of 33(SD: 12) years old. One hundred twenty of patients were female (45.6%). In our study secondary orbital tumors (27.3%) and cystic lesion (23%) was more prevalent than other tumors in orbit. Cystic lesion was contain of dermoied cysts(70.5%), epidermoide cysts(23%) and mucosal (6.5%).Other more frequent orbital tumors were inflammatory masses (7%), lacrimal fossa lesions (12%), leukemic and lymphoid tumors (7.9%), infiltrates (8%), vasogenic lesions (5.5%), peripheral nerve tumors (3%), optic nerve and meningeal tumors (1%),rhabdomyosarcoma (3%), myxomatousand adipose lesions (1.5%), metastatic tumors (1.5%) and histiocytic and related lesion (0.5%).
Conclusion: Secondary and metastatic tumors were the most prevalent tumors in this study and there was no report of melanocytic, osseous, or cartilaginous tumors.

The effect of ranibizumab treatment on patients' vision-related quality of life in neovascular age-related macular degeneration

ESC-ID: 1464
Authors: Hoffmann A, Hirneiss C, Wolf A, Finger RP, Kampik A
Country: Germany
University: LMU Munich , Department: Department of Ophthalmology

Aim: To assess the effect of intravitreal ranibizumab (Lucentis®) on patient-reported preferences and vision-related quality of life (vr-QoL) in neovascular age-related macular degeneration (AMD).
Methods: 55 patients (55 eyes) with firstly diagnosed neovascular AMD received monthly intravitreal injections of 0.5 mg ranibizumab for three months. In addition to a full ophthalmological examination, including best-corrected visual acuity, fundus photography, fluorescein angiography and ocular coherence tomography, vr-QoL and patients preferences were recorded at baseline and at follow-up 4 weeks after the last injection. Psychometric instruments included the National Eye Institute Visual Function Questionnaire (NEI VFQ-25), the Euro-QoL (EQ-5D) containing the visual analogue scale (VAS), the time-trade off method (TTO) and the standard gamble (SG). The standard gamble was anchored for two outcomes: blind-

ness and death. Utilities for the EQ-5D were obtained using the database for the European VAS (EQ-5D E-VAS), the German VAS (EQ-5D D-VAS) and the German TTO (EQ-5D D-TTO).
Results: Mean best corrected visual acuity (BCVA) of the treated eye increased from 20/83 at baseline (-logMAR 0.60) to 20/67 (-logMAR 0.52) at last follow-up after three injections (p=0.002). Mean BCVA of the fellow eye was 20/55 (-logMAR 0.46). The mean VFQ-25 composite score showed a statistically significant increase from 72.65 (15.81 SD) before to 76.19 (15.72 SD) after treatment (p = 0.028). Utility assessment pre- and postintervential revealed slight increases but no significant differences for any test used. The highest increase was noted for the EQ-5D D-TTO (from 0.792 to 0.858, p = 0.071, table 1). The raw data of the visual analogue scale showed a statistically significant increase from 53.3 to 61.4 (p = 0.002). According to a recent study by Bressler et. al.1, subgroups were created by whether the better- or worse-seeing eye had received treatment. Both groups showed an increase of mean VFQ-25 composite scores (3.02 points difference worse eye and 3.27 points better eye treated). Most patients in the subgroups did benefit from treatment, the highest gain in vrQoL was observed in the group with the worse-seeing eye being the treated eye. There was no significant change for any utility instrument in the analyzed subgroups. Change in visual acuity of the treated eye was not correlated with the change of VFQ-25 composite score (r = 0.002).
Conclusions: Patients with neovascular age related macular disease report reduced vision related-quality of life (vr-QoL) and utilities. Intravitreal treatment with ranibizumab increases mean visual acuity and vr-QoL as measured with the VFQ-25. Utility instruments like SG, TTO and EQ-5D are not sensitive enough to detect significant differences in quality of life in our collective. Regardless of whether the study eye was the better or the worse seeing eye, vrQoL improved due to ranibizumab treatment. This confirms data of the MARINA study1 also in real life. Increase of visual acuity and increase of vrQoL are not correlated in our setting. Quality of life is an independent parameter in the evaluation of ranibizumab treatment success.

Session: Orthopedics and Traumatology

Quantification mobility following kyphoplasty measured by an external non invasive measurement tool compared to clinical and radiological outcome parameters

ESC-ID: 687
Authors: Pirvu TN, Disch A, Schaser K, Melcher I, Haas N, Druschel C
Country: Germany
University: Charite Berlin, Germany , Department: CMSC, Charite Berlin Campus Virchow Klinikum

Introduction: In recently published randomized controlled studies the clinical outcome and efficacy of ballon kyphoplasty (BK) was put into question. Objectives of the following study was a quantification of the range of motion using a non-invasive, radiation free method to evaluate spinal motion following BK in comparison with the clinical and radiological outcome parameters.
Materials and Methods: 17 patients (mean age: 66 years, female : male = 6 : 11) with symptomatic pathological vertebral fractures were included. All vertebral fractures showed bone marrow oedema in a preoperative MRI (mean fracture age: 30 days) revealing non-consolidated fracture areas. All patients underwent BK (1 vertebra:11, 2 vertebra: 4, 3 vertebra:3, 5 vertebra:1; thoracic: 12, lumbar: 17). Clinical outcomes were assessed by the visual analogue scale, general quality of life (SF36/Roland Morris Score) and ODI pre- and postopertively and 12 weeks following surgery. In standardized planar x-rays kyphotic angle (KA) and sagittal index (SI) of the fractured vertebras were investigated previously and following BK. For each time point the spinal range of motion (5 repetitions of flexion and extension) was measured using two external applicable stripes each divided in 12 sensor segments (SpineDMS)..
Results: Pain and life quality outcomes significantly improved after operation. Radiological parameters showed a significant (p = 0.002/p = 0.005) improvement: SI: 0.74° vs. 0.84°/ KA: 12.34 vs. 9.0). Overall ROM showed no significant difference following surgery while a significant fracture location dependend difference of velocity and amplitude of the ROM between the lower and upper sensor segments was obvious. Following surgery this difference decreased. There were no siginificant correlations found between ROM and pre-/postoperative clinical outcomes and x-ray scores.
Conclusions: The present study showed a significant improvement in clinical outcome after BK. This is similar to the previous published literature. There was no direct improvement of patients`mobility detectable while the different measured spinal segments changed ROM following surgery. For further interpretations a larger patient number has to be investigated. External ROM measurement with the SineDMS system is an easy applicable and non invasive tool for monitoring therapeutical effects.

A comparison of mobile-bearing versus fixed-bearing total knee arthroplasty

ESC-ID: 1009
Authors: Eajazi A, Kazemi SM, Minaii R, Daftari Besheli L
Country: Iran
University: Tehran University of Medical Sciences , Department: Orthopaedics

Background: Currently there are various knee prosthesis designs available each with its plus and minus points; there is no general consensus on whether mobile-bearing knees are functionally better than fixed-bearing ones. This study is designed to compare outcomes after total knee arthroplasty with both of the above prostheses.
Materials and Methods: 50 patients (68 knees) who'd had a total knee arthroplasty between April 1999 and April 2008 at both Akhtar and Kian Hospitals for primary osteoarthritis were selected. In 30 cases a fixed-bearing knee (Scorpio®, Stryker) and in the remaining 38 a mobile-bearing prosthesis (Rotaglide®, Corin Group) was used. Patients' knees were scored before and after the operation according to the Knee Society Scoring System. The mobile-bearing group had an average age of 65 and 34

months' follow-up; in the fixed-bearing group the average age was 69 and the average follow-up 30 months.
Results: The average knee score in the mobile-bearing group rose from 29 to 64 while in the fixed-bearing group the score changed from 31 to 68. The average functional score moved from 45 to 67 in the mobile-bearing group and from 34 to 57 in the fixed-bearing group. The average overall score, for the fixed-bearing group, moved from 65 to 125 and in the mobile-bearing group from 75 to 128.
Conclusion: In both groups the average knee/functional knee scores increased after the operation and all patients were happy with the results, however statistically there was no meaningful relationship between pre-and post-operation scores. So regarding to our findings, there is no preference between these two types of prosthesis.

Realistic loading conditions for simulating axial rotation

ESC-ID: 1154
Authors: Dreischarf M, Zander T, Bergmann G, Rohlmann A
Country: Germany
University: Charité - Universitätsmedizin Berlin , Department: Department of Orthpedic Surgery

Background: New implants or surgical treatments should be pre-clinically tested. This requires realistic loading conditions, which mimic the in vivo situation. In the literature, however, those loads which should simulate axial rotation vary strongly. Thus, the loads that lead to the most realistic simulation of axial rotation are still unknown. Purpose: To calculate the impact of different load assumptions on the simulation of axial rotation in a finite element sensitivity study, and to calculate the most realistic loading conditions in an optimisation study.
Methods: A validated finite element model of the lumbar spine was used. The sensitivity analysis was based on the following input parameters, which were uniformly varied in 200 calculations using Latin hypercube sampling within ranges adapted to the literature: amount and direction of the torsional moment, coupling of the moment to the motion of L1 (yes/no), magnitude of the follower load (FL) and 5 boundary conditions applied to L1 switched on or off. To examine the influence of the different input parameters on the kinematics of axial rotation, coupled motions, intradiscal pressure (IDP) and facet joint forces, an analysis of correlation was performed, the corresponding coefficients of determinations were calculated, and all input-output anthill diagrams were analysed. To determine the most realistic loading conditions for axial rotation, a gradient-based optimisation algorithm was used in order to find out which loading delivers results that fit best with available in vivo measurements.
Results: The various input parameters found in the literature lead to widely varying results. The factors which explain most of the variance of the kinematics of axial rotation are the magnitude of the applied moment, the magnitude of the FL and the boundary condition which constraints the lateral translation (T-LR). Facet joint forces are mostly affected by the amount of the torsional moment and the T-LR. The coupled motion is mainly influenced by the magnitude and orientation of the torsional moment and the boundary condition of the L1. For example, fixing the T-LR and/or especially the R-AP leads to a suppression of the coupled lateral bending. The IDP is strongly determined by the magnitude of the FL. The best agreement with results measured in vivo were found for a follower load of 700 N and a free rotational moment of 5.5 Nm.
Discussion/Conclusion: The probabilistic sensitivity analysis revealed that many of the presently assumed loads lead to unrealistic simulations of axial rotation. The results obtained here deliver for the first time proven loading conditions that mimic the in vivo situation for axial rotation, and would also lead to a better comparability of different investigations.

Can we improve the prediction of vertebral fracture risk in aging spines?

ESC-ID: 1245
Authors: Jayasekera M
Country: United Kingdom
University: Southampton University , Department: Medicine

Introduction: Vertebral fracture risk is commonly predicted by average bone mineral density (BMD) measured by dual energy x-ray absorptiometry (DEXA). Recent studies suggest that regional BMD variation exists within the vertebrae, especially in degenerated discs. In this circumstance the neural arch resists a high proportion of compressive stress, effectively "stress shielding" the anterior vertebral body. This altered load bearing distribution can lead to weakening of the anterior column, promoting anterior wedge fractures. This finding brings into question the legitimacy of the present method of assessing fracture risk, which is incapable of identifying intravertabral regions most vulnerable to fracture. An alternative method of determining regional bone density is by plane radiographs which assess optical density of vertebrae. The proposed study aims to compare the regional measures of BMD/OD to whole vertebral body BMD, to confirm whether regional variation exists, and which method is the best predictor of failure load in vitro (equivalent to fracture risk in vivo).
Method: Lateral radiographs and DEXA scans of 20 thoracolumbar motion segments were performed before mechanical testing. The motion segments ranged from 68-85 years, and consisted of three vertebrae and two intervertebral discs from T8-L4. The motion segments were mechanically tested to failure while positioned in 2-6o of flexion. Stress profiles of the specimens were integrated over area to calculate the force on the neural arch. Radiographs were analysed on Image J, to obtain whole, anterior and posterior vertebral body and neural arch OD values. The BMD values of the same regions of interest were measured on a lunar piximus densitometer. Validation comparing 100 corresponding OD and BMD values was undertaken , and regression analysis correlated regional and whole vertebral body BMD/OD with failure load.
Results: OD and BMD polynomial regression provided a good correlation in order to deem the experiment valid ($p<0.0001$, $R2 = 0.732$). Regional variation within the aging vertebra existed, with an increase in both BMD/OD from the anterior vertebral body to the neural arch ($p<0.0001$). Failure load was found to be more dependent on regional measures of the vertebrae compared to global measures, and the neural arch OD was found to be the best predictor of failure load ($p=0.0003$, $R2=0.7807$) compared to whole vertebral body BMD ($p = 0.0126$, $R2 = 0.5175$).

Conclusion: Regional intravertebral measurements are better predictors of failure load than whole vertebral body BMD. This provides incentive for in vivo methods of discriminating between intravertebral BMD/OD to be developed, in order to improve detection of fracture risk in elderly individuals.

Evaluation of the outcomes of tibial interlocking intramedullary nailing with limited reaming in the treatment of tibial diaphyseal fractures.

ESC-ID: 1429
Authors: Mojtahed A, Mojtahed M, Espandar R, Mortazavi S.M.J , Shalileh K, Mahboubi H
Country: Iran
University: Tehran University of Medical Sciences , Department: Imam Khomeini Hospital Complex-Research Deput

Introduction: Tibial fractures are the most common of all long bone fractures. Intramedullary nails have become the popular choice of implant in the treatment of tibial shaft fractures, however, the preferred method of intramedullary nailing (IMN) of tibia remains controversial. We conducted a study to evaluate the outcomes of patients with a tibial diaphyseal fracture treated with interlocked IMN with limited reaming of intramedullary canal (IMC).
Material and methods: From 2001 to 2006, 120 tibial diaphyseal fractures were treated in our clinic using the method of IMN with limited reaming of IMC. Data of the patients was compiled during clinical and radiographic examinations after 1, 2, 3, 4, 6, 9, 12, months. The long-term follow-up evaluation was performed by calling patients to attend the last clinical evaluation session in which patients were examined and required to answer a questionnaire. Standard anteroposterior and lateral radiographs were performed for all the patients during their last follow-up evaluation.
Results: Of 102 patients who completed all follow-up sessions, 101 (99%) united without any need to an additional major operation. The mean time to union was 20.4 weeks (8 to 35) with (95.1 %) of the fractures being healed in less than six months. There was one case (1%) of deep infection, which was treated with intravenous antibiotics and exchange nailing. Two patients (2 %) developed superficial infection that resolved with antibiotics. There was no nonunion or malunion. There was a significant difference in the time to union among age groups, closed and opened fractures, and mode of locking. One patient had 15 degrees restriction in range of motion of the knee, and one had 5 degrees restriction in range of movement of the ankle. Anterior knee pain was noted in 25 (24.5%) patients.
Conclusion: Our results have shown an excellent rate of union (100%) with very limited complications which are comparable with previous studies using reamed and undreamed IMN. Therefore, we conclude that tibial IMN with limited reaming of IMC is an excellent method in treating tibial diaphyseal fractures, providing the advantages of reaming while avoiding the complication of standard reaming. It is with great pleasure that we acknowledge the continued and generous support from Elite National Foundation of Iran (Bonyad Meli Nokhbegan, BMN).

The influence of cryotherapy combined with other physical therapy methods in patients with knee arthrosis.

ESC-ID: 1469
Authors: Janikowska K, Fidut J
Country: Poland
University: Medical University in Lublin , Department: Disaster Medicine

The damage of the knee in more than 10% of the population over 55 years old is often caused by arthrosis. This dysfunction is a result of inflammatory reaction of the synovial membrane and stabilization structures. Untreated can lead to handicap or immobilization and therefore to another disorders.
Aim: The aim of the study was to compare physical therapy methods combined with and without cryotherapy in patients with arthrosis of knee joint.
Material and Methods: The research was conducted in Institute of Agricultural Medicine in Lublin. Patients were divided into two groups. The first group consisted of 50 patients with gonarthorsis treated in ambulatory with use of local cryotherapy and other physical therapy methods. In control group were included 38 patients with gonarthrosis treated with use of the same physical therapy methods as research group but without cryotherapy. Methods were based on questionnairies, observations, objective and subjective estimations.
Results: Over 80% of the patients treated with cryotherapy was satisfied with effects of this therapy (63% in control group). The result was decreasing level of pain on around 2 grades in VAS scale in study group and around 1,3 grade in VAS scale in control group. The range of the motion of the knee joints increased in study group in around 11,3 and 3,1 in control group. The circumference of the knee was reduced around 1,1 cm in study group and 0,4 cm in control group. The value of index WOMAC was diminished about 17,3% in group with cryotherapy and 11,9% in control group. The results of functional tests pointed on statistically significant effect in research group.
Conclusion: Our results show that cryotherapy is an effective method in therapy of symptoms of arthrosis of the knee. Patients mostly pointed analgesic, antiedematous and relaxing effect, which improved their general condition.

Alternative manual therapy techniques in managment of "tennis elbow"

ESC-ID: 1470
Authors: Fidut J, Janikowska K
Country: Poland
University: Medical University in Lublin , Department: Disaster Medicine

Introduction: „Tennis elbow“ is a condition characterized by the pain in a region of lateral epicondylus of humerus, weakness and dysfunctions of upper extremity. The standard management offers methods of physical therapy, pharmacotherapy, immobilization and surgical techniques. Recently manual therapy is more often applied in this condition especially with Mulligan Therapy Concept, which is a modern and still not well known method.

Materials and methods: This paper presents therapy according to the Mulligan Concept conducted on patients suffering with „tennis elbow“. The mobilization with movement with use of the mobilization belt was applied on affected elbow during the 6 sessions of therapy. All procedures were performed by certified Mulligan Concept practitioner. The VAS, PRTEE scales and Quick DASH questionary were used to asses the effectiveness of this management.
Results: The significant reduction of pain in the lateral epicondylus region and values of PRTEE and Quick DASH questionary were observed.
Conclusions: Manual therapy according to the Mulligan Concept is an effective method in decreasing symptoms of „tennis elbow“.

Session: Pathology

Reprogramming of miRNA networks in cancer and leukemia

ESC-ID: 486
Authors: Volinia S, Galasso M, Costinean S, Tagliavini L, Gamberoni G, Drusco A, Marchesini J, Mascellani N, Sana ME, Abu Jarour R, Desponts C, Teitell M, Baffa R, Aqeilan R, Iorio MV, Taccioli C, Garzon R, Di Leva G, Fabbri M, Catozzi M, Previati M, Ambs S, Palumbo T, Garofalo M, Veronese A, Bottoni A, Gasparini P, Harris CC, Visone R, Pekarsky Y, de la Chapelle A, Bloomston M, Dillhoff M, Rassenti LZ, Kipps TJ, Huebner K, Pichiorri F, Lenze D, Cairo S, Buendia MA, Pineau P, Dejean A, Zanesi N, Rossi S, Calin GA, Liu CG, Palatini J, Negrini M, Vecchione A, Rosenberg A, Croce CM
Country: Italy
University: Ferrara , Department: Morphology and Embriology

Aim: miRNAs are global regulators of protein output. Typically miRNAs have been studied by using the gene profiling approach. Each miRNA has been studied for its single contribution to differential expression or to a compact predictive signature. However the effect of microRNAs on cell pathology and physiology is likely to be complex for two reasons: 1)their activity is exerted in a one-to-many fashion, such that each miRNA can control translation of tens or even hundreds of different coding messengers and 2)a single messenger can be controlled by more than one microRNA. Thus, we propose a paradigm shift to the study of miRNAs in cancer by applying a systems biology approach. For this purpose we built miRNA gene networks by using our very large expression miRNA database. We studied miRNA profiles in 4419 human samples (3312 neoplastic, 1107 non-malignant), corresponding to 50 normal tissues and 51 cancer types. We inferred genetic networks directly from miRNA expression data in normal tissues and cancer. We also built, for the first time, specialized miRNA networks for different solid tumors and leukemias.
Methods and Materials: Data analysis and Network generation. An SQL miRNA internal database was built with the data retrieved from a large number of different experiments performed in our laboratory. All the results were log2-transformed. The Normalization was performed by using the quantiles normalization. BRB Arraytools was used to perform t-test over 2-classes experiments of F-tests over multiple classes. The network integrates only the positive kappa score term associations and is automatically laid out using Organic layout algorithm supported by Cytoscape. Banjo was used to infer the Bayesian network for the different tissues and diseases. For each tissue or disease all the mature expressed and varying miRNAs were used as input to Banjo. The expression values were preprocessed with Gene Pattern to only filter out non varying miRNAs. The static Bayesian network inference algorithm was run on the miRNA expression matrix by using standard parameters. We applied the MCL graph-based clustering algorithm to extraction of clusters from miRNA networks. yEd graph editor was employed for graphs visualization.
Results and Conclusion: By combining differential expression, genetic networks and DNA copy number alterations, we confirmed, or discovered, a host of miRNAs with comprehensive roles in cancer. We have presented a thorough analysis of miRNA tissue specificity in 50 different normal tissues grouped by 17 systems, corresponding to 1107 human samples. Then we inferred genetic networks for miRNAs in normal tissues and in their pathological counterparts. Normal tissues were represented by single complete miRNA networks. Cancers instead were portrayed by separate and unlinked miRNA sub-nets. Intriguingly, miRNAs independent from the general transcriptional program were often known as cancer-related. This „egocentric“ behavior of cancer miRNAs could be the result of positive selection during cancer establishment and progression, as supported by aCGH. Finally, we experimentally validated the miRNA network with ALL originated in Mir155 transgenic mice. Overall, miRNA networks in cancer cells defined independently regulated miRNAs. The target genes of these uncoordinated miRNA were involved in specific cancer-related pathways.

Intervention of certain natural polyphenols in diabetic nephropathy

ESC-ID: 614
Authors: Branisteanu SC, Bilha A, Bilha S, Ciocoiu M
Country: Romania
University: University of Medicine And Pharmacy "Gr. T. Popa", Iasi , Department: Pathophysiology

Aim: Investigation of the effects of an extract of natural polyphenols from Aronia melanocarpa in the nephropathy from experimental induced diabetes.
Methods and materials: We used 4 groups of Wistar rats: Group I (C) - control; Group II (D) - experimental induced diabetes with streptozotocin 55 mg/kbw, i.p., in a single dose; Group III (P) - received a natural polyphenols solution, 0.045 mg/kbw, by tube feeding for 16 weeks; Group IV (D+P) - received polyphenolic extract, in the same dose as group III, for 4 weeks before the induced diabetes and then for 12 weeks after the induced diabetes. We determined glycemia, total cholesterol, LDL-cholesterol, adhesivity index, renal function indicators like creatinine and blood ureea nitrogen (BUN) and morphofunctional changes in kidney.
Results: Mean hyperglycemia in rats suffering from diabetes and without polyphenolic protection increased progressively. In rats from group (D+P) with polyphenolic

protection glycemia increased with only 84.78% compared with control group and decreased with 73.27% compared with diabetic group. Glycosylated hemoglobin values, considerably high in the diabetic group, diminish significantly in the protected group (D+P). LDL-cholesterol increased with 92.8% in group D compared with control group and decreased with 40.06% in group (D+P) compared with group D. Total cholesterol levels were with 27.13% higher in group D compared with group C and with 7.39% lower in group (D+P) compared with control group. Creatinine and BUN were also elevated in diabetic rats compared with control rats and they were significantly reduced ($p<0.001$) in animals treated with natural polyphenols. Diabetic platelet adhesion is considerably lowered by the polyphenols extracted from Aronia melanocarpa, as compared to the diabetic group. Depending on the significance threshold values (p), the statistical analysis reveals highly significant differences ($p<0.001$) between the D and the control groups, and significant differences between the D+P and the D groups. Upon the microscopic examination of the glomerules an increase in the lipid incorporation in the glomerules and also in the interstice, as well as an increase in the LDL deposit in the glomerulate basal membrane, with the advance of the renal injuries were observed in D group. In advanced stages, glomerular sclerosis is accompanied by the appearance of vessels that are hyperpermeable (which allow proteinuria). In the D+P group, renal lesions are almost inexistent. Discrete alterations are limited to a minor flattening of the tubular epithelium.
Conclusions: The delivery of plant polyphenols extracted from Aronia melanocarpa fruit significantly improves the dyslipemia triggered by diabetes mellitus and the microangiopathic lesions. Natural polyphenols administration offer renal protection in the nephropathy from experimental induced diabetes.

Comparison of EGFR FISH and EGFR SISH in non-small cell lung cancer

ESC-ID: 688
Authors: Wulf M, Behnke S, Soltermann A, Tischler V
Country: Switzerland
University: University of Zürich , Department: Institute for Surgical Pathology

Background: Epidermal growth factor receptor (EGFR) gene copy number is considered to be a prognostic marker for overall survival and a significant predictor of EGFR mutations in non-small cell lung cancer (NSCLC). Its evaluation is usually performed within the EGFR status using fluorescence in situ hybridization (FISH). Due to the different disadvantages of this method e.g. the need to work in darkness and in some cases difficulties of morphology in the DAPI counterstained slides, other methods have been developed such as silver in situ hybridization (SISH). We aimed to compare the diagnostic value of these two methods in the determination of EGFR gene copy number in NSCLC.
Methods: Tumours from 56 patients assembled on a tissue micro array have been stained once with an EGFR FISH probe (Abbott Molecular) and once with an EGFR SISH probe (Ventana). FISH analysis was performed in 60fold magnification, counting the signals of 50 nuclei from two different tumour sites. SISH analysis was performed in 63fold magnification using a common light microscope, also counting the signals of 50 nuclei from two different tumour sites. Tumours have been classified according to the criteria of Cappuzzo et al. Two sided Fisher's exact test was used to compare the results. Associations with clinicopathological parameters were calculated by Chi-squared tests. Membranous EGFR protein expression was determined by semiquantitative evaluation of immunohistochemical stainings by two pathologists.
Results: Both EGFR FISH and SISH showed positivity in 5.4% (3/56) of the cases. Evaluation with SISH showed the same results as with FISH comparing FISH positivity and SISH positivity according to Capuzzo criteria ($p<0.01$). Comparing the exact Cappuzzo Score also shows a significant correlation ($p<0.01$). Associations with size, vessel or pleura infiltration, pT, pN, pM, grade or histological subtypes were not found. EGFR positivity determined by FISH or SISH did not correlate with membranous EGFR expression.
Conclusion: Using SISH for EGFR gene copy number analysis may be a simpler to perform and less expensive alternative to FISH because morphology is easier to evaluate, a fluorescence microscope is not required and slides can easily be archived.

Correlation of expression of estrogen and progesterone receptors and HER-2 with the stadium of illness and histological grade in invasive ductal carcinoma of the breast

ESC-ID: 718
Authors: Stankovic J, Mrdja V, Vukadinovic G
Country: Bosnia-Herzegovina
University: University of Banja Luka , Department: Medical Faculty of Banja Luka

Introduction: Invasive ductal carcinoma of the breast is situated in the group of malign epithelial tumors of breast with a characteristic to invade surrounding tissue and tendency of metastasis to remote places. It makes 70 % of malign epithelial tumors of breast and its incidence is constantly increasing. The aim of work: The aim of the research was to investigate expression of estrogen and progesterone receptors and HER-2 compared to TNM stadium, histological grade and presence of metastasis in axillary lymph nodes.
Material and methods: The study includes 42 patients which were diagnosed to have invasive ductal carcinoma of the breast. The patients were grouped according to: TNM stadium, grade (by using Elston's modification of Bloom-Richardson grading system) and presence of metastasis. The research was done according to microscopic analyses of the preparations colored by standard hematoxylin-eosin method. Hormonal receptors (estrogen and progesterone) and HER-2/ neu status at each tumor were determined by immunohistochemically method with the help of H-Score and HER-2/neu Score.
Results: Analyses confirmed that there was a significant difference in terms of: presence of axillary metastasis and the expression of HER-2 receptors ($p<0,05$) and TNM stadium and the expression of progesterone receptors ($p<0,05$). The difference from statistic significance ($p<0,05$) wasn't found by comparing estrogen and progesterone receptors and HER-2 with histological grade.
Conclusion: This research has proved that patients with negative expression of HER-2 more often had metastasis

in axillary lymph nodes. Low expression of estrogen and progesterone receptors was proved in a higher stadium of the illness, whereby the correlation of stadium and the expression of progesterone receptors was significant in terms of statistics.

Morphological analysis of ovarium carcinom after chemotheraphy

ESC-ID: 739
Authors: Misic J, Danica A, Aleksandar S, Petar S
Country: Serbia
University: School of Medical University of Ni_ , Department: Institute of pathology

Introduction: The treatment of advanced ovarian carcinoma includes optimal cytoreductive surgery followed by chemotherapy. In some circumstances preoperative chemotherapy may be given before surgery.
Aim: The aim of this study was to examine histopathologic features of ovarian carcinoma after chemotherapy.
Material and methods: The authors analyzed biopsies from 20 patients with advanced ovarian carcinoma (FIGO stage III or IV) before and after chemotherapy. The standard histological sections were used to assess histopathologic features of ovarian carcinoma.
Results: In fourteen (70%) patients with ovarian carcinoma (12 serous and 2 endometrioid type), there was a significant response to chemotherapy. Histopathologic features present in chemosensitive carcinoma included presence of small groups of tumor cells in fibrotic stroma. Nuclei of residual tumor cells were enlarged, bizarre and irregular. The cytoplasm was either intensely eosinophilic or clear. There were pronounced stromal changes with fibrosis, inflammation, collections of foamy macrophages, cholesterol cleft, haemosiderin deposits, and psammoma bodies.
Conclusion: Accurate histologic typing and grading of ovarian carcinoma is impossible when preoperative chemotherapy is used.

E-cadherin's immunohistochemical expression in gastric cancer; correlations with clinicopathological factors and patients' survival.

ESC-ID: 780
Authors: Hedesan O, Nitu-Scaueru S, Nitu-Scaueru A, Lazar D
Country: Romania
University: "Victor Babes" University of Medicine and Pharmacology, Department: Preclinical Medicine

Background: The aim of this study is to investigate the iummunohistochemical expression of E-cadherin in gastric carcinomas and in the surrounding mucosa (normal or with chronic atrophic gastritis lesions, intestinal metaplasia or displasia).
Material and methods: We included 61 patients with gastric a carcinomas operated in the Emergency County Hospital Timisoara. We analyzed the E-cadherin's immunohistochemical expression, the correlation with clinical and pathological factors and the patients' outcome. The positive homogeneous pattern of staining for the cellular membranes is considered normal. The negative homogeneous or the heterogeneous pattern (of the cytoplasm and membrane) represented aberrant E-cadherin expression.
Results: Areas of chronic atrophic gastritis and intestinal metaplasia presented a normal pattern of immunostaining for the membranes. Aberant E-cadherin expression was noticed in 30 cases of gastric carcinomas (49,2%) and in 11 cases (35,5%) of epithelial displasia in the surrounding tissue. Our results showed no correlation between E-cadherine's expression and gender, age, tumor location, pT, pN, pTNM, and lympho-vascular invasion. Aberrant E-cadherin immunostainings were significantly more frequent in diffuse type carcinomas in comparison with the intestinal type carcinomas (82,4% vs. 31,6%) (p= 0,000491 ES). Signet-ring carcinomas and anaplastic carcinomas presented a high proportion of aberrant immunostainings (82,4% and 100%), as well as poor differentiated carcinomas (61,5%). Carcinomas with distant metastases presented significantly more aberrant immunostainings then those without metastases (71.4% vs. 42,6%). 5 year survival rate was significantly lower in patients with aberrant E-cadherin expression in comparison with the patients presenting normal staining (10.0% vs. 22.6%).
Conclusions: In gastric carcinomas and areas of epithelial displasia aberrant E-cadherin expression was significantly more frequent in comparison with the surrounding normal mucosa (p<0.001 ES). Our data suggests a strong correlation between Lauren's classification of gastric carcinomas and E-cadherin immunohistochemical expression. Assessment of the survival curve of the patients' highlighted the role of prognostic factor for the aberrant immunohistochemical E-cadherin expression.

Functional activity of morphologically changed kidneys under conditions of pineal hyperfunction

ESC-ID: 1030
Authors: Krokosh I, Bobryk I, Petryshen O
Country: Ukraine
University: Bukovinian State Medical University , Department: Medical Biology, Genetics and Histology

Introduction: Health of Ukraine's population has become much worse due to urbanization and industrialization. An important factor is stress, which dominates in society.
Aim: Objectives of our research were to study ionoregulating function of the kidneys, which structural elements underwent morphological rebuilding under conditions of combined influence of aluminum and lead salts and immobilizing stress on the background of pineal hyperfunction. Materials: Scientific research was conducted on 30 mature nonlinear male albino rats with their body weight 0,15-0,18 kg, divided into two groups with 15 animals each. The first group was the control one, the second one was experimental. The animals of the second group during 14 days were injected with aluminum chloride in the dose of 200 mg/kg and lead chloride in the dose of 50 mg/kg intragastrically, and on the 14th day of the experiment the animals were subjected to 1-hour immobilizing stress.To achieve water diuresis, which conditions allow performing selective estimation of the vascular-glomeru-

lar function, proximal and distal segments of the nephron, the rats were loaded with water in the volume of 5% of their body weight and urine was collected during 2 hours.
Methods: Biochemical analysis revealed that ionoregulating function of the morphologically changed kidneys was characterized by increase of sodium ions excretion in the experimental group (0,033 ± 0,004 mcmol/24 hours against 0,026 ± 0,001 mcmol/24 hours of the control group). On the contrary, sodium filtration power in comparison with the control group decreased (16,4 ± 2,09 p<0,05 mcmol/min against 23,8 ± 1,9 mcmol/min in the control animals). Restriction of nephron filtration loading by sodium is conducted on the background of substantial inhibition of the glomerular transportation of this cation. It can be clearly seen on the parameters of absolute (16,3 ± 2,08 p<0,05 mcmol/min against 23,8 ± 1,9 mcmol/min in the control animals) and relative reabsorption (99,6 ± 0,03% p<0,001 against 99,9 ± 0,01% in the control animals), which underwent changes in comparison with intact animals. The parameters of proximal reabsorption decreased, which was not found on the parameters of distal transport, and which were higher in the experimental group than those of the control.
Conclusions: Thus, a combined influence of aluminum and lead salts and stress on the background of pineal hyperfunction results in morphological changes in the kidney architectonics, which is marked on the functional properties of the kidney structural elements.

Is phosphorylation of the androgen receptor of clinical significance in the development and progression of prostate cancer

ESC-ID: 1120
Authors: Adams C, McCall P, Edwards J
Country: United Kingdom
University: University of Glasgow , Department: Faculty of Medicine

Introduction Prostate cancer is one of the most common malignancies found in men, ranking second in the UK behind lung cancer as a cause of malignancy-related mortality. P. McCall et al. presented evidence that increased phosphorylation of the androgen receptor at serine-210 in the transition from hormone-naive to hormone-refractory disease was associated with decreased disease-specific survival. Studying expression levels and phosphorylation status of the androgen receptor at the time of diagnosis of prostate cancer will enable the development of a better understanding of the pathogenesis of this disease and could prove to be of use in developing better prognostic markers.
Methods: Immunohistochemistry was employed to measure the expression of total androgen receptor and androgen receptor phosphorylated at serine-81 in hormone-naive prostate cancer samples from a cohort of 114 patients. The expression of these proteins was assessed using the weighted histoscore technique. Histoscores were compared with patient Gleason grade, time to recurrence and overall survival. All of this information was readily available for each patient. Results expression of androgen receptor phosphorylated at serine-81 was largely shown to not be statistically significant with any clinical outcome measures. Cytoplasmic expression of phosphorylated serine-81 was found to correlate with nuclear phosphorylated serine-81 expression ($p = 0.001$). expression of nuclear total androgen receptor was shown to correlate with the presence of metastases at initial diagnosis ($p = 0.022$) and with disease-specific survival ($p < 0.001$). expression of total androgen receptor was not found to correlate with any other clinical variables.
Conclusions: In summary, increased total androgen receptor expression in the nucleus is associated with decreased disease-specific survival. This could therefore serve as a prognostic marker for patients with hormone-naive prostate cancer. However, androgen receptor phosphorylated at serine-81 could not be used as a suitable prognostic marker.

Significance of the fine needle aspiration cytology in the diagnosis of thyroid gland nodular lesions

ESC-ID: 1185
Authors: Jelic J
Country: Serbia
University: Medicinski Fakultet Novi Sad , Department: opsta medicina

Introduction: Fine Needle Aspiration Cytology (FNAC) is important diagnostic test for the evaluation of goiter, carcinoma of the thyroid and preoperative diagnosis of Solitary Thyroid Nodule (STN). It is used as a screening method for the selection for surgery and its use considerably lowered the number of surgeries.
Aim: To determine diagnostic relevance of FNAC and its role in thyroid gland diseases.
Material and methods: Research includes 69 randomly chosen cases of thyroid nodules that underwent thyroid surgery at our clinic in May 2008 -May 2009 and which had records of preoperative thyroid FNA. Biopsy was performed under ultrasound control. Aspirated material was air-fixed, stained by May-Grünwald-Giemsa and Papanicolau method, and examined with light microscope. Thyroid tissue samples, attained by surgical resection, were fixed in formalin, molded in paraffin, stained with Haematoxylin and Eosin and examined with light microscope.
Results: In a examined population females were significantly numerous, average age was 49. In 62, 32% patients were diagnosed by FNA as having benign lesions of the thyroi, 13,4% as having suspicious of benign neoplasm, in 14,49% carcinoma (11,59%) or suspicious of malignant neoplasm. Two cases were false negative: hystopatological analysis has shown follicular and papillary carcinomas. Correlation test had shown statisticaly significant connection between FNAC and histopatologic findings ($p < 0,001$).
Conclusions: Results confirmig that FNAC is rapid, secure and cost-effective procedure in the diagnosis and evaluation of patients with thyroid nodules. The main goal is to distinguish nodules that require surgery from those that do not.

Biochemical and histopatological effects of mobile phone exposure on rat hepatocytes and brain

ESC-ID: 1246
Authors: Tatic M, Mitic A, Skakic A
Country: Serbia
University: University of Nis , Department: Faculty of Medicine

Heading: Microwave radiation MWR is widespread in human environment. The most frequent sources of MWR are mobile phones and cell towers. The effects of MWR are still unknown and there are insufficient data about long-term MWR effects on hepatocytes and brain structures.
Aim: The aim of this paper was to investigate the biological effects of mobile phone microwave radiation on the brain and liver of experimental animals and to determine the increase in oxidative stress as a possible pathogenetic mechanism for harmful effects of long-term exposure.
Methods: Wistar rats, 3 months old, were divided into two groups: I-rats constantly exposed to MWR (3 female and 2 male) and II-control animals without near source of electromagnetic field (EMF) (3 female and 2 male). The microwave radiation was produced by a mobile test phone (model NOKIA 3110; Nokia Mobile Phones Ltd.) connected to a Communication Test Set (model 4202S; Wavetek, Germany). A 900 MHz electromagnetic near-field signal for GSM (Global System for Mobile communication at 900 MHz, continuous wave, analog phone) system was used. The whole-body specific energy absorption (SAR) rate was estimated as 0.025-0.05 W/kg (E = 9.8-18.3 V/m, B = 4.8-8.6 μT). Rats were sacrificed after 3 months of MWR exposure. The liver and brain were fixed in 10% formaldehyde and paraffin sections were stained by HE. The biochemical analyses comprised the determination of serum activity of AST (Aspartate aminotransferase), ALT (Alanine transaminase), GGT (Gamma-glutamyl transpeptidase) and LDH (Lactate dehydrogenase), as well as determination of serum concentration of sodium, potassium and chloride. Lipid peroxidation was determined by measuring the quantity of malondialdehyde (MDA).
Results: Slightly increased number of micronuclei and discrete perivenular fatty changes were only histopathological findings in the liver of exposed rats. The discrete reduction of gray matter and reduced size and number of dendritic spines of Purkinje cells in cerebellum were notified as well. The serum activity of ALT was significantly increased ($p<0.05$), while activities of AST, GGT and LDH did not changed in the exposed rats. Potassium serum concentration was significantly higher in the exposed rats, while the concentration of sodium and chloride did not differ. The MDA concentration was significantly higher in the brain and liver tissues of MWR-exposed rats.
Conclusion: The results in this study show significant increase in lipid peroxidation as a direct indicator of the hepatocytes and brain cells' injury under a long-term (90 days) mobile phone microwave exposure. The hyperkalemia could be the possible systemic marker of impaired cells membrane fluidy and increased permeability, alongside with increased ALT activity as marker of hepatocelular damage. Disorders of hypothalamo-hypophyseal axis lead to disturbances in affective behaviour, but also to disturbances of neurovegetative functions, which leads to behavioral changes and increased appetite and weight gain in exposed animals.

Aberrant immunohistochemical expressions in gastric carcinomas

ESC-ID: 1354
Authors: Nitu Scaueru S, Hedesan O , Nitu Scaueru A, Lazar D
Country: Romania
University: "Victor Babes" University of Medicine and Pharmacology, Department: Pathology

Aims and Methods: The aim of the study was to assess the profile of the mucins MUC1,MUC2 and MUC5AC,on a batch of 61 patients with gastric carcinomas, using monoclonal antibodies and to correlate mucins expression with the clinicpathological factors and survival of the patients. Results : Mucins expression in the gastric carcinomas is heterogeneous and includes both mucins normally synthesized by gastric mucosa and „de novo" intestinal mucins. Our results showed a significantly higher MUC1 immunopositivity in patients over 61vs. under 60 years(78.1% vs.55.2%,p=0.046);MUC1 was positive in 64.5%of antral,73.3% of corporeal,70%of pangastric,66.7%of gastric stump and 50%of cardial carcinomas. We noticed a higher frequency of MUC1 immunoreactions in carcinomas with glandular differentiation(73.7%)vs. the diffuse type(53%of cases). Tubular and papillary adenocarcinomas became positive in 78.7%and 80%of cases, respectively, significantly higher vs. the other histological types(p=0.00063).MUC1 expression does not correlate with the degree of tumor differentiation, lymphovascular invasion, depth of invasion, presence of distance metastases and pTNM staging. We marked a significantly higher number of positive reactions in cases with lymphonodular metastases vs. the absence of metastases(72.1%vs.55.6%,p=0.047).5 years survival rate was significantly reduced in patients with MUC1(+) tumors vs.MUC1(-)(p=0.0368).MUC2 expression was positive in 41.9%cases of antral,40%of corporal,30%of pangastric and 25%of gastric stump carcinomas. We noticed a higher immunopositivity in the intestinal and mixed type carcinomas and also in the mucinous adenocarcinoma vs. the other histological types ($p<0.001$).MUC2 expression does not correlate with pT, pN, pM and pTNM, and has no effect on patients survival.MUC5AC immunostaining was positive in 80.6%of antral carcinomas; the reaction was significantly more frequent in the diffuse vs. intestinal type (88.2% vs.63.2%, $p = 0.038$)and signet-ring cell carcinomas vs. the other histological types ($p = 0.039$). MUC5AC expression correlates with the degree of differentiation.
Conclusions: Immunohistochemical expression of the mucins is correlated with the histological type of gastric carcinomas:MUC1 with the glandular differentiations. MUC2 with mucinous carcinoma and MUC5AC with the diffuse type and signet-ring cell carcinomas.MUC1 immunohistochemical expression represents an important prognostic factor,the survival of the patients with MUC1(+) tumors is reduced vs.MUC1(-)(12.2% vs.25%).

Thymidilate synthase expression predicts longer survival in stage ii colon cancer patients treated with 5-flurouracil independently from microsatellite instabilitY

ESC-ID: 1423
Authors: Donada M, Bonin S, Nardon E, De Pellegrin A, Decorti G, Stanta G.
Country: Italy
University: Univeristà degli studi di Trieste , Department: ACADEM

Aim: 5-Fluorouracil (5-FU) is the most common used therapeutic agent for colon cancer treatment. Several studies have evaluated in colon cancer patients, either the role of genes involved in the 5-FU pathway, such as thymidylate synthase (TS), thymidine phosphorylase (TP) and dihydropyrimidine dehydrogenase (DPD) or the role of microsatellite instability (MSI) as prognostic or predictive markers for adjuvant chemotherapy efficacy, with discordant results. In this study we investigated the combined effect of TS, TP, DPD mRNA expression and MSI status in primary tumours of colon cancer patients, all treated with 5-FU adjuvant therapy.
Methods: TS, TP and DPD expression levels were investigated by real-time quantitative RT- PCR on RNA extracts from formalin-fixed and paraffin-embedded tissues of 55 patients with colon adenocarcinoma. In the same case study MSI status was assessed on DNA extracts.
Results: A higher TS expression was significantly associated with a longer survival for patients with cancers of stage II ($P<0.01$) but not for those with stage III ($P=0.68$). In addition, in multivariate analysis, a higher TS expression was significantly associated with a decreased risk of death (HR 0.13, 95% CI 0.03-0.59, $P<0.01$), while the MSI status did not have effects on patients' survival.
Conclusions: This retrospective investigation suggests that TS gene expression at mRNA level can be a useful marker of better survival in patients (especially of those with cancers of stage II) receiving 5-FU adjuvant chemotherapy, independently of the MSI status.

Session: Pathology – Poster

Nephrotoxicity of birthwort (Aristolochia clematitis)

ESC-ID: 476
Authors: Miljkovic D
Country: Serbia
University: University of Novi Sad , Department: Department of Histology and Embryology

Aim: The aim of this study was to investigate nephrotoxicity of plant Aristolochia clematitis in labaratory mice of NMRI type.
Material and methods: Experimental animals were divided in four groups - three groups that received different concentration of birthwort infusion (40g/1000ml, 20g/1000ml, 10g/1000ml) and one control group that received only water. Using metabolic cages after 24-hours we collected diuresis of each experimental and control group. The urine was measured and the general analysis was performed. Only six out of one hundred and twenty mice died, while others were sacrificed. The kidneys and the entire urogenital system of each individual were extracted and fixed in 10% formalin. After adequate dehydration, tissue was moulded in paraffin and cut on the microtome. Sections were stained with hematoxylin and eosin (H and E).
Results: Diffuse interstitial nephritis in acute phase of inflammation can be observed on every histological section of kidneys. All experimental animals had characteristic infiltrations around glomeruli, composed of clusters of lymphocytes and plasma cells. Also we noticed changes in tubule parenchyma. There is a difference in quantity of excreted urine between mice in all experimental groups that received infusion and control mice.
Conclusions: The changes on kidneys caused by birthwort with its toxic effects could be demonstrated in the initial stages of Balkan endemic nephropathy (BEN) and Chinese herb nephropathy. Key words: mice, Aristolochia clematitis, nephrotoxicity, diffuse interstitial nephritis

Features of metastatic ovarian tumors

ESC-ID: 570
Authors: Jovanovic A, Marija A, Branislav A
Country: Serbia
University: University of Nis, Faculty of medicine , Department: medicine

Background/Aim: Ovary is the organ of the female reproductive system most commonly affected by metastases. The aim of the study was to determine features of metastatic ovarian tumors depending on the site of the primary malignant tumor.
Methods: The study group consisted of 41 patients with histopathologically confirmed metastatic ovarian tumors, in the period from 1 January 2000 to 31 December 2007. Regarding the site of the primary malignant tumor, those with secondary ovarian tumor were divided into two groups: group A - primary malignant tumor involving the genital organs (n=30) and group B - primary malignant tumor of extragenital origin (n=11). Results. Secondary ovarian malignancies were the consequence of endometrial carcinoma spreading in 73.17%, breast carcinoma in 19.51%, stomach carcinoma in 4.88% and colon carcinoma in 2.44% of the cases. No significant differences were found between the group A and group B by the factors of age, body mass index, parity and menopausal status. Contrary to the group A, metastatic tumors in the group B patients were more commonly asymptomatic , bilateral, with larger ovarian diameter, associated with ascites and abdominal metastases, all of statistical significance.
Conclusions: With non-genital primary tumors, secondary ovarian deposits were frequently asymptomatic, bilateral, associated with larger ovarian diameter, ascites and abdominal metastatic deposits, compared to malignant tumors of genital origin.

Mineralization of human globus pallidus

ESC-ID: 712
Authors: Kopani M, Barcikova A, Sisovsky V, Caplovicova M, Jakubovsky J
Country: Slovakia
University: Comenius Comenius University in Bratislava, Faculty of Medicine , Department: Institute of Pathological Anatomy

Background: Some substances get into the internal environment of living bodies because of metabolic disturbances (congenital or acquired), as a result of polluted environment or ageing process. Mineralization plays a decisive role in the process of aging and neurodegenerative diseases.
Aim: To investigate a deposits chemical composition of Globus Pallidus Of The Human Brain.
Methods and Materials: A total of nine formalin-fixed and paraffin-embedded human necropsy tissue specimens with globus pallidus of normal brain were besides conventional histological stains evaluated by histochemistry with using Perls' method and Alcian blue, by light microscopy and by scanning electron microscope with energy-dispersive microanalysis, for any chemical elements presence and distribution in brain tissue.
Results: A positive reaction for iron was found in the vicinity of small blood vessels, in intracellular and extracellular space of glial cells. Besides iron and oxygen, magnesium, silicon, calcium and phosphorus were demonstrated. Mucopolysaccharide depositions precede mineralization of basal ganglia especially iron and are link to calcium depositions.
Conclusion: The reason and relevance of mineralization and deposits formation is still unknown. This process may lead to reduction of free ions and subsequent reduction of toxicity caused by some chemical elements. It is argued that mineralization is normal result of metabolic processes and is associated with alternation in the enzyme system of the cells during ageing.

Histomorphological and immunobiological characteristics of breast cancer in women under age 40

ESC-ID: 776
Authors: Gajic I
Country: Serbia
University: University of Novi Sad , Department: Faculty of Medicine

Introduction: Most human cancers, including breast one, increase in frequency with aging. Breast cancers that occures in younger women have more aggressive biological behaviour than breast cancers that occures in older women.
The aim: To explore the histomorphological and immunobiological differences of breast cancers between patients under 40 and patients that are 40 years and older.
Matherial and methods: The study included 224 women with primary invasive ductal carcinoma of the breast, treated at the Oncology Institute of Vojvodina, from 2007. to 2010. The patients were sepparated in two groups: first group consisted of patients uder 40, and second group consisted of patients that are 40 years or older. Tumor size, lymphonodal status, oestrogen and progesterone status and HER2 status were resumed from pathohistological findings of examined patients. With examination of hematoxylin-eosin stained breast cancer tissue we defined histological grade, presence of lymphocyte infiltration in tumor stroma and tumor necrosis.
Results: 28 women included in the study were under 40, and 196 women were age 40 and older. Characteristics of breast cancers in younger patients were: histological low grade cancers with extensive necrosis, lymphocyte infiltration and negative oestrogen and progesterone receptors. No significant difference was found between the patients age and tumour size, presence of axillary lymph node metastases nor HER2 expression.
Conclusion: In this study we founded significant association between poor prognostic and predictive indicators and younger age. For younger patients is characteristic more aggressive biological tumor phenotype.

Effective stabilisation of mast cell granules by sodium cromoglycate leads to different redistribution of pulmonary toluidin-blue detectable mast cells during a hypoxia and posthypoxic recovery.

ESC-ID: 839
Authors: Novotny T, Krejci J, Svehlik V, Wasserbauer R, Malikova J, Uhlik J, Vajner L
Country: Czech Republic
University: Charles University in Prague, 2nd Faculty of Medicine , Department: Department of Histology and Embryology

In rats, the environment with low content of oxygen elicits the development of hypoxic pulmonary hypertension consequent to pulmonary vessel remodelling process (RP). Having returned to normoxic environment, pulmonary vascular bed reveals re-remodelling process (RRP) to original shape. Both processes are performed due to the mast-cell (MC) products. Hypoxic period also leads to different redistribution of pulmonary toluidin-blue detectable periarterial mast cells (TBDMC). We assessed MC distribution changes depending on the hypoxia duration, recovery duration and various timing of the intraperitoneal sodium cromoglycate administration (SCA). Total 112 Han Wistar rat males were divided in 14 groups and exposed to acute (4 days) and chronic (21 days) normobaric hypoxia (10 % of oxygen), respectively. Some were allowed to recover 4 days or 21 days under variously timed SCA. On the lung slides, distribution of TBDMC was evaluated in parallel sections stained with toluidine blue using the image analyzer software NIS Elements 3.0 AR. The results were statistically evaluated (t-test and one-way ANOVA). Acute hypoxia leads to decrease in number of TBDMC in t. adventitia of all pulmonary arteries types, compared to normoxic control group (NC). SCA leads to decrease in number of TBDMC only at the level of conduit arteries with very restricted RP of prealveolar and peripheral arteries, and enlargement of t. adventitia of conduit arteries. Chronic hypoxia as well as SCA at the end of chronic hypoxic period lead to decrease in number of TBDMC in t. adventitia of peripheral and conduit arteries, compared to NC. Morphological findings are featured with progression of hypoxic RP at the level of booth these types of arteries. SCA at the beginning of hypoxic exposure leads to decrease in numbers of TBDMC in t. adventitia of all arterial types. RP is delayed and modified. During the short-time recovery

period without SCA and with SCA at the beginning of hypoxic period, there is a persistence of decrease in number of TBDMC, compared to NC, with early signs of RRP at the level of peripheral and conduit arteries. SCA at the beginning of recovery period leads to MC stabilisation at the level of all pulmonary arteries and to increase in number of TBDMC in comparison to the long-time hypoxia group. There are no signs of RRP. Long-time recovery after long-time hypoxia leads to decrease in number of TBDMC at the level of peripheral and conduit arteries in groups with no SCA as well as in the group with SCA at the beginning of recovery period. RRP is still running. SCA at the beginning of hypoxic period leads to reversion in number of periarterial TBDMS to the normoxic level. RRP is already completed. Changes in distribution of TBDMC in t. adventitia of pulmonary arteries are in context with their role and degranulation activity during both hypoxic RP and recovery RRP. MC stabilisation leads to changes in distribution of TBDMC.

Oxidizing modification of albumens in the invasive trophoblast of uteroplacental section at disturbances of gestational change of spiral arteries of the uterus

ESC-ID: 864
Authors: Zabolotna I, Bukoros T, Davydenko I
Country: Ukraine
University: Bukovinian State Medical University , Department: Pathomorphology and Forensic Medicine

The objective of the research was to determine peculiarities of processes of oxidizing modification of albumens in separate classes of cells belonging to the population of the invasive trophoblast of uteroplacental section at disturbances of gestational change of spiral arteries of the uterus. In order to achieve the given objective the histochemical method of coloring histologic sections with bromphenol blue was applied according to Michel Calvo, with computer spectroscopic analysis of digital images for objective assessment of the color. The R/B indicator was used as an objective measure, which value depends on the correlation of amino and carboxyl groups of albumens and is interpreted the following way - growth of the indicator shows the increase of oxidizing modification of albumens. Two groups of the pregnant have been examined: the main group - women, whose uteroplacental section morphologically showed lack of gestational change of spiral arteries of the uterus (n=28), and the control group - women, who morphologically showed none of the abovementioned dysfunctions (n=31). The following classes of invasive trophoblast have been taken: 1) „X-cells“ in Nitabuch fibrinoid of the basal plate; 2) intramural endovascular cells of the trophoblast of the basal plate; 3) intra-arterial endovascular cells of the trophoblast of the basal plate; 4) small spindle trophoblast cells of the basal plate; 5) multinucleate giant trophoblast cells of the basal plate. On the basis of comparisons performed for average change tendencies of the R/B indicator by means of the two-sided unpaired Student's t test, all the classes of cells of the invasive trophoblast in the main group have demonstrated growth ($P<0,05$) of oxidizing modification of albumens in the cytoplasm of cells on the average by 1,3-1,8 times as compared to the control group. The results demonstrated above allow making the conclusion that intensification of oxidizing modification processes of albumens can be one of the causes of disturbances of gestational change of spiral arteries of the uterus during pregnancy, which is an underlying cause of unfavorable changes in the formation and functioning of various albumens of the cytoplasm of the invasive trophoblast, and namely, enzymes, which are responsible for the processes of trophoblast invasion, and, correspondingly - for necessary physiological gestational change of spiral arteries of the uterus.

Correlation between Ki67 labeling index and molecular phenotype of invasive ductal carcinoma of the breast

ESC-ID: 929
Authors: Gachechiladze M, Gudadze M, Narsia N, Burkadze G
Country: Georgia
University: Tbilisi State Medical University , Department: Pathological Anatomy

Introduction: Breast cancer is one of the major public health problems in Georgia. Ki67 is the nuclear antigen expressed in G1, G2 and M phases of the cell cycle, but not in G0 and therefore it serves as an excellent marker of proliferating cells. The ki67 labeling index (LI) is a powerful prognostic factor in many cancers, but its significance regarding to breast cancer is still not clear in published literature. The aim of our study was to evaluate the correlation between ki67 LI and molecular phenotype of invasive ductal carcinoma (IDC) of the breast.
Material and methods: Data from 80 patients with IDC not other specified (NOS) were retrospectively analyzed. Formalin-fixed paraffin-embedded tissue sections were stained with routine hematoxylin and eosin (H and E) and immunohistochemical methods using Novocastra™ antibodies against ER, PR (estrogen and progesterone receptors), Her2 and Ki67 (MIB-1) antigens. The ER and PR positivity were evaluated using semi-quantitative method, Her2 status was evaluated according to ASCO-CAP scheme and the ki67 LI was defined as the percentage of ki67 (MIB-1) positive cells. We have classified the cases in four tumor types according to the immunohistochemical phenotype, as: ER+PR+Her2- (ER and PR positive and Her2 negative); ER+, PR+Her2+ (ER and PR positive and Her2 positive); Her2+ (ER and PR negative with Her2 positive) and triple negative (all markers negative).
Results: From 80 cases of IDC, NOS: 52(65%) cases were ER+PR+Her2-, 6 (7.5%) - ER+PR+Her2+, 12(15%) - Her2+ and 10(1.25%) cases were triple negative; KI67 LI (mean + or - standard deviation) was 8.1% in ER+PR+Her2-, 18.6% in ER+PR+Her2+, 24.3% in Her2+ and 31.1% in triple negative tumors.
Conclusion: Ki67 LI was correlated with molecular phenotype of IDC,NOS ($P<0.001$). Ki67 LI is significantly higher in specimens from triple negative and lower in ER+PR+Her2- tumors and therefore it positively correlates with worse prognosis of IDC,NOS ($P<0.001$). According to our study results Ki-67 LI might serve as one of the important diagnostic markers for the early detection of malignant potential of the breast cancer, such as IDC,NOS.

Prognostic value of vascular epidermal growth factor receptor expression in lung carcinoma

ESC-ID: 1042
Authors: Bobic V, Keleman N, Josipovic T, Bera J
Country: Bosnia-Herzegovina
University: Medical faculty of Banja Luka , Department: pathology

Background: Lung cancer is biologically aggressive and the most common malignant tumor in human population with high incidence of mortality. Its incidence has been increasing until very recent years. EFGR (epidermal growe factor receptor) exist on the cell surface and it is activated by binding of its specific ligand, including EGF and TGF Á. Recent studies have demonstrated that angiogenesis is dependent by EGFR and it is in correlation with postoperative relapse(especially distant metastasis). EGFR is found in many human cancer and its excessive increasing with microvassel density (MVD) are very important prognostics factor in the development and malignancy of this tumors. AIM In this study we aimed to emphasiese that tumor angiogenesis - MVD, expression EGFR together with tumor stage and metastasis in lymphonodully are in correlation with prognosis of lung adenocarcinoma.
Material and Methods: In investigated population of 107 patients with lung adenocarcinoma we analysed MVD in primary tumor and expression on proangiogenic factors EGFR in tumor cells. Stage , MVD and expression of EFGR have been determined in specimens taken from material after surgical resection. Before the surgery it was not adjuvant therapy. EGFR expression in tumor cells was evaluated on final score. Score 0 - no stain membrane tumor cells; score 1 - stain of the part of membrane of tumor cells poor and moderate intensity in less than 10% cells; score 2 - stain complete membrane of tumor cells poor and moderate intensity more than 10% cells; score 3 - stain complete membrane very high intensity in more than 10% cells. Tumors with score 2+ or 3+ are classifycated in groups with high expression EGFR. For evaluation the degree of angiogenesis we used immunohystochemical identification of endothel cells with primary antibody CD31. In dependence of MVD patients were separated in three group: with low, moderate and high number of blood vessels.
Results: No significant statistical difference of EGFR expression was found between patients with nodal metastasis and patients without metastasis (p=0,961). Comparing the EGFR expression with the disease stage no significant difference was found (p = 0,828).EGFR expression in tumor cell was an important factor for survival time (0,0056). MVD was higher in patients with nodal metastasis when compared with non- metastasis cases but without statistical significance (p=0,244). Similarly angiogenesis was more intense in patients with stage IIIA disease when compared with the other lower stages but there was no statistical significance (p = 0,583). Furthermore, log rank analysis showed significant association with poor survival by higher stages (p = 0,022). And more intense angiogenesis of the tumors was a significant prognostic factor for reduced survival (p = 0,0024).
Conclusions: The most important prognostic factor for lung carcinoma is pathological stage . MVD may help in predicting the outcome of this group of cancers al time.

Histopathologic assessment of colonoscopic biopsies in cases of chronic diarrhea

ESC-ID: 1059
Authors: Soudhamini S, Gouri M
Country: India
University: Rajeev Gandhi University of Health Sciences, M. S. Ramaiah Medical College , Department: Pathology

Introduction: With passing generations and changing lifestyles an increase in incidence of gastrointestinal diseases has been noted. Patients referred for chronic diarrhea frequently undergo diagnostic endoscopic evaluation. There is limited data on the role for colonoscopy with biopsy for patients with chronic diarrhea in India.
Objectives: Primarily to determine the possible causes of chronic diarrhea on histopathological examination of colonoscopic biopsies; to estimate their prevalence. Also to examine the age-wise incidence of the major causes; to establish colonoscopy with biopsy as an effective tool in the diagnosis of chronic diarrhea by examining the number specific diagnoses obtained by the same; to correlate the histopathologic findings with clinical details.
Materials and Methods: We reviewed 200 samples of colonoscopic biopsies under light microscopy. Hematoxylin and Eosin; other stains as required were used. Only samples of chronic diarrhea of the large bowel type, of duration longer than 4 weeks were included. Known cases of small bowel diarrhea as well as diarrhea of proven infective origin were excluded from the study.
Results: Specific diagnoses in 95 cases[nearly 50%] included 34 cases of polyps, 32 cases of malignancy, 13 of Ulcerative colitis, 9 cases of Tubercular colitis, 5 cases of Solitary Rectal ulcer syndrome and 2 cases of Crohn disease. The maximum incidence of polyps preceded that of malignancies by a decade. Polyps were frequently associated with frank blood in stool; malignancies with occult blood positivity.
Conclusion: Colonoscopy and biopsy are a useful investigation in cases of chronic diarrhea to aid specific diagnoses. Nonspecific cases should be followed up. In the cases which are occult blood positive, malignancy should be ruled out.

Immunohistochemical evaluation of p53 expression in oral squamocellular carcinoma

ESC-ID: 1162
Authors: Mohor S, Lazar E, Belengeanu V, Meszaros N, Stoian M
Country: Romania
University: University of Medicine and Pharmacy „Victor Babes“, Department: Pathology

Introduction: Oral squamous cell carcinoma (OSCC) is the most common cancer of the mouth and pharynx and the most common at head and neck sites in general. Several studies had illustrated that there is a wide spectrum of p53-gene mutations in this type of cancer. Mutation of the p53 gene can determine the formation of altered and defective proteins, which have a longer half life than their wild type form, so that the p53 mutant protein can be detected by immunohistochemistry.
Material and method: We performed a retrospective study by selecting 15 paraffin blocks of cases diagnosed

with OSCC. The cases were processed by usual techniques for inclusion in paraffin, and then serial sections were performed and colorized with hematoxylin-eozine. The histopathological grade was assigned using Broder's classification (grades G1-G4). Tumors were staged by the TNM staging system for classification of head and neck cancers. To obtain a better insight into the oncogenic characteristics of the OSCC, we examined from the imunohistochemical point of view, the p53 expression in paraffin-embedded tissues, using monoclonal mouse Anti-Human p53 protein Clone DO-7 Ready-to-use (Dako, Denmark). The immunohistochemical assessment of p53 protein over-expression was performed on 4μm sections from parafin-embedded tissue. When immunochemical detection was performed for each analysis, a p53-negative and p53-positive tumor sample served as a control. For the imunohistochemical classification 3 categories were defined: - (negative), no nuclear staining in any tumor cells; +(positive), nuclear p53 staining in less than 25% tumor cells; ++(over-expression), nuclear p53 staining in more than 25% tumor cells. The imunohistochemical findings ware compared with clinical parameters of the cases. Clinical data such as sex, age and location were obtained retrospectively from the anatomopathological records.
Results: Out of the 15 specimens analyzed, 5 case had low-grade (G1) tumors; 8 cases had G2 and 2 case were classified as G3. Nine cases showed nuclear staining for p53: five cases were positive and protein overexpresion was observed in 4 cases while 6 cases were p53 negative. The presence of p53 was not correlated with parameters like TNM stage and histological degree of differentiation, or clinical stage of OSCC. Patients' age and sex distribution were not associated with p53 overexpression.
Conclusion: Considering our findings, biomarkers of somatic mutations, like p53, remain uncertain prognosis factors for patients with OSCC. Future studies with large number of tissue specimens are needed to identify the tumor properties, that are correlated with p53 protein levels and that can be critical for determining clinical outcome of patients with OSCC.

Interpretation of dark neurons in experimental model of ischemia, neurointoxication and brain infection

ESC-ID: 1332
Authors: Capo I, Hinic N, Lalosevic D, Sekulic S
Country: Serbia
University: University of Novi Sad, Department: Department of Histology and Embryology

*Introduction:*Findings of dark neurons is still a big controversy. Do they represent a simple artifact or neuropatological findings.
*Aim:*The aim is to explain the appearance of "dark" neurons in experimental animal models of ischemia,intoxication and infection of brain tissue.
Material and methods: The experiments included three experimental models. Neuroischemia:where in postmortal fixed rat brain after 10',30',45',1.5h,3h,6h,12h,24h histologically was examined the appearance of dark neurons;intoxication: after 28 days of oral administratio AlCl3 in rats analyse changes in the brain;neuroinfection:where hamsters perorally given culture larvae T.canis and after 4 weeks analyse neuropatological findings in the brain. All brains were processed by standard histological techniques and stained with H and amp;E, Walton and Cresil violet methods
Results: Neuroishemia:in the group fixed brain specimens after 10 and 30' found only insignificant number of dark neurons increases until the time of fixation, their number was increasing, and after 12 and 24 hours dark shape assumed virtually all neurons.Neuroinfection:laminar flow is characterized by deterioration of nerve cells and the concentration of dark neurons in V lamina of cerebral cortex. Neuroinfection: in the area granulomatous pathohistological lesions and other changes observed increased concentration of irreversible stages of dark neurons
Conclusion: The same histopathology characteristics of dark neurons in all experimental models can be attributed to arteficial ischemia,which is exposed to every tissue during histologic processing.Massiveness appearance of dark neurons depend on the length of exposure to the ischemia and the previous state of tissue patophysiological especially if pretreatment was at a destructive knox. Any harmful knox that lead to pathophysiological changes in vivo cause increased sensitivity of cells to arteficial ischemia and the development of dark neurons.

Diagnostic value of imunohistochemistry in gastrointestinal stromal tumors (GIST) - role of CD117

ESC-ID: 1359
Authors: Gyero R, Fulop E, Marcu S, Loghin A, Fulop E, Grozav Marcu D
Country: Romania
University: University of Medicine and Pharmacy Tirgu Mures, Department: Medicine

Aim: GISTs represent 80% of tumors with mesenchymal origin with localization in the digestive tract but also retroperitoneal. Thus their morphological appearance is similar to tumors of muscular and neural origin, modern histopathological diagnostic methods demonstrated the fact that a very large proportion of gastrointestinal mesenchymal tumors originate from an apart category of cells, the interstitial cells of Cajal (ICC). From imunohistochemical point of view, ICC and GISTs show common celullar markers: Cajal cells usually express the CD 117 (c-Kit) marker, while in GISTs the marker with the highest sensitivity and specificity is also represented by c-Kit protein (CD117). For a complete immunophenotipic assessment and diagnosis of a GIST, a series of other immune markers are used in pathology. The most commonly used are: CD34, smooth muscle actin (SMA), S-100 protein, vimentin, and rarely desmin, h-caldesmon.
Material and method: in our study 51 cases of GISTs were included, cases diagnosed in the Pathology Department of the Clinical Hospital from Tirgu Mure, Romania, between 2002 - 2008. Initial diagnosis was based on the histological appearance in usual hematoxylin and eosin stain and on the immunohistochemical profile but with less specific antibodies: vimentin, CD34, SMA or S-100 protein. These cases were than reassessed using c-Kit /CD117, a more specific antibody, together with CD34, SMA and S-100 protein, that allowed their reclassification.
Results: after interpretation of the immunohistochemical reactions we noticed that from the 51 cases initially diagnosed as GISTs, 45 tumors showed the following immuno-

histochemical profile: CD117+. CD34±, SMA±, S100±, and for this reason they were classified as GIST. In 3 cases the immunohistochemical profile was specific for tumors of muscular origin: CD117-, CD34-, SMA+ ºi S100-, and in 1 case the immunohistochemical profile was characteristic for tumors of neural origin: CD117-, CD34-, SMA+ S100+. In 2 cases reaction to CD117 was negative, SMA±, S100± while reaction to CD34 was positive. Because of these results we considered necessary some further investigations in these 2 cases, with other antibodies like vimentin and desmin. On the basis of the results: vimentin+ and desmin- the diagnosis of GIST was supported.
Conclusions: this study showes that immunohistochemistry may be useful in establishing the positive diagnosis in GIST, most suitable antibody used in the diagnosis of certainty being CD117. Reactivity to CD34 is much lower, while the positivity of immunostaining for SMA and S-100 protein is seldom observed, all these being useful especially for differential diagnostic purposes. Establishment of a correct diagnosis of GIST is very important for the further management of the patient, being known that GISTs benefit of a molecularly targeted treatment with, sometimes, spectacular effect.

Administration of sodium cromoglycate in early phase of hypoxia restricts remodelling of the pulmonary arterial bed

ESC-ID: 1360
Authors: Svehlik V, Novotny T, Krejci J, Wasserbauer R, Malikova J, Vrablova K, Uhlik J, Vajner L
Country: Czech
University: Charles University, Prague , Department: 2nd Faculty of Medicine

The environment with low content of oxygen elicits the development of the hypoxic pulmonary hypertension consequent to pulmonary vessel remodelling. This remodelling is mediated by mast cell (MC) products depending on changes in the MC distribution and production of the interstitial collagenase. Thus, we propose that the effective stabilization of MC granules by sodium cromoglycate (SC) should lead to a different remodelling of the pulmonary vessels. We assessed the morphological changes of pulmonary vessels as well as the changes of MC distribution depending on the duration of hypoxia and variant timing of SC administration. Total 64 Han-Wistar male rats were divided into 8 groups by 8 individuals and exposed to the acute (4-day) and chronic (21-day) normobaric hypoxia (10 % of oxygen) with variant timing of the intraperitoneal SC administration. On the lung slides, histological changes were assessed by a light microscope and MC distribution was evaluated using an image analyzer. The acute hypoxia alone elicits the robust remodelling of the walls of pulmonary arteries. At the level of prealveolar arterioles, the conspicuous neomuscularization as well as development of the external elastic laminae are encountered. In peripheral arteries, proliferation of smooth muscle cells reveals with the oblique segments building up. During the acute hypoxia, SC administration leads to highly restricted remodelling of the pulmonary vessels concerning neomuscularization of prealveolar arterioles as well as formation of the oblique segments in peripheral arteries. The chronic hypoxia alone reveals the morphologic picture of the advanced acute hypoxia. During the chronic hypoxia, early SC administration leads to only partial neomuscularization of the prealveolar arterioles and to the symmetrical hypertrophy of the tunica media (TM) in the peripheral arteries. Late SC administration during the chronic hypoxia does not influence neomuscularization of the prealveolar arterioles and elicits the asymmetrical hypertrophy of TM with the oblique segment formation in the peripheral arteries. SC administration at the beginning of both acute and chronic hypoxia conspicuously restricts morphologic remodelling of the pulmonary vessels. SC administration at the end of chronic hypoxia influences the vascular remodelling only slightly.

Administration of sodium cromoglycate in early phase of hypoxia enables re-remodelling of the pulmonary arterial bed during the recovery phase

ESC-ID: 1368
Authors: Krejci J, Novotny T, Svehlík V, Wasserbauer R, Maliková J, Vrablova K, Uhlik J, Vajner L
Country: Czech
University: Charles University in Prague - 2nd Faculty of Medicine, Department: Department of Histology and Embryology

The hypoxic experimental conditions induce the development of the hypoxic pulmonary hypertension with its typical pulmonary vessel remodelling. Having returned to the normoxic environment, the pulmonary vascular bed is re-remodelled back. Both processes are mediated by mast cell (MC) products depending on changes in the MC distribution and production of the interstitial collagenase. Thus, we propose that the effective stabilization of MC granules by sodium cromoglycate (SC) should lead to a different re-remodelling of the pulmonary vessels during the recovery period. We assessed the morphological changes of pulmonary vessels as well as the changes of MC distribution depending on the duration of recovery phase and variant timing of SC administration. Total 56 Han-Wistar male rats were divided into 7 groups by 8 individuals, exposed to the chronic (21-day) normobaric hypoxia (10 % of oxygen) and allowed to recover 4 days or 21 days with variant timing of the intraperitoneal SC administration. On the lung slides, histological changes were assessed by a light microscope and MC distribution was evaluated using an image analyzer. In the 4-day recovery without SC administration, a trend of gradual incomplete re-remodelling of the walls of pulmonary arteries with their advanced asymmetry is observed. A significant increase in number of MC is encountered in comparison to chronic hypoxia-alone group. In the 4-day recovery with SC administration, re-remodelling of the pulmonary vessels has not occurred. A significant increase in number of MC is encountered in comparison to chronic hypoxia-alone group. In the 4-day recovery with the SC administration at the beginning of the hypoxia, almost complete re-remodelling of all pulmonary vessels has occurred. In the 21-day recovery without SC administration, a withdrawal of the thickness in arterial walls is observed. No vessels reveal any asymmetries like prealveolar neomuscularization or oblique segments in peripheral arteries. In the 21-day recovery with SC administration at its beginning, we encounter belated and still proceeding symmetrical re-remodelation of arterial walls. Hypertrophy of TM

sustains. In the 21-day recovery with SC administration at the beginning of the hypoxia, we observe the complete re-remodelling of pulmonary vessels back. SC administration during the beginning of hypoxia conspicuously enables re-remodelling of the pulmonary arteries back.

Morphological changes in the thyroid gland of rats after neonatal monosodium glutamate teatment

ESC-ID: 1467
Authors: Rancic I, Jancic N, Rancic M
Country: Serbia
University: University of Nis , Department: Faculty of Medicine

Introduction: Monosodium glutamate (MSG) is an additive primarily used in food industry. Earlier experiments have shown that MSG has toxic effects on neurons, adrenal glands, kidneys, pancreas, neuroendocrine regulation, etc. There is very little data and studies concerning morphological changes of the thyroid gland of rats induced by neonatal MSG treatment and they are mostly oriented towards physiological effects of this neonatal MSG treatment and study of hypothalamo-pituitary-thyroid gland axis.
Aim: The aim of this study is to discover morphological changes in rat thyroid gland after their neonatal MSG treatment and to gather data about these morphological changes.
Materials and Methods: We used 40 Wistar rats of both genders, divided in 4 groups. Control (C) male and female groups were administered with 0.9% sodium chloride solution, while treated (MSG) male and female groups were given MSG (4 mg/g body weight) on second, fourth, sixth, eight and tenth day postnatally. After two months animals were sacrificed after being administered with anesthesia and the thyroid glands were taken. Organs were histologically processed through fixation, dehydration, impregnation and paraffin block creation. Slides were cut from these processed organs and using histochemical methods these slides were stained using HE, Van Gieson and ABC method for thyroglobulin.
Results: Thyroid glands of both genders of MSG treated rats macroscopically show no signs of morphological changes or changes in size, but only show signs of proliferation of surrounding adipose tissue. Microscopically, MSG treated rats of both genders have thyroid glands which show irregularity in shape, changes in size of follicles (larger or smaller in comparison to controls), changes in follicular cell shape from squamous-like to cylindrical and changes in follicle colloid content in relation to control rats of both genders . Thyroid gland follicles of central localization show signs of hyperplasia and formation of adenomas in MSG groups in difference to control groups. Thyrocytes of follicles of MSG groups show signs of pseudostratification, polarity changes and increased mitosis of nuclei, oncocytic and atrophic cell transformation. Colloid is differently present inside the follicles, some follicles show signs of total loss of colloid, other follicles show signs of colloid hyposecretion while third ones show no signs of changes in colloid amount. Colloid also shows signs of active resorption in thyroid gland follicles of both MSG groups. Stroma of thyroid glands of MSG groups shows signs of proliferation and lymphocyte infiltration in relation to control groups. Also, stromal blood vessels of MSG groups have shown signs of thrombosis in comparison to controls.
Conclusion: Tested MSG dose induces morphological changes in rat thyroid gland of both genders after neonatal MSG treatment. Changes in morphology of thyrocytes, follicles, stroma, blood vessels and colloid are present. These morphological changes confirm that MSG has toxic effects on this organ.

Session: Pediatrics

Influence of the dosed out load on physical working capacity at children and teenagers with the inorganic pathology of cardiovascular system

ESC-ID: 562
Authors: Shchuchko A, Popkova M, Linkevich E
Country: Belarus
University: Gomel State Medical University , Department: General Medicine

Introduction: Cardiovascular diseases take a leading place in a human's pathology. They are a cause of an early invalidism and premature death. For the last 10 years prevalence of arterial hypertension (AH) among children and, especially, teenagers was enlarged. Prevalence of AH among children is about 14%, among schoolboys - 18%. Among children of the first year of a life, preschool and early school age AH develops extremely seldom and in most cases has symptomatic character. Research of cardiovascular system (CVS) in rest does not allow making full representation about it functional condition. It explains wide distribution of loading tests in cardiology. Harward step-test (HST) is the most popular and allows receiving the important information about adaptation possibilities and physical working capacity (PWC) of §³VS. They are important criterions for diagnostics and treatment of patients with pathology of CVS. The goal of a given research work was to study physical working capacity and adaptation possibilities of CVS among children with an inorganic pathology of blood circulation system.
Materials and methods: 100 children (42 girls and 58 boys) at the age from 9 till 17 years (middle age 13) were inspected. All of them suffered from high-pressure. For the estimation of their adaptation possibilities and physical working capacity HST was conducted. Than Index of HST was counted by the formula: (t x 100) / [(f1 + f2 + f3) x 2], where t - ascension time [sec]; f1, f2, f3 - pulse for 30 sec on 2nd, 3rd and 4th minute. For statistical treatment were calculated: criterion Kolmogorov-Smirnova, factor of correlation Kendall Tau, the relation of chances (OR). Results and discussion. By results of HST: "excellent" PWC (Index of HST = 90 and more) was registered at 2 children (2%), "high" (Index of HST = 80-89) - 8%, "average" (Index of HST = 65-79) - 18%, "below mediums" (Index of HST = 55-64) - 23%, "low" (Index of HST = 55 and less) - 49 %. The correlation interrelation was taped between Index of HST and sex (r =-0,35, z =-6,2. p <0,001), and index of mass of body (r =-0,34, z =-2,97, p = 0,003). "Low" level of working capacity statistically significantly was more often defined at children with adiposity (x2 = 10,79, p = 0,001; OR = 10,8, 95 % CI from

2,32 to 60,36). Interrelations between Index of HST and age (r = 0,02, z = 0,49, p = 0,617), levels of initial blood pressure (r =-0,44, z =-0,91, p = 0,393) wasn't taped. It is established that occurrence of "low" PWC among girls in 3 times more often than among boys (x2 = 16,17, p <0,001; OR = 6,26, 95 % CI from 2,59 to 15,17). At the analysis of adaptation abilities of CVS to an exercise stress: normotonic type of cardiovascular reaction has been taped at 70 (70 %) children, hypertensive - at 7 (7 %), hypotonic - at 16 (16 %), dystonic - at 7 (7 %). Among 100 inspected children 24 (24 %) didnt finish HST. They complained on a headache and weakness. Adequate restoring of pulse (to 3-4 minute) was registered at 28 (28 %) children, at 62 (62 %)- was restored in 5-7 minutes, and at 10 (10 %) - more than 7 minutes.
Conclusions: 1. HST is alternative to other loading tests that can help the doctor with definition of functional condition of CVS and in choosing of tactics of conducting the patient. 2. By results of HST depression PWC was registered at the majority of children that can witnessed about delay of tolerances to loadings. 3. It is established that "low" level of working capacity statistically significantly was more often defined at children with adiposity. And "low" PWC was registered among girls in 3 times more often than among boys. 4. Patients with pathological reactions on loading need in individualization of exercise stresses and in dynamic observation by the cardiologist.

The correlation beetwen fetal hemoglobin level and free radical disorders of preterm infants

ESC-ID: 623
Authors: Stachowicz T, Rusnak K, Wojcik P
Country: Poland
University: Jagiellonian University , Department: Faculty of Medicine

The main type of hemoglobin in the fetus during the intrauteral development period is fetal hemoglobin (HbF). As of 36 Hbd its level starts slowly reducing to 55 - 65% (full term newborns). During the first year of life the HbF level rapidly reduces below 2% (HbF is nearly completely replaced by adult hemoglobin HbA). Functionally, fetal hemoglobin differs most from adult hemoglobin in that it is able to bind oxygen with greater affinity than the adult form, giving the developing fetus better access to oxygen from the mother's bloodstream. Preterm infants are more susceptible to free radical disoders because of immature antioxidant defence mechanisms in their tissues. The aim of study was to investigate correlation between fetal hemoglobin level in preterm infants weighing less than 1250 g at birth and incidence of: retinopathy of prematurity (ROP), chronic lung disease (CLD) of infancy. The next stage was the estimation of the influance of blood transfusions on fetal hemoglobin level. The study was performed on 70 preterm infants borned in university clinic, weighing less than 1250 g at birth with ROP or CLD diagnosed and treated with min. one blood transfusion. Among 70 infants there were 18 with ROP, 11 with CLD and 3 with both disorders diagnosed. Remainig infants had none of free radical disoders diagnosed. Average level of HbF in control group was 49,58%, in group with one disoder 32,65%, group with ROP and CLD 16%. The study revealed strong corelation beetwen number of blood transfusions and HbF level decrease. Basing on these results it could be assumed that there is also similar correlation between number of blood transfusions and free radical disoders incidance.
Conclusions: The blood transfusion procedures should be restricted only to vital situations. Hovewer longer observation is needed.

Efficacy of subcutaneous terbutaline compared with inhaled albuterol for treatment of hyperkalemia in chronic kidney disease

ESC-ID: 660
Authors: Goudarzi A, Ahmad SH, Zahra B
Country: Iran
University: Shaheed Sadughi University Of Medical Sciences,Yazd,Iran , Department: Pediatrics Nephrology

Introduction: Hyperkalemia is a frequent and potentially lethal medical emergency in patients. Dialysis is the definitive treatment of these patients. Beta2 adrenergic agonists cause potassium cellular shifting and lower in plasma potassium concentration.The purpose of this study was to compare the effects of terbutaline and albuterol on potassium responses and heart rate in patients with CKD (chronic kidney diseases).complications of untreated hyperkalemia include arrhythmias , cardiac arrest and changes in nerve and muscle (neuromuscular) control.
Materials and Methods: Study design: clinical trial (Randomized Controlled).Twenty patients between seven to seventeen years old with indication of dialysis were divided into two groups: terbutaline 7 μg/kg, subcutaneously in ten patients and inhaled albuterol 2.5 mg/kg/10min were administered in other patients. The level of potassium was measured every three hours and the heart rate every one hour during six hours.
Results: There was no meaningful difference in two groups about decrease of plasma potassium concentration statistically (P value = 0.52) . In two groups the side effects have reduced but in albuterol group are more significant.In all of three times (H1 , H3 , H6) the heart rate in albuterol group has increased less than another group (P value = 0.00) .
Conclusion: according to our results, both of drugs (terbutaline and albuterol) lowered potassium concentrations equally, but terbutaline makes fewer side effects than albuterol. We suggest using terbutaline for treatment of hyperkalemia.

Prevalence of vitamin D receptor gene polymorphisms (FokI and BsmI) in Polish children treated for cancer

ESC-ID: 690
Authors: Latoch EJ, Panasiuk A
Country: Poland
University: Medical University of Bialystok , Department: Pediatric Oncology and Hematology

Background: Osteoporosis is a disease with the multifactorial and strong polygenetic basis. Vitamin D receptor gene polymorphism influences bone mineral density,

peak bone mass and frequency of fractures. Childhood cancer and its treatment may enhance negative genotype influence on bone status in children.
Aim: The aim of this study was to evaluate the frequency of vitamin D receptor (VDR) gene polymorphisms in children with neoplastic disease from north-eastern region of Poland.
Material and methods: The study group consisted of 247 children (133 boys) treated at the Department of Pediatric Oncology and Hematology of Medical University of Bialystok. Control group consisted of 125 healthy children (72 boys) from the same region of Poland. Genetic polymorphisms were determined by RFLP method (restriction fragment length polymorphism) using polymerase chain reaction (PCR).
Results: In both group heterozygotes were most prevalent (Ff -54%, Ff -51,2% and Bb -54,5% , Bb -51,2%). The BB genotype was significantly more frequent in the leukemia group than in the control group (p=0,034). The co-occurence of f and B alleles were observed with prevalence twice as high in the leukemia group in comparison with the control group (p=0,023). The statistical analysis of the distribution of genotypes and haplogenotypes was carried out with the assistance of the De-Finetti Diagram and Hardy-Weinberg Test and the STATISTICA 8.0.
Conclusion: Distribution of FokI and BsmI genotype is in accordance with data for Caucasian population. Assessed data suggest that children treated for leukemia are carriers of alleles which negatively influence on skeletal system.

Transumbilical laparoscopic assisted appendectomy (TULAA) as alternative to conventional laparoscopic appendectomy - a case control study

ESC-ID: 976
Authors: Klein I, Wenke K, Krebs T, Bergholz R
Country: Germany
University: Universitätsklinikum Hamburg-Eppendorf , Department: Department of Pediatric Surgery

Background: Aim of our study was to evaluate the short term outcome of single port transumbilical laparoscopic assisted appendectomy (TULAA) compared to the „standard“ three port laparoscopic appendectomy in a case control study.
Material and Methods: We introduced TULAA into our surgical repertoire for acute appendicitis in September 2008. 22 children operated on by transumbilical laparoscopic assisted appendectomy (TULAA) were matched with a control group of 22 children operated on during the same period of time by conventional three port laparoscopic appendectomy (LA) according to age, sex and histology of the resected appendix. Patients were evaluated retrospectively for time to first and full oral intake, operative time, duration of hospital stay and intraoperative or postoperative complications.
Results: There were no differences between the groups according to sex, age and histology, representing a good matching quality. The median operating room time for TULAA was 61mins and 55mins for LA. There were no intraoperative or postoperative complications and no conversions in both groups. Time to first oral intake was one day for TULAA and one for LA. All patients were on full oral feeds on postoperative day 2 in TULAA and LA. The median duration of hospital stay was 4 days (range 2-6 days) for TULAA and 4 (3-5) days for LA respectively. All results showed no significance between the groups. The learning curve showed a decrease in operating room time. Adaptation to the 0°-videoscope and the partial blocking of the visual field when operating an instrument in the working channel was the most demanding and time consuming part of the procedure. Because only one instrument can be used, inspecting the small intestine to exclude Meckel's diverticulum was very hard to perform, even in extreme Trendelenburg position.
Discussion: TULAA appears to be a safe and successful alternative to three-port laparoscopic appendectomy in children. It wields the advantage of reducing the costs for surgery, because no stapling or endo-loop devices are needed. The postoperative course is similar as expected in „traditional“ three-port laparoscopic appendectomy. Any additional procedure is harder to perform with only one instrument at hand. Performing larger scale controlled trials should be encouraged.

A newborn rat model for surgical intervention to reduce the progress of disease in experimental necrotizing enterocolitis

ESC-ID: 977
Authors: Zschiegner M, Ridderbusch I, Roth B, Appel B, Wenke K, Bergholz R
Country: Germany
University: Universitätsklinikum Hamburg-Eppendorf , Department: Department of Pediatric Surgery

Introduction: Necrotizing enterocolitis (NEC) is an acute gastrointestinal illness of premature or newborn babies. In the final stage it presents with complete necrosis of the middle to distal ileum with bacteremia, peritonitis and exitus in septic shock. The main treatment of NEC is its prevention. If NEC develops, mild forms are treated with i.v. antibiotics and food restriction. The fulminant course of NEC, which often follows the less severe forms, is associated with bowel perforation, peritonitis and sepsis and needs urgent surgery for abdominal decompression and intestinal salvage. Unfortunately, no data exist in the literature, whether an early surgical intervention can ameliorate the often disastrous progressive course of NEC from milder to more severe forms. The aim of this project is to evaluate an animal model of neonatal rats with experimental NEC to assess the effect of surgical treatment and its timing to the course and development of the disease.
Material and Methods: 150 newborn Sprague-Dawley rats were divided into two groups: half was left with the mother and thus were "milk" fed controls, the other animals were kept in a heated incubator and fed with a hyperosmolar formula (Similac / Esbilac). The formula produces a similar clinical picture of NEC in rats compared to humans. The animals were killed on the 4th, 5th and 6th day of life, the intestine harvested and examined by light microscopy. The extent of injury was graded on a scale from 0 (none) to 3 (severe necrosis). Term (day 22) and preterm (day 21) neonate rats were compared for the influence of gestational age to the extent of NEC.
Results: The mean mucosal damage was 0.5 in the control group and 1.74 in the NEC group. The difference was not

statistically significant. Preterm neonates had a slightly higher grade of mucosal damage than term neonates and a distinguishable ill clinical appearance. The area of the vital mucosa (using the Analysis Digital Image Evaluation Program) was 64% lower in the NEC group compared to the control group. Laparotomy and creation of a loop ileostomy was performed successfully applying microsurgical techniques.
Discussion: Formula feeding of newborn rats generates a human necrotizing enterocolitis similar histological picture. Furthermore, studies in preterm animals demonstrated the influence of gestational age to the extent of disease. Work is in progress to evaluate, whether an ileostomy created using microsurgical technique can prevent the histological changes shown above and thus ameliorate the progression of disease.

Clinical and immunohistochemical predictors of renal survival in children with primary focal segmental glomerulosclerosis (FSGS)

ESC-ID: 1015
Authors: Mozafarpour S, Beigi H, Gheissari A, Samanianpour P, Farajzadegan Z
Country: Iran
University: Isfahan University of Medical Sciences, Department: Medicine

Introduction: Focal segmental glomerulosclerosis (FSGS) is the leading cause of steroid-resistant nephrotic syndrome in childhood and the most common glomerular diseases leading to end stage renal diseases (ESRD).There is no study so far to assess immunohistochemical prognostic factors for FSGS in children.
Aim: We carried out this study to search for immunohistochemical (Vimentin, Desmin and a-Smooth muscle actin) and clinical factors with prognostic value for renal survival in children with primary FSGS.
Methods and materials: In this historical cohort survey, we have studied by immuno histochemistry the ex<x>pression of cytoskeletal proteins asmooth-muscle actin (a-SMA), vimentin (Vi) and desmin (D) in the kidney of 31 children with primary FSGS from 2001 until 2009 in Isfahan, Iran. Clinical features were evaluated as well. Kaplan-Meier's curves and Cox's Multivariate Regression were used to evaluate renal survival and predictors of outcome. GRF less than 90 ml/min was considered as the endpoint of the study.
Results: Out of a total of 31 patients, 20 (64.5%) were male while 11(35.5%) were female. The mean age at presentation was 63.19 ± 46.65 months. Proteinuria ranged from 0.1-4.3 g/day/1.73m2 and the median estimated glomerular filtration rate (eGFR) was 97.5 ml/min/1.73m2 at presentation.45.2% had high blood pressure ate presentation. After a mean follow up of 45.49±55.61 months, 61.3% and 16.1% reached complete and partial remission respectively. Five year renal survival was 41%. Among clinical factors, only Proteinuria adjusted by body surface area was associated with renal survival (P=.003).None of the immunohistochemical parameters were determinants of renal survival (p>.0.05).
Conclusion: Independent predictor of renal survival was BSA Proteinuria at presentation. We did not find a correlation between immunohistochemical staining and renal survival in childhood FSGS, further studies with bigger sample population and longer fallow up period is needed to reveal more correlations.

Is transthoracic ultrasound a useful tool for bedside differential diagnosis of respiratory failure in children after cardiac surgery with extracorporeal circulation?

ESC-ID: 1321
Authors: Paczkowski K, Czeczko K, Kosiak W, Haponiuk I, Chojnicki M
Country: Poland
University: Medical University of Gdansk , Department: Students' Scientific Ultrasonography Group

Introduction: Intensive care for pediatric patients after cardiac surgery with extracorporeal circulation is great challenge for physician because of very dynamic clinical picture. Variety of pulmonary complications associated with the treatment of patients with congenital heart disease require to take into consideration many different reasons of acute respiratory failure. In case of respiratory insufficiency for differential diagnosis there can be used only chest x-ray and stethoscope in postoperative intensive care unit. Development of real-time transthoracic ultrasound could bring a useful tool for bedside diagnosing and monitoring pulmonary complications of cardiac surgery.
Aim: The aim of our study was to assess usefulness of transthoracic ultrasound in monitoring pediatric patients after cardiac surgery with extracorporeal circulation.
Material and methods: Transthoracic sonography was performed in 33 patients of the Department of Paediatric Cardiac Surgery in Gdansk (age range: 5 days 6 years; average: 13,7 months), who were qualified to cardiac surgery with extracorporeal circulation from September 2009 to February 2010. The examination was performed bedside in a day before surgery, just after surgery and a day after surgery, using Esaote MyLab 25 with linear probe 12.0MHz and convex probe 5.0MHz. The results of our examinations were compared with the radiographic findings in chest x-ray.
Results: Findings observed in transthoracic ultrasound in the first or the second day after surgery: pleural effusion in 9 cases (27%), pneumothorax in 6 cases (18%), pneumonia in 5 cases (15%), lesions which suggest pulmonary embolism in 5 cases (15%). In all cases an ultrasound image of lung before surgery was assessed as correct and no abnormalities were observed.
Conclusion: 1. Our early data suggest, that transthoracic ultrasound brings extra information during intensive care for pediatric patients after cardiac surgery with extracorporeal circulation. 2. There is need to further study to evaluated the diagnostic value of transthoracic ultrasound in this group of patients. 3. Transthoracic ultrasound is relatively easy-to-learn method and can be performed in every condition.

Assessment of factors affecting lymphocyte activation in the neonate

ESC-ID: 1334
Authors: Kollár S
Country: Hungary
University: Semmelweis University, Department: First Dept. of Pediatrics

Aim: Alterations of the adaptive immune system play a central role in the development of perinatal complications. The aim of this study was to assess the relation between the elements of adaptive immunity and chief factors leading to preterm birth (preeclampsia (PE), premature rupture of membranes (PROM)), as well as gender and prenatal steroid treatment (PS) during the first postnatal week.
Methods and materials: We enrolled 22 female and 21 male preterm infants born before the 33rd week of gestation and with less than 2000 g weight at birth into our study. Peripheral blood samples were drawn at birth (from cord blood) as well as on the 1st, 3rd, and 7th postnatal days of life. We characterized the prevalence of major lymphocyte subsets (CD4, CD8, Th1 (CXCR3+), Th2 (CCR4+)) and that of activated lymphocytes (CD69+, CD25+, CD62L+) using flow cytometry. The independent effects of postnatal age, PE (n = 8), PROM (n = 13), PS (n = 25) and gender were analyzed using the mixed effect model method. Where an effect was noticed, Mann-Whitney test was applied to determine the extent of the alteration.
Results: The prevalence of CD62L+ lymphocytes was higher in male than in female infants. The prevalence of CD25+ cells was increased in cases of PROM. The prevalence of CD4 and CD8 cells and CD4/CD8 ratio were decreased in PE. Postnatal age and PS did not affect the prevalence of investigated markers. Prevalence of other lymphocyte subsets investigated was not influenced by the above factors.
Conclusion: The gender of patients and the ground for preterm birth do influence the elements of adaptive immunity. Based on clinical experience, severe perinatal complications occur more frequently in cases when PROM or PE is present. Furthermore, it is known that perinatal morbidity of male infants is elevated compared to female infants. Our observations indicate that alterations affecting the elements of adaptive immunity investigated in this study contribute to these phenomena.

Prevalence of acid-base imbalance and its probable cause in pediatrics with failure to thrive

ESC-ID: 1351
Authors: Mahboobi N, Tabatabaei SV
Country: Iran
University: Tehran University of Medical Sciences , Department: Pediatrics

Background and aims: Failure to thrive (FTT) describes children's growth problems which can be the result of organic and non-organic disorders. There are several reports of acid-base imbalance in FTT patients that cannot be related to organic factors. To our knowledge, etiologies of acid-base imbalance have not been discussed in those reports. Therefore, we hope this study will strike new ideas about patients with FTT.
Methods: A retrospective chart review of all admitted FTT cases in Tehran Pediatrics Center between 2002 and 2007 has been performed. The first Arterial Blood Gas (ABG), underlying diseases, serum electrolytes levels, patients' age and gender, and their hospitalization period were the main information obtained from the patients' files. Correlations between the variables were determined via Chi square test, using SPSS software results: From 439 relevant files, 315 cases were compatible with our study and from them 97 cases (39.4%) had acid-base imbalance. In 15 patients (28.8%) with metabolic acidosis and in 15 patients (33.3%) with metabolic alkalosis Non-organic FTT (NOFTT) was observed. NOFTT, metabolic disorders, and chronic renal failure were the most prevalent causes of metabolic acidosis respectively. In addition, in FTT patients with metabolic alkalosis, NOFTT, gastroesophageal reflux and cystic fibrosis were the most frequent causes.
Conclusions: Regarding the results, NOFTT was the most prevalent cause of acid-base imbalance in FTT patients. Although the association between NOFTT and metabolic acidosis has been illustrated previously, this study showed that it can also be associated with metabolic alkalosis.

Mechanisms of patent ductus arteriosus after gestational exposure to indomethacin

ESC-ID: 1114
Authors: Branco JM, Campos CF, Corte-Real A, Neves JB, Rodrigues FB, Sousa D, Teixeira L, Diogenes MJ, Vale FM, Rodrigues HL
Country: Portugal
University: University of Lisbon , Department: Faculty of Medicine

Heading: Ductus arteriosus (DA) is a fetal muscular artery connecting the aortic arch to the pulmonary artery that allows part of the right cardiac blood flow to be diverted to the systemic circulation. After birth, constriction and functional closure of the DA is a critical process of postnatal circulatory adaptation. Patent Ductus Arteriosus (PDA) is the most common cardiovascular abnormality in preterm neonates. PDA has serious hemodynamic complications and increases the risk of pulmonary hypertension and congestive heart failure. DA patency in utero and its closure after birth result from a regulated interaction between several factors. Decrease of vasodilator factors, namely Prostaglandin E2 (PGE2), increase of vasoconstrictor factors and anatomical remodelling of the DA contribute to its physiological closure. Indomethacin is a non-selective inhibitor of COX isoenzymes that reduces the production of prostanoids, including PGE2. This drug is one of the non-surgical therapies of choice for the treatment of PDA. Paradoxically, prenatal exposure to Indomethacin increases the incidence of PDA. During pregnancy, this drug can be administered for the treatment of pre-existing maternal disease (e.g.: inflammatory disease), for correction of fetal polyhydramnios or as a tocolytic agent. Additionally, Indomethacin related PDA is associated with increased incidence of PDA refractoriness to non-surgical therapies. The increasing rate of preterm births, the high incidence of PDA in preterm neonates and its possible hemodynamic complications emphasize the relevance of better understanding the causative factors of this pathology, namely Indomethacin

use. Aim The aim of our work is to analyze the mechanisms underlying the increased incidence of PDA after fetal exposure to Indomethacin and related implications.
Methods: The information gathered to assemble this review work was obtained after searching the platform PubMed for related topics and most renowned authors. Results Three mechanisms have been proposed for the role of Indomethacin as a PDA causative factor: in utero constriction, contractile alterations and remodelling alterations. When given during the gestational period, by inducing DA contraction, Indomethacin can lead to hypoxia and death of DA's smooth muscle cells. Additionally, Indomethacin may alter the migration and differentiation of myosin isoforms and other proteins of DA's smooth muscle cells' cytoskeleton. These phenomena ultimately lead to a decline in distensibility and contractility, inhibiting DA's physiological closure after birth. Finally, PGE2 also plays a role in the anatomical remodelling of the DA. This morphological change begins during pregnancy and is crucial for proper closure after birth. When given during the gestational period, Indomethacin reduces the DA's anatomical remodelling, namely neointimal cushion formation, contributing to increased PDA occurrence.
Conclusions: Indomethacin, by altering fetal DA anatomy and function increases the incidence of PDA. Understanding the mechanisms of Indomethacin related PDA opens new perspectives on potential alternative PDA non-surgical therapies and raises awareness about Indomethacin gestational use.

Session: Pediatrics POSTER

Neurosonographic diagnosis of the IVH in premature newborns

ESC-ID: 538
Authors: Zavgorodnia N
Country: Ukraine
University: Kharkiv National Medical University , Department: neurosurgery

Intraventricular haemorrhage (IVH) is most common in the premature population. Neurosonography (NSG) is the most available and easily repeatable technique for imaging the neonatal brain. We observed 41 preterm newborns (23 (56%) male and 18 (44%) female) who were treated at the City Child Neurosurgery Centre. 19 children were born from 30 to 35 weeks of gestation (46%), 9 - 25 to 30 weeks (22%), 35 to 38 - 13 children (32%). Weight ranged from 850 g to 3450 g: 17 children had low birth weight (41,5%), 15 - extremely low birth weight (36,5%) and 9 (22%) have normal weight. In a state of severe asphyxia (1-3 points on the Apgar score) were born 8 children (19,5%), in moderate asphyxia (4-5) -17 (41,5%), mild (6-7) - 12 (29%). In 60% cases required the use of mechanical ventilation, which lasted more than a day. On admission to the intensive care unit overall condition of children rated as extremely difficult due to severe respiratory insufficiency and hemodynamic disorders in 16 cases (39%), severe in 12 cases (29%), moderate - 9 (22%), satisfactory in 4 cases (10%). All newborns carried ultrasound of the brain. NSG was performed on the 1 day of life in 8 cases, on the 2nd - 4cases, on the 4 - 5 cases, on the 5 - in 4 cases, in all other cases the study was conducted on the day of hospitalization of the child. In 8 cases cranial ultrasound scans were performed because of clinical suspicion of IVH at 10 and 8 days of hospitalization.
Results: Intracranial hemorrhage was graded according to Papile et al., (1978): 1 grade-8 (19,5 %); 2 grade-22 infants (53,6 %), 3 grade - 6 infants (14,6 %), 4 -4 infants (9,7 %), subarachnoid hemorrhage - 1 infant (2,5%). Thus in the two cases indicated a combination of hemorrhage grades 3-4 and 2 - 2-3 grades. All of the surveyed noted hyperechogenic brain structures, grooves were smoothed in 13 patients (31%), heterogeneity of the structure of vascular plexus occurred in 20 cases (49%), pulsation of the vessels of the brain was reduced in 27 infants (65%), in 1 case (2,5%)-raised. NSG demonstrated the asymmetry of lateral ventricles in 10 cases (24%), one a newborn due to tamponade the left lateral ventricle. Verga's ventricle visualized in 7 children (17%), in 1 child (2,5%) - 5 ventricle as a variant of development. Brain oedema was observed in 2 children (5%).
Conclusions: NSG is an objective method to identify the presence of IVH, its grade, make differential diagnosis of vascular pathology of the newborn brain. We consider to conduct NSG on the first day of hospitalization regardless of the presence of neurological deficit

Overweight, obesity and metabolic syndrome in children with type 1 diabetes melllitus

ESC-ID: 805
Authors: Blecharczyk B, Luczynski W, Rembinska M, Recko P, Tercjak M, Lachowska U, Suchon P, Bernatowicz P, Wisniewska K
Country: Poland
University: Medical University of Bialystok, Department: medicine

Introduction: Obesity can be an additional risk factor for developing cardiovascular diseases in patients with diabetes. The aim of the study was the assessment of overweight, obesity and other elements of metabolic syndrome in children with type 1 diabetes mellitus.
Material and methods: 300 children treated with insulin at least one year were enrolled to the study. In the examined group anthropometric data, data concerned with diabetes and additional laboratory tests including risk factors for cardiovascular diseases were assessed.
Results:: The age of the examined group was median 13.7 years. The body mass deficiency was noted in 0.66%, normal body mass in 71.6%, overweight in 15.3% and obesity in 12.3%. The abdominal obesity was noted in 16.0% of children. The rise in the body weight between the time 3-6 months from the beginning of insulin therapy and the present assessment was statistically significant. Children with normal weight had a better metabolic control in comparison to children with overweight/obesity. Girls had a higher rise in body mass index values from the time of diagnosis to the present investigation comparing to boys. Higher values of blood pressure or hypertension were noted in 16.6% of children. Together in 25.3% of children some dislipidemia was observed. The metabolic syndrome criteria were noted in: 28.0% - one criteria, 13.0% - two criterias, and 0.3% - three criterias.
Conclusions: The population of children with type 1 diabetes characterizes high overweight/obesity frequency, abdominal obesity, dyslipidemia and hypertension. The features of metabolic syndrome are less frequent. It is

worthwhile to monitor the risk for development of cardiovascular diseases in this group of children.

The role of nitric oxide by ulcer disease in children

ESC-ID: 820
Authors: Andriychuk D, Sorokman T, Ivashchuk H
Country: Ukraine
University: Bukovinian State Medical University , Department: Pediatrics and medical genetics

Introduction: Nitric oxide (NO) was first characterized ten years ago as an endogenous biological mediator responsible for the maintaining of vascular tone in mammals. However, there is now substantial evidence indicating a broad profile of actions for nitric oxide in the regulation of different physiological and pathological processes.
Aim: improve efficacy of diagnostics and prognosis of stomach and duodenum ulcer disease course in children on the basis of complex elaboration of clinical and pathological criteria of its formation.
Material and methods: Clinical investigation was conducted in 47 children with ulcer disease aged from 7 to 18 years and they formed the main group of investigation and 35 healthy children of the same age (control group). Results. There was established that in children with ulcer disease of stomach and duodenum level of nitric oxide both in plasma and in saliva was reliably increased comparatively with control group in 1,5 ($p < 0,05$). Level of nitric oxide was reliably increased during division of children of the main group according to the age comparatively to the control group ($p < 0,05$). The last tendency made possible definition of nitric oxide irrespective of age, as these data were stable according to the age. Level of nitric oxide was reliably decreased in plasma relatively children of the main group by absence of Helicobacter pylori in mucous membrane of stomach and duodenum. This is evidence that nitric oxide molecule has strong antigerm properties to Helicobacter pylori infection. We have defined reducement of nitric oxide concentration by size of ulcer defect more than 6 mm relatively to group, where the size of defect was 1-2 mm ($p < 0,05$).
Conclusions: There was investigated that nitric oxide level in healthy children was in plasma 15,78±8,2 mcmol/l, in saliva - 56,46±8,2 mcmol/l. In children with ulcer disease of stomach and duodenum NO concentration in plasma and saliva was reliably. There was established that nitric oxide level in biological fluids increased by presence of Helicobacter pylori infection, decreased by severe course of disease, didn't depend on child's age, ulcer defect localization.

Total antioxidant status in patients with major beta-thalassemia

ESC-ID: 940
Authors: Bazvand F, Shams S, Bodaghabadi M
Country: Iran
University: Tehran univercity of medical science , Department: pediatrics

Background: Beta-thalassemia major is an autosomal recessive disease, causing a severe and hemolytic anemia, which begins about 2-6 months after birth. Iron overload, which arises from recurrent transfusion and ineffective erythropoiesis, can enhance oxidative stress in thalassemic patients.
Result and methods: Sixty six Iranian patients with β-thalassemia major and 66 age-gender matched controls were evaluated for serum total antioxidant status (TAS), uric acid (UA), bilirubin and albumin. In addition, serum ferritin and transaminases were recorded in these subjects. Significant increase of TAS, UA, and bilirubin were observed in the patient group, compared with the control group ($P<0.01$). The mean of TAS was higher in male than female in both groups, although the difference was not significant in controls.
Conclusions: Endogenous antioxidant such as ferritin, UA and bilirubin in the patients with beta-thalassemia major can result in increased level of TAS. compensatory excess of TAS to oxidative stress could also be the reason for difference between our findings and previous studies.

Cutaneous manifestations of hospitalized children with henoch-schönlein purpura.

ESC-ID: 1025
Authors: Namiranian P, Shahzadi R
Country: Iran
University: Irran University of Medical Sciences, Department: Pediatrics

Henoch-Schönlein purpura is an immunoglobulin (Ig) A-mediated small-vessel vasculitis that predominantly affects children but also is seen in adults. Its cutaneous manifestations include symmetric Lesions distributed in dependent body areas, such as the ankles and lower legs in older children and adults, and the back, buttocks, upper extremities, and upper thighs in young children. The face, palms, soles, and mucous membranes usually are spared, except in infants, in whom facial involvement may not be uncommon. The subcutaneous edema prominent in children includes the scalp, periorbital regions, hands, feet, and scrotal area. This study was conducted to determine the distribution of affected areas in children. The disease was studied in 46 children. Considering such a variety of possible effected skin areas, the children were carefully examined. The mean age of patients was 7.259 ± 2.982. The male to female ratio was 67%. Maximal seasonal occurrence was in autumn and spring. Skin manifestation was the most frequently encountered sign and symptom (77.4%). Of these, only 10% of them had no leg involvement. Seven patients (4.5%) had edema of the hands, feet, or face. The mean age of this subgroup was 9.2 ± 2.2 months, compared to 6.8 ± 2.3 years for the entire group ($p < 0.05$). Henoch-Schönlein purpura is strongly associated with skin manifestations. Leg involvement is most frequent and hand edema occurs in older children rather than younger patients.

The study of etiological and demographic characteristics of acute household accidental poisoning in children - a consecutive case series study from Pakistan

ESC-ID: 1087
Authors: Manzar B, Manzar N,Saad SMA, Fatima SS
Country: Pakistan
University: Dow University of Health Sciences, Karachi, Pakistan , Department:

Background: To determine the agents of poisoning and demographic distribution of children brought with a history of accidental poison intake and to examine the factors associated with it.
Methods: This hospital based descriptive study of first 100 patients from both sexes who presented to Pediatric department from 1st January 2006 till 31st December 2008 with exposure to a known poisonous agent and fulfilling other inclusion criteria were included in the study. Data regarding their demographic profile and potential risk factors was collected on a well structured proforma, cases were followed until discharge or expiry. Data was analyzed using frequencies, proportions, group means, median and standard deviations.
Results: The male to female ratio in our study was 1.2:1, with kerosene (50%) being the most common household agent followed by medicines (38%), insecticides (7%) and bathroom cleaners (5%). Factors such as mother's education level, number of siblings and storage place of poison correlated significantly with the cases of accidental poisoning. Most of the children (70%) presented within 3 hours of ingestion. Dyspnea was the most common symptom observed. The mortality rate in our study was 3%.
Conclusions: Children belonging to age group 2-3 years are the most susceptible both in terms of morbidity and mortality. Preventive strategies need to be adopted at a national level to spread awareness among parents

Pre-B-cell acute lymphoblastic leukemia initially presenting with rheumatoid complaints

ESC-ID: 1256
Authors: Dikyol M, Oner A, Akinci N, Arpaozu M, Atalay O, Emre B
Country: Turkey
University: Maltepe University , Department: Medicine

Acute leukemia can clinically simulate the rheumatoid diseases.It's,most commonly, in the form of seronegative polyarticular arthritis which involves large joints asymmetrically or arthralgia. Rarely local or diffuse bone and muscle pain can be seen. Sometimes rheumatic signs and symptoms can be initial manifestations of leukemia and peripheral blood findings may be entirely normal. In most of these cases, there may be difficulty in arriving at the correct diagnosis in a short period of time,which can take not less than three months. Our case, a five years old boy, who was admitted to the hospital with complaints of joint pain, back pain, myalgia and diagnosed with acute leukemia. The boy was also suffered from muscle pain in his left leg and limping while walking.At the onset, his complaints began 3 months before with heel pain and 1 month after he had bilateral leg pain,especially prominent in the left knee. The patient followed different health facilities. He was prescribed non-steroidal anti- inflammatory drug (NSAID) for the pain but after the end of therapy there was no benefit; the boy's symptoms increased with complaints of pain. On physical examination he had pale-looking skin,proximal lower extremity pain and tenderness on palpation in his muscles. Laboratory examination revealed the patients sedimentation gradually increased and hemoglobin decreased, he had thrombocytosis, LDH and CRP levels were high. Tests for Infection as an etiological factor ; for salmonella and brucella agglutination test, mycoplasma pneumonia, EBV and CMV IgM were negative. Immunological tests for Connective Tissue Diseases; C3,C4 was normal, ANA (Flourescen assay) was 1/100 possitive, Anti-DNA, p-ANCA and c-ANCA was negative. Because of the peripheral and bone marrow smears were normal and despite treatment with NSAD's, patients pains did not improve, polimyositis was considered and 3 doses of 15 / mg /kg /once in two days I.V. methyl prednisolone pulse therapy was given to the patient. After this treatment , because of limping and hip pain, spine and hip radiograms were taken which were totaly normal. Magnetic Resonance Images of lumbosacral region, vertebral bodies and posterior elements were consistent with malignancy. Depending on immunological classification of reperformed bone marrow biopsy, the differential diagnosis was pre-B Acute Lymphoblastic Leukemia. As a conclusion,with this particular case, it's emphasized that patients who have arthralgia, myalgia symptoms and laboratory findings similar to connective tissue diseases but shows no response to medications should be reconsidered for malignancy and reperformed bone marrow biopsy and MRI.

The diagnosis utility of CD44 and E-cadherine in bladder urothelial carcinomas

ESC-ID: 1313
Authors: Marinas A, Stepan A, Marinas M, Margaritescu C, Simionescu C
Country: Romania
University: UMF CRAIOVA , Department: ATI

Introduction: Loss of intercellular adhesion is one of the most important phenotypic characteristics of transformed tumor cells. CD44 belongs to a family of transmembrane glycoproteins involved in intercellular adhesion and extracellular matrix interaction with the cell cytoskeleton.. E-cadherine is the main component of intercellular adhesion system and is intimately interconnected with catenins and cell cytoskeleton .
Material and methods: We accomplished a retrospective study which has included 20 bladdeer urothelial carcinomas cases diagnosed in Pathology Lab of the Emergency County Hospital of Craiova in 2009. The biological material was processed by common histopathological technique using 10% formalin-fixation, paraffin embedding and Hematoxylin-Eosine stain. The immunohistochemical reaction was made on serial sections using mouse monoclonal antibodies antihuman CD44 (clone DF 1485, DAKO, diluted 1/75) and anti-E-cadherine (clone NCH38, DAKO, diluted 1/50) and as visualisation system we used LSAB+System-HRP, Dako. Diaminobenzidine-tetrahydrochloride (DAB) was used for the developing of reaction. Reactions were quantified using the intensity and the percentage of labeled cells, settling a score 1, 2 or 3 for < 10%, 10-50% and repectively >50% labeled cells.
Results: Hystopathological analysis revealed the presence of well differentiated urothelial carcinomas in 9 cases

and moderately and poorly differentiated in 8, respectively 3 cases. The carcinomas have invaded the lamina propria in 9 cases, the rest of them being invasive in muscularis propria. CD44 showed membranous immunostain in 19 cases and only negative case was moderately differentiated with muscle invasion. In case of lamina propria invasion, regardless of the degree of differentiation, the percentage of labeled cells was over 50%, the score being 3. The reaction intensity was maximum in this cases. In case of muscularis propria invasion the number of marked cells was variable between 5% and 30%, the score being 1 or 2.. In these cases the reaction intensity was diminshed and heterogenous. An immunostaining membranar E-cadherine positive reaction was noticed in 17 investigated cases, the negative or cytoplasmatic reactions being noticed in carcinomas invading muscularis propria. The number of labeled cells was over 50% for carcinomas with lamina propria invasion and below 30% for those with muscle invasion. The reaction intensity diminished with the degree of differentiation. There weren't noticed any significant differences between tumoral grade differentiation regarding the percentage of marked cells.
Conclusions: The immunoexpression of these proteins decreased with the deepth of invasion without differences regarding the degree of tumoral differentiation. CD44 and E-cadherine are useful markers for assessing risk of tumor progression, providing in antibodies panels a clearer image of cellular phenotype.

Survey of mothers experiences premature infants about kangaroo care

ESC-ID: 1348
Authors: Antikchi M, Bakshi F, Javadi S, Dehghan A, Salimi T, Namjou Z, Khodayarian M
Country: Iran
University: Shahid Sadughi medical University, , Department: nursing

Introduction and Objectives: Communication between mother and baby at birth is vital and important ways verbal and non verbal result is that one of these roads, communication between mother and baby non verbal through skin contact, which can cause in children feeling relaxed dependence between the two is higher. According to research, mothers with baby skin contact causes Decreased heart rate and respiration, increased temperature and behavioral status of preterm infants to promote the peace is. Therefore, present study "Experiences of mothers with kangaroo care in premature infants "is.
Methods: This research is a qualitative approach in the NICU of the Iranian hospital using semi-structured interviews of all mothers with infants who were 12 people and care them kangaroo for were in operation was performed. Interviews to phase saturation information continued. Obtained consent from patients to record verbatim statements Ethical Issues observance was. Interviews to assess the experiences of patients in three areas set were: 1 - the first contact after delivery 2 - feeling the mother in contact with raw skin with third baby - feel the changes in vital signs baby. Then qualitative content analysis was performed.
Results: The results show that intrauterine age distribution among the infants 25-39 weeks and mean weight of these infants is 1,420 grams. Breast-feeding only if it was. Small number of maternal postpartum depression due to his premature birth have been expressed. Most mothers were interviewed maximum 5 days after delivery of their first baby in your arms and feel were their first contact on the skin as cesarean section pain relief, satisfaction and sense of calm, motherly feelings were expressed, and only a small number of mothers have expressed fear. Changes such as reduced frequency of crying and decreased respiration followed Ryt hug the baby came into existence.
Conclusion: Generally positive effects in the expression of maternal care was evident that this principle will be assessed.

Kindney transplantation in children - early complications

ESC-ID: 1478
Authors: Ivanisevic I, Kostic M
Country: Serbia
University: University of Belgrade, School of Medicine , Department: Pediatrics

The *Aim:* Kidney transplantation is the treatment of choice for end stage renal failure in children. The aim of our study was analysis of early complications after transplantation in regards to risk factors.
Methods: Retrospective cohort study included 43 patients (44 transplantations) from 6.06.2001. to 1.02.2010. at our clinic. Early complications included complications within 30 days after transplantation: infections, surgical and immunological complications. The age, gender, weight and height of patients at the time of transplantation, initial kidney disease, waiting time, type of transplantation and serological, immunological and laboratory parameters were studied.
Results: The mean age of children was 11,3±4,1 years. Congenital and developmental anomalies of the kidney and urinary tract were the most common aetiologies. Renal transplantation was performed in 81,4% of the patients after haemodialysis treatment. Thirty seven and 7 children received kidneys from living and cadaveric donors, respectively. Living donors transplant recipients were significantly younger than those who received cadaveric graft, and they had a shorter waiting time for transplantation. There was no death observed. The loss of 3 grafts due to primary afunction was most significant complication. Acute tubular necrosis was observed only after cadaveric transplantation. Those grafts established the function later and had lower creatinine clearance. Infections were not significant complications. There was no primary or reinfections with EBV and CMV. There were 7 acute rejection crises.
Conclusion: Early complications after kidney transplantation in our country are rarer than in some other centers. Success of the transplantation and unfavorable effects of prolonged dialysis treatment indicates the necessity of early kidney transplantation in children.

Knowledge of bronchial asthma amongst parents of asthmatic children

ESC-ID: 1479
Authors: Ohud A , Fadia S
Country: South Africa
University: King Saud University , Department: Medical College

Background: Bronchial asthma BA is a very common chronic inflammatory condition affecting children with considerable morbidity and mortality. It has been shown that improvement of parents' knowledge successfully

improves asthmatic control in children. Despite the fact that BA is prevalent in Saudi Arabia, there have been no studies conducted that look into parents' knowledge of this condition.
Objective: The objective of this study is to evaluate parents' knowledge of BA.
Methods: This cross-sectional study was conducted at our clinic in August - October 2009. Parents of children aged 2 -14 years known to have BA for at least one year were included in the study. Participants were asked to complete a self administered questionnaire which was developed by the investigators for the purpose of this study. Descriptive statistics were calculated and comparisons were made using t-test and ANOVA.
Results: A total of 100 parents participated in the study. Mothers constituted 88% of the sample. With regards to their educational background, 21% of parents were illiterate, 58% were primary/secondary school educated, and 21% were diploma or university/college degree holders. Twenty-six percent of the parents were asthmatic themselves, and 36% had more than one child with BA. Sixty-eight percent of parents reported that their child required an Emergency Department (ED) visit within the past 6 months or required at least one hospital admission because of an acute BA attack. The percentage of parents who correctly answered questions related to knowledge in the following areas was as follows: etiology and symptoms: 72%; triggers: 71%; medications: 65%; medication side effects: 28%; and management of acute BA attack: 55%. Parents with post secondary school education had the best knowledge of treatment side effects (p=0.02). Those parents whose child had BA for >4 years scored higher than parents whose child had BA for 4 years in the areas of medication side effects and management (p=0.023 and 0.088 respectively). Parents who had >1 child with BA had overall higher scores in knowledge of all areas than parents who only had 1 asthmatic child; however, these differences were significant only in the area of BA etiology and symptoms (p=0.036). The number of hospital admissions and ED visits for acute attacks of BA did not affect parents' knowledge scores.
Conclusion: Parents of asthmatic children have fairly adequate knowledge of BA etiology, symptoms, and triggers; however, they have inadequate knowledge of how to manage an acute attack and medication side effects. The presence or absence of ED visits or hospital admissions does not affect parents' knowledge of BA. Further attention needs to be given to the role of preventive and educational programs both within the hospital/ED and the community.

Session: Pharmacology and Toxicology

Anti-diarrheal activity of Vincetoxicum stocksii is mediated through calcium channel blockade

ESC-ID: 483
Authors: Ullah H, Sajjad H, Jabbar A, Gillani A
Country: Pakistan
University: The Aga Khan University , Department: Student Medical College

Aim: Vincetoxicum stocksii is a biologically active traditional medicinal herb with established anti-fungal and anti-bacterial activities. Crude plant extract is being used as an anti-diarrheal in rural parts of Baluchistan, Pakistan. This study was carried out to provide a pharmacological basis for the medicinal use of Vincetoxicum stocksii in hyperactive gut states such as diarrhea.
Methods: Both in vitro and animal models were employed. Isolated rabbit jejunum preparations were mounted in organ baths bubbled with carbogen gas (5% CO_2 in O_2) at 37°C. Normal Tyrode's solution was used. The isotonic contractions of the jejunum were recorded on Harvard Student Oscillograph. Effect of increasing concentrations of Vincetoxicum stocksii was noted on both spontaneous and high K+ (80 mM) induced contractions. For the animal model, fifteen mice were randomly divided into three equal groups-saline, loperamide and plant extract treated. All the groups were pre-treated with castor oil to induce hyperactive gut state. Effect of increasing concentrations of Vincetoxicum stocksii on gastrointestinal motility as measured by the quantity of feces observed was documented.
Results: In isolated rabbit jejunum preparations, the crude extract of Vincetoxicum stocksii at a concentration of 0.03-0.05 mg/mL caused inhibition of the spontaneous and the high K+ (80 mM)-induced contractions. This effect was found to be similar to that caused by verapamil suggesting a calcium channel blockade effect. The calcium channel blockade activity was confirmed when pretreated tissues with crude extract of Vincetoxicum stocksii at a concentration of 1-3 mg/mL caused a rightward displacement of the calcium concentrations response curves. Verapamil produced a similar effect in calcium free medium. In the animal models, the crude extract of Vincetoxicum stocksii at a dose of 1 g/kg provided 20% protection from castor oil-induced diarrhea as compared to the saline group- the control. Loperamide at a similar concentration provided 30% protection from diarrhea as compared to the saline group.
Conclusion: The data indicates that crude extracts of Vincetoxicum stocksii contain calcium channel blocking constituents that may possibly explain its medicinal use in hyperactive gut states such as diarrhea. However, further studies are required to evaluate the effects of Vincetoxicum stocksii on cardiovascular and other major organ systems.

The influence of DNA repair inhibitors on the etoposide sensitivity of leukemic cells in vitro

ESC-ID: 522
Authors: Kristev SM, Tarasova AV
Country: Belarus
University: Belarussian State Medical University , Department: Pediatric faculty

Drug resistance of tumor cells remains a major problem in the treatment of cancer. The purpose of this research is to study the influence of DNA repair inhibitors on the etoposide sensitivity of leukemic cells in vitro.
Materials and Methods: The study group included 14 patients aged from 9 months to 18 years diagnosed with acute lymphoblastic leukemia (ALL). Leukemic cells were isolated from bone marrow by density gradient centrifugation using Histopaque-1077. All studies using leukemic cells were carried out before the start of chemotherapy. Etoposide was used in concentration of 10 μg/ml. As an

DNA repair inhibitor DNA-dependent protein kinase Nu7026 inhibitor (10 μM) was used. The etoposide sensitivity of tumor cells was assessed by MTT test. DNA double-strand breaks were assessed by detection of phosphorylated form of histone H2AX (p-H2AX) after exposure of leukemic cells with etoposide and etoposide with Nu7026 after 3 and 24 hours by flow cytometry. Apoptosis of tumor cells was assessed by changes in mitochondrial potential with CMXros probe and flow cytometry.
Results and discussion: According to MTT data etoposide sensitivity of leukemic cells was increased with adding Nu7026 in 11 out of 14 patients (p=0,07). A significant increase of cells expressing p-2AX was observed after etoposide treatment. On average 55 ± 5,4% of cells (p<0,01) had DNA double-strand breaks after 3 h. After 24 hours the number of cells expressing p-H2AX decreased and amounted to 46,5 ± 6,3% (p<0,01). When adding Nu7026 to the cells cultured with etoposide no significant changes in the level p-H2AX were revealed. In the presence of Nu7026 number of cells expressing p-AX was 62 ± 4,1% (p = 0,1) and 45,6 ± 6,2% (p = 0,7) after 3 and 24 hours respectively. Incubation of cells with etoposide and Nu7026 for 24 hours led to an increase in apoptotic cells number when adding the inhibitor. The number of apoptotic cell was 53 ± 6,3% and 46,4 ± 6,3% (p<0,01) respectively. Findings Short-term cultivation of leukemic cells with etoposide leads to the induction of histone H2AX phosphorylation in more than 50% of the cells. Thus, there are individual differences among the group of ALL patients in etoposide sensitivity and the ability of DNA-PK inhibitors to increase this drug sensitivity.

Studying of cytotoxic effects of new antihypertensive compound FAR-2118

ESC-ID: 701
Authors: Chekman I, Kozlovskiy V, Govorukha M
Country: Ukraine
University: National O. Bohomolets medical university , Department: Pharmacology and clinical Pharmacology

Introduction: Treatment of hypertension still is an acute problem of modern medicine. Calcium antagonists in combination with angiotensin converting enzyme (ACE) is widely used to normalize blood pressure. FAR-2118 (derivative of proline and dihydropyridine) - a new drug substance wich combines direct antagonist properties of calcium channel blockers and ACE. During the investigation of physical and chemical interactions of the new compounds with biopolymers using spectrophotometer studies it was determined that FAR-2118 has interaction with different concentrations of DNA. This became the basis for studying possible cytotoxic properties of this compound.
Materials and methods: Cell line Hela (human cervical carcinoma) and HepG2 (human hepatocellular carcinoma) were cultivated in complete nutrient medium RPMI-1640 of 10% embryonic calf serum, 40 mg / ml gentamicine in a moist atmosphere of 5% CO 2 at 37°C. A change of environment was conducted every 2 days. Once the cells formed a dense monolayer on the substrate (4 day growth) performed their Peres, while dissociate cell culture by the FSB with 1 mm EDTA. Cell suspension planted on 96-hole board in RPMI-1640 medium with 10% embryonic calf serum and antibiotics. After 24 hours, the FAR-2118 investigated concentrations (200 to 0.16 microns) brought in. The incubation of the cells was made due to standard conditions 24 and 48 hours, after which the cells are painted with MTT. Results. When visual inspection lines Hela and HepG2 cell cultures by light microscope revealed that FAR-2118 concentrations in 0.32 μM and 1.6 μM does not cause a significant loss in cell number. The dose of 8 μM observed cytotoxic effect of the drug, which increases in dose 40 μM, which is shown to increase cell proliferation. As a result of MTT test FAR-2118 cause 87% loss of Hela cell line at concentrations 8 μM. At concentrations 40 μM in culture dies 99% of cells. For HepG2 cell culture the results are similar: 76, 9% of dead cells at 4 μM and 100% of dead cells at 20 μM.
Conclusions: 1. Concentration dependence of drug effects on the development of apoptosis in cell culture HepG2 and Hela proves the presence of interaction FAR-2118 component of the cell nucleus - the DNA. 2. Revealed cytotoxic effects of the drug give reason for further study as cytostatics, as well as drug for prevention and treatment of atherosclerosis. 3. Induction of apoptosis in cell cultures Hela and HepG2 influenced by FAR-2118 is a requirement for studying its effects on other tissues, particularly on the myocardium.

Application of chitozan hydrogel and amniotic membrane carriers - impact on structure of epithelial cells cultures.

ESC-ID: 707
Authors: Wowra B
Country: Poland
University: Medical University of Silesia , Department: Medical

Purpose: Comparison of cultured epithelium structure on different culture carries.
Methods: 6 patients were donors of epithelial cells: 3 from the corneal limbus, 3 from oral mucosa. Cells from biopsy were seeded on amniotic membranes and genipin crosslinked chitozan hydrogel membranes. Cultures were carried in supplemented DMEM in presence of 3T3 fibroblasts coculture. After 14 days of culture stratified epithelium was analized under light microscope, moreover specimens were fixed to perform immunohistochemical recognition of epithelial cytokeratins and to perform histologic examination.
Results: Amniotic membrane carrier revealed more regular layers of both epithelia with mean number of layers: 6,7 ± 2,1 of limbal and 9,3 ± 4,2 of oral origin. Chitosan scaffolds allowed to form less regular epithelial sheets with mean number of layers: 4,3 ± 0,9 of limbal and 5,0 ± 1,1 of oral epithelium.
Conclusion: Amniotic membrane is more effective carrier to receive regularly

Design and development of nanocarrier for efficient drug delivery into the brain in vitro and in vivo

ESC-ID: 819
Authors: Orthmann A, Zeisig R, Fichtner I
Country: Germany
University: Max Delbrück Center for Molecular Medicine (MDC) Berlin-Buch , Department: Experimental Pharmacology

Therapies for patients with brain cancer or brain metastases are limited and often focus on relief of symptoms. The main hindrance to treatment is the blood-brain barrier (BBB) which prevents most drugs from reaching tumour cells in the brain. An encapsulation of cytostatic drugs into liposomal nanocarrier could provide a possibility to overcome the tight cell layer of the BBB and enhance the therapeutic effect. We developed Trojan Horse Liposomes (THL) to improve drug transport across the BBB and to increase the anti-tumour effect. In first investigation we studied the membrane properties of vesicles with respect to a better passive uptake by and transport through a tight cell barrier. In the next step, an active targeting using a peptide sequence (Angiopep) was additionally applied to obtain an active uptake and transport. It was shown that Angiopep passes the BBB using a physiological transcytosis process mediated by low density lipoprotein receptor related protein (LRP) receptors expressed on the surface of the BBB and brain cancer cells. In this study we could demonstrate in vitro that the liposomal nanocarrier with an optimised composition of the lipid membrane (L2) and an active targeting (L2-THL) using the peptide sequence of Angiopep significantly improved the cellular uptake in MDCK II, bEnd.3 and U373 cells. The transport through a tight cell barrier (transcytosis) with a MDCK II cell barrier model demonstrates that the highest amount of calcein passed through the cell layer was obtained with the THL formulations. In vivo studies using a human xenograft brain metastasis model (MT-3 breast cancer) showed a significantly better anti-tumour effect of Mitoxantrone loaded liposomes concerning the tumour volume reduction compared to the free drug. Furthermore, the treatment with liposomal nanocarrier clear induced fewer side effects like gastrointestinal complications, weight loss and dehydration.

Interaction between doxazosin and human serum albumin

ESC-ID: 998
Authors: Voloshin A, Nebesna T
Country: Ukraine
University: Bogomolets' National Medical University, Department: Pharmacology and Clinic Pharmacology

Protein portion of the human blood contains 60% of human serum albumin (HSA), which can bind with more than 70% of currently used drugs and more than 20 endogenous ligands. Binding of the drug with HSA improves its solubility in blood plasma and diminishes its toxicity, prevents oxidation of the drugs active ingredient and effects pharmacokinetics, including lengthening of half life. At the same time prescribing multiple medicines which bind to the same center of the HSA molecule or disturbances in chelating complexes properties of albumin elicits unpredictable changes in the distribution of the active ingredient in the tissue. Affinity of the drug to plasma proteins traditionally is determined by two methods: equilibrium dialysis and ultrafiltration. Mechanisms of interaction between the drug and protein molecule, and also confirmed changes which accompany such interaction, are investigates with the help of X-ray structural analysis, NMR spectroscopy and computer modeling (in part molecular docking). Doxazosin is an alpha1-adrenergic blocker, used in treatment of hypertension and benign prostatic hyperplasia. This drug has a high binding level with HSA (98%), however fundamental investigations of the mechanisms of the drug's interaction using modern methods are not sufficiently described in literature.
Aim: To carry out computer simulations of doxazosin interaction with HSA, to study the influence of doxazosin on the state of water molecules in HSA.
Materials and Methods: The conformational analysis of doxazosin structure was performed by the Hartree-Fock and density functional theory methods (B3LYP/6-31+G(d,p), using programs ChemCraft 1.5 and FireFly 7.1. Model of HSA molecule was obtained from the Protein Data Bank. Molecular docking was modeled using the AutoDock 4.0 program. Influence of doxazosin on the conformational stability of human serum albumin was performed by 1H NMR spectroscopy (Varian Mercury 400-MHz spectrometer) and thermogravimetric methods, used to characterize adsorbed water layers. In the study lyophilized HSA samples were prepared with the concentration of HSA in them constant and equal to 5%, and the concentration of doxazosin varied in the range of 0,1 - 0,6%.
Results: The binding site of doxazosin in HSA molecule is located in IB subdomain and contains such amino acid residues as methionine-123, tyrosine-161, phenylalanine-134, leucine-115. Interesting, that doxazosin does not interact with warfarin (subdomain IIA) or benzodiazepine (subdomain IIIA) binding sites. During 1H NMR spectroscopy a sample, containing 0,1% of doxazosin, was optimal for interaction with HSA. For this concentration of drug it has been registered a decrease of all types of water-filled compartments, relating to both strongly and weakly bound water. The interaction of HSA with doxazosin causes compactization of protein molecule and decreases it's binding with other HAS molecules.
Conclusions: The results demonstrate that the interaction of doxazosin with human serum albumin is selective for a small number of residues in subdomain IB. Binding of doxazosin induces significant conformational changes in HSA that is part of molecular mechanism of drugs transport by albumin.

Pro-apoptotic activity of alpha1-adrenergic blockers

ESC-ID: 1086
Authors: Nebesna T, Chekman I
Country: Ukraine
University: Bogomolets' National Medical University, Department: Pharmacology and Clinical Pharmacology

Introduction: Prazosin and doxazosin were used as highly effective antihypertensive drugs. However, nowadays alpha1-adrenergic blockers are prescribed as third-line treatment of hypertension due to the increased risk of

heart failure, because of the substances' properties to induce apoptosis in human cardiomyocytes. Alpha1-blockers are drugs of first-line medical therapy in benign prostatic hyperplasia. It has been shown, that quinazoline-based alpha1-blockers (prazosin, doxazosin, terazosin) have anti-proliferative and anti-neoplastic activity against different types of tumor cells, including prostate cancer. However, the mechanism of pro-apoptotic activity for alpha1-blockers (important for therapeutic use and side effects of these drugs) is not fully understood.Aim. To study the relationship of pro-apoptotic activity with alpha1 blockers' chemical structure and understand the physicochemical process of direct interaction between alpha1-adrenergic blockers and DNA.
Methods and materials: In the work we studied quinazoline-based (doxazosin) and arlpiperazine-based alpha1-blockers. Prostatic portions of rat's vas deferens were isolated and stimulated with exogenous phenylephrine to increase their contractile properties and study alpha1-adrenergic blockers activity. Pro-apoptotic activity of drugs was studied on cell lines (HeLa and Hep G2). Cell viability was determined by measuring the ability of the cells to transform MTT to a purple formazan dye. The color intensity of the formazan solution was measured at 540 nm using a microplate spectrophotometer (Labsystems Multiskan PLUS). The interaction of doxazosin and arylpiperazine with DNA was investigated by UV-spectroscopy (Specord-M40, characteristic wavelength - 332 nm) and agarose gel electrophoresis. Structure of doxazosin complex with deoxyadenine were studied by non-empirical quantum-chemical calculations (B3LYP/6-31 G(d, p)), using PC GAMESS/FireFly 7.1.Results. Doxazosin and arylpiperazine displayed similar potency in vas deferens (pA2=8,51 and 8,85, respectively). MTT assay showed doxazosin, but not arylpiperazine, could effectively induce dose- ad time-dependent cytotoxicity in HeLa and HepG2 cell lines. Doxazosin causes inhibition of HepG2 cell proliferation by 50% after 24 and 48 hours of cultivation at concentrations 4 μM, and 90% cell death at concentration 20 μM. Spectral changes in UV absorption titration shows the interaction of doxazosin with the DNA double helix. The binding constant for the interaction between doxazosin and DNA was K = 99 (±0,6) M-1 and the binding site size was 1,7 (±0,3) base pairs. Destruction of DNA with increasing concentrations of the doxazosin in agarose gel has been observed. Quantum-chemical analysis showed that doxazosin has intercalating functionalities. Quinazoline ring forms stacking-interaction with nucleic base (energy -7,93 kcal/mol). Arylpiperazine-based alpha1-blocker has different structural parameters, so its effect on cell proliferation significantly less pronounced than in doxazosin.
Conclusions: Doxazosin may act as DNA-binding compound (by intercalating mechanism) and could therefore cause DNA damage which eventually may induce apoptosis. This effect is structure- and dose-dependent. The alpha1-blocking activity of the drug do not correlate with its apoptotic properties.

Meta-analysis: The effect of ibogaine and 18-methoxycoronaridine on dopamine levels in brain

ESC-ID: 1156
Authors: Pjevalica J
Country: Serbia
University: University of Novi Sad, Faculty of Medicine , Department: Dep. of Pharmacology, Toxicol. and Clin.Pharm

Introduction: Ibogaine (IBO) and 18-methoxycoronaridine (18-MC) are studied as possible antiaddictive substances. In human organism they function through numerous neurotransmitter systems including dopaminergic, which is a part of "reward circuit" - the increase of dopamine (DA) level causes the feeling of pleasure which is connected to the cause (the use of narcotic).
Aim: Exploring the effect of IBO and 18-MC on lowering of DA level in rats' nc.accumbens (NAc) during different narcotics usage.
Methods and materials: For this question, Medline and Scopus were researched for studies that examined the effect of IBO or 18-MC on rats, by using ibogaine, 18-MC, dopamine and rats as key words. The numbers of criteria for including in this question were established. In examined studies morphine, nicotine and cocaine were used as narcotics. The studies varied on the basis of use of narcotic on "drug-naive" rats, which have never used narcotics, or chronically exposed rats. The percentage of DA level change from the moment of narcotic application and after the premedication with IBO or 18-MC was analyzed. Data from the graphs given within studies in question were used. Survey was done by meta–analysis with Cochrane collaboration's RevMan 5.0 programme. During the 180 minute period 3 equal consecutive time intervals were analyzed, with special attention directed towards effects in 60th, 120th and 180th minute.
Results: Only 4 studies among 56 corresponded to established criteria. It has been observed that the duration and intensity of IBO and 18-MC effect differ, depending on the used narcotic itself and the prior exposition to it. The most intensive effect was achieved with nicotine application after 18-MC pretreatment. The longest effect was produced with chronic use of cocaine and IBO pretreatment, while the effect of chronic use of morphine after 18-MC was shorter for 60 minutes, but still longer than in cases of acute use of morphine, nicotine or cocaine. The effect of 18-MC in acute morphine application was twice shorter than in chronic one and noticeable. There was no effect of IBO in "drug-naive" rats after application of cocaine.
Conclusion: IBO or 18-MC premedication in acute nicotine use and chronic cocaine and morphine use significantly decreases DA level. This effect can be used as a platform to explore the antiaddictive potential of IBO and 18-MC.

Effect of age on rat brain mitochondrial function: expressed as Reactive Oxygen Species (ROS) production in animals exposed to Novelty and Open Space.

ESC-ID: 1172
Authors: Bains R, Markham A, Franklin P
Country: United Kingdom
University: University of Sunderland , Department: Faculty of Applied Sciences

Aim: The free radical theory of aging has long been established, and the major site for the production of these free radicals is the mitochondria. This study was designed to establish the effect of anxiety on the reactive oxygen species production in old and young rats.
Materials and method: Male Wistar rats were bred in-house on a 12h light and dark cycle and controlled humidity. The animals were allowed free access to food and drinking water. Young rats were 2-3 months old (n=10) and old rats were 24 months+ (n=10). The chemicals were obtained from Sigma. Exposure to anxiety was carried out in an eight arm radial maze with elevated open arm platform for open space testing, as described by Ennaceur and co-workers (2008). Open space testing (OST) was carried out by introducing an animal to the maze without previous habituation, where it is forced to explore and cannot escape or avoid. Half of the aged rats and half of the young rats were exposed to the maze for 12 min while the other half were left in their home cage. At the end of the test sessions animals were decapitated and their brains retrieved for mitochondrial isolation. Reactive oxygen species production was determined through fluorescence measurements using a FlexStation. Two substrates were used, 5mM glutamate plus 5mM malate and 5mM succinate. The measurements were carried out at excitation/emission wavelengths of 530 and 590 nm, respectively. Results The results for OST for aged rats showed that, they did not explore beyond the central platform of the maze, and spent most of their session time in one spot. The OST results for young males showed that, they explored all arms and spent most of their session time exploring. This study demonstrated that older rats had lower baseline mitochondrial efficiency markers as compared to younger rats. When exposed to anxiety, older rats, showed an inhibitory effect on Complex II, as seen from the significant ($p<0.01$) decrease in ROS production on addition of 5 mM succinate.
Conclusions: To explain this effect we put forward a hypothesis based on the knowledge that most of the mitochondrial reactive oxygen species production occurs at complex I and that seen at complex II actually also occurs at complex I through the phenomenon of reverse electron transfer. In aged rats the efficiency of cellular respiration is already lower than normal young rats and the added stress of anxiety causes the mitochondria to uncouple partially in a bid to survive this stress. This also causes the reverse electron transport to stop since there is no movement of protons down the gradient or up it, and an apparent inhibition of mitochondrial complex II is seen in aged rats exposed to open space testing.

Characterization of a novel anti-mitotic agent – An approach on multiple cellular levels

ESC-ID: 1234
Authors: Eisenlöffel C, Schmöle A-C, Pews-Davytan A, Beller M, Rolfs A, Frech M
Country: Germany
University: Universität Rostock , Department: Albrecht-Kossel-Institut für Neuroregeneratio

Cancer therapy is constantly developing into more pathway-specific, individual strategies. Nevertheless, agents aimed at tubulin-formation, anti-mitotic substances, have been and are still core elements of tumor therapies. Due to growing multiple resistances to well-known substances like Taxanes, development of new anti-mitotic agents is of particular interest. Several newly synthesized indolylmaleimides have been screened for cytotoxicity. One of these new compounds, PDA66, showed strong effects on cell metabolism and was subsequently submitted to further investigation. The effects of PDA66 were investigated the human neuroblastoma-line SH-SY5Y and the ReNCell VM197 cell line (Gulidford, UK), a v-myc immortalized human neural progenitor cell-line derived from the ventral mesencephalon of a 10 week old embryo, as an immortalized but non-tumor origin cell line. Influence on proliferation and vitality were investigated by electrical-current-based cell counting and analysis. Cytotoxic effects were in determined a WST-assay based on mitochondrial cleavage. Cell cycle analysis was performed by measurement of DNA content by fluorescence activated cell sorting with Propidium-Iodide, a fluorescent molecule that intercalates with the DNA. For investigation of the microtubule-related mechanism immunocytochemical staining of alpha-tubulin was used. PDA66 exerted strong downregulating effects on cell proliferation at low concentration levels in both cell lines (IC50 = 543.5 nM in VM197, IC50 = 525 nM in SH-SY5Y) . Also, a dose-dependent decrease in cell vitality, down to less than 30%, was detected in all cell lines, but most prominently in proliferating VM-cells. In proliferating and differentiating VM-cells the agent significantly decreased cell metabolism by more than 75% after 48h, but had no effect on metabolism in differentiated cells. Cell sorting with PI-staining showed a maximum G2/M-cycle-arrest after 16 hours, with more than 70% of the in G2/M-phase under PDA66-treatment compared to less than 20% in the negative control. Immunostaining of alpha-tubulin showed a visible effect of PDA66 on the microtubule network. The highly potent activities of PDA66 in proliferating cells, neural progenitor cells and neuroblastoma cancer cells support its further investigation and characterization as potential anticancer agent. Our experiments show the influence of PDA66 at different cellular levels, e.g. on DNA, on shape and polymerization status of tubulin, cell cycle progression of single cells, and changes of proliferation and cell numbers in cell cultures. and might also function as a model approach to characterize further anti-mitotic substances.

The local anesthetic activity of combinations of some local anesthetics with mexidol

ESC-ID: 1252
Authors: Zakharchenko EY
Country: Russia
University: Kuban State Medical University , Department: medical

Objective: To improve local anesthetic activity of lidocain, rihlokain, anilokain and derivative of pirazolobenzimidazola RUS-66 (lab code) by combining them with antioxidant mexidol.
Materials and methods: surface (rabbits), infiltration (guinea pigs), conductor (rats), spinal (rats) and epidural (rabbits) anesthesia of the substances were studied by the methods described by Ignatov YD et; effects on transmembrane ion currents were investigated in experiments on isolated neurons of the gastropod.
Results and discussion: the local anesthetic activity and the width of therapeutic action in terms of surface anesthesia in the combinations of lidocain and RUS-66 with mexidol are bigger than of lidocain and RUS-66, prepared on saline solution. The activity of the combinations of rihlokain and anilokain with mexidol is comparable with those anesthetics, taken separately, the width of therapeutic action is more important. In terms of infiltration anesthesia the combinations of lidocain, rihlokain, anilokain and RUS-66 with mexidol on both indicators are superior to control combinations. In terms of conducting, spinal and epidural analgesia the duration of total anesthesia and the general duration of anesthesia are more significant in the combinations of local anesthetics with mexidol than in the control compositions. The blocking effect of the combination of lidocain with mexidol on sodium, calcium and slow potassium ion currents of isolated neurons is more significant than that of lidocaine and mexidol taken separately.
Conclusions: 1) the combinations of lidocain and rihlokain with mexidol are recommended to be used in spinal and epidural anesthesia; 2) the substance RUS-66 in combination with mexidol may be recommended for further preclinical study.

Prevention of squamous cell carcinoma in the bronchial epithelium

ESC-ID: 1352
Authors: Zaidan H, Khalin I, Storozhynko K
Country: Ukraine
University: Kharkov National Medical University, Department: Pharmacology

Introduction: A prominent issue circulating our sphere today is the progressively changing environment and atmosphere causing a rise in air pollution. In response to this chemical alteration, respiratory diseases have also rocketed. Alongside this, factors of our modern world such as smoking and harmful fumes have contributed to bronchial diseases and their progression into chronic illnesses most common being COPD. It is composed of inflammation, bronchial obstruction and hyperinflation. According to modern studies, prolonged bronchospasm leads to the development of squamous cell carcinoma of the bronchial epithelium. As recommended by literature, prophylaxis is better than treatment, and a possible solution of prophylaxis is suggested by Amkesol. This latest addition to cough drugs is a combination of the best and the botanical whose components include Ambroxol, Ketotifen, Liquorice Root and Theobromine. Properties of Amkesol not only include antitussive and mucolytic effects but also play a big role in relieving bronchospasm thereby preventing the development of bronchial cancer.
Materials and methods: Researches were conducted on 54 WAG rats in compliance with rules of Good Laboratory Practice of both sexes and three age groups-one, two and three months old using both forms of Amkesol-powder and syrup. To stimulate bronchospasm, 0.05% solution (0.1 mg/kg) of neostigime was injected intraperitoneally. The rats were firstly divided into 3 groups: group 1-control, group 2-neostigmine-induced bronchospasm, and group 3-neostigmine-induced bronchospasm with the prior administration of Amkesol. Group 2 and 3 were injected with neostigmine intraperitoneally and Group 3 was administered with Amkesol one hour before the injection of neostigmine. To investigate the powder, the rats were registered on a dose regimen consisting of an oral administration of powder dissolved in 3% solution of starch. The slime was given in the dose of 8 mg per kg via a gastric probe. As for the syrup, the dose was 0.9 ml per kg and also via a gastric probe. The rats were then anesthetized using 20 mg/kg of Sodium Thiopental solution and the frequency of respiratory movements were monitored using digital apparatus which recorded voltages and tissue response for a period of forty seconds. Group 1-control-are assumed to be 100% of breathing frequency.
Results: Neostigmine induced bronchospasm and decreased respiratory movements by 12.3% in 1 month old rats, 18.9% in 2 month old rats and 29% in 3 month old rats. In group 3 after the administration of Amkesol, the following was revealed. In 1 month old rats respiration was restored to 48.2 % (syrup), 46.1% (powder) and bronchospasm relieved by 75% (syrup) and 70% (powder). In 2 month old rats respiration was restored to 46% (syrup and powder) and bronchospasm relieved by 68.2% (syrup and powder). As for 3 month old rats, respiration was restored to 45.8% (syrup), 51.3% (powder) and bronchospasm relieved by 67.7% (syrup) and 70.9% (powder).
Conclusion: Overall Amkesol has prove its properties of restoring respiration by an average of 47.1% and relieving bronchoconstriction by 69.3%. These figures are significant changes and provide Amkesol with credible evidence to be used as a prophylaxis against Bronchial cancer.

Cardioprotective effects of angiotensin II receptor antagonists during acute hemodynamic overload in ischemia

ESC-ID: 1406
Authors: Neves JS, Ferreira RC, Ladeiras-Lopes R, Pintalhão M, Carvalho R, Leite-Moreira A
Country: Portugal
University: University of Porto, Portugal , Department: Department of Physiology

Introduction: Acute hemodynamic overload frequently occurs in myocardial ischemia, leading to a decline in myocardial contractility and an increase in myocardial stiffness. Angiotensin II (AngII), locally produced during ischemia, is known to influence cardiac function.
Aim: To evaluate the systolic and diastolic responses to

an acute hemodynamic overload during an ischemic insult in the presence of AngII receptor antagonists.
Methods and materials: Rabbit papillary muscles (modified Krebs solution, 0.2Hz, 1.8mM Ca2+, 30°C) were mechanically overloaded from 92% Lmax to 100% Lmax (length at which maximal force is developed), during an ischemic insult (Isch, stretch during ischemia, followed by reperfusion; n=7); during an ischemic insult in the presence of ZD-7155, a selective AT1-receptor antagonist (Isch-AT1: 10-6M; n=7) and during an ischemic insult in the presence of ZD-7155 (10-6M) and PD-123,319 (10-6M), a selective AT2-receptor antagonist (Isch-AT1+AT2; n=8). Immediate and delayed responses to muscle stretch were evaluated. Results as mean±standard error ($p<0.05$).
Results: In the Isch group, after the immediate increase in contractility upon stretch, there was a steady decline in active tension (AT) of 70.4±5.2%. In the presence of ZD-7155, the deterioration of contractility was prevented (AT decreased 4.1±11.0% in Isch-AT1 vs 70.4±5.2% in Isch, $p<0.001$). This effect was partially blocked when an AT2 receptor antagonist was also present (AT decreased 35.5±11.0% in Isch-AT1+AT2 vs 4.1±11.0% in Isch-AT1, $p<0.05$). Considering diastolic function, in the Isch group, immediately after stretch there was an increase in myocardial stiffness, which was sustained over time. On the contrary, when the AT1 receptor was selectively blocked, there was a significant decrease in myocardial stiffness (passive tension decreased 28.7±3.7% in Isch-AT1, $p<0.05$). The presence of PD-123,319 did not modify this response.
Conclusion: We demonstrated that Ang II, contrarily to the positive inotropic effect that shows in the non ischemic muscle, is responsible for a significant deterioration of the contractile function during an ischemic episode. Ang II also increases the myocardial stiffness, during an ischemic situation, having the opposite effect to the one it has in the non-ischemic myocardium. The decline in contractility and the increase in stiffness elicited by an acute hemodynamic overload, during myocardial ischemia, can be successfully prevented using a selective AT1-receptor antagonist. The systolic counterpart of this effect is partially dependent on AT2 receptor activation. Our results highlight the importance of using angiotensin II receptor blockers early, during the acute phase of myocardial ischemia. This can probably avoid further hemodynamic decompensation. They also support the use of AT2 agonists as a potentially new therapeutic target in myocardial ischemia.

Session: Pharmacology and toxicology POSTER

Pharmacokinetics of paracetamol in patients after gastric resection

ESC-ID: 633
Authors: Sobiech M, Szatek E, Murawa D, Kamińska A, Potom K, Urbaniak B, Grześkowiak E, Murawa P, Kokot Z
Country: Poland
University: Karol Marcinkowski University of Medical Sciences , Department: Clinical Pharmacy and Biopharmacy

Introduction: Gastrectomy causes pathophysiological changes in the gastrointestinal tract, which may be responsible for drug absorption, the drug's blood concentrations and drug pharmacokinetics (PK). A drug's changes in PK can influence on the pharmacological effect. Drug pharmacokinetics may depend on the type of resection. Partial gastrectomy can have a different effect on pharmacokinetic parameters than total gastrectomy. Monitoring pharmacokinetic parameters in these patients can help to determine the best dosage.
Aim: The aim of the study was determining the pharmacokinetic parameters of paracetamol in patients with gastric cancer treated with total gastrectomy.
Material and methods: Fifteen patients with gastric cancer were analyzed. The patients received 1000 mg of paracetamol orally.Blood was obtained before paracetamol administration and 15, 30, 45 min. and 1h, 2h, 3h, 4h, 6h after the administration. The concentrations of paracetamol and it's metabolite (paracetamol glucuronide) in patients' plasma were determined by HPLC method with UV detection.
Results: The maximum concentrations of paracetamol and it's metabolite (mean ±standard deviation) were 9,8 ± 3,7 μg/ml and 14,9 ± 5,3 μg/ml, respectively. In analyzed patients the following pharmakokinetic parameteres were also calculated: kel elimination constant rate, Tmax time to maximum concentration AUCinf total area under the plasma concentration-time curve,t0.5 elimination half-life, MRT - mean residence time MAT- mean absorption time, ka absorption constant rate.
Conclusions: In analysed patients after total gastrectomy we revealed some changes in paracetamol pharmacokinetics.Tmax is longer in comparison with healthy subjects(1,5h vs. 0.5h*). Cmax (9.8 μg/ml vs. 17.0 μg/ml* vs. 17.7 μg/ml**), AUC (41.1 ug/ml*h vs. 77.8 ug/ml*h **), Ka (1.3h-1 vs. 1.9 h-1**) are decreased in comparison with healthy subjects.

Protective effects of Sambucus nigra polyphenols in the diabetic heart

ESC-ID: 664
Authors: Bejinariu AG, Ciocoiu M
Country: Romania
University: Universitatea de Medicina si Farmacie "Gr. T. Popa" Iasi , Department: Pathophysiology

Aim: The present study focuses on the way in which natural polyphenols extracted from the Sambucus nigra fruits influence the oxidative stress from the experimental diabetes, as well as improve the state of the cardiovascular lesions.
Methods and materials: The research was performed on Wistar white rats, with an average weight of 250-280 g, which were divided into 4 groups of 10, namely: W Group = control, normal animals, that did not receive natural polyphenols; P Group = rats that were administered natural polyphenols by tube feeding 0.040 g/Kg body every two days, for a period of 16 weeks; DM Group = rats with diabetes induced through streptozotocin (STZ) injection 55 mg/Kg body mass, 3 weeks after the beginning of the experiment; DM+P Group = rats that were administered a polyphenolic preparation for 3 weeks before and 13 weeks after the induction of diabetes mellitus.
Results: The control of the blood glucose level in the rats belonging to group DM revealed a very significant increase in blood glucose when compared to group W, fact

which demonstrates the lesion of beta cells in the islets of Langerhans. The glycosylated haemoglobin values in the diabetic group were very high, as compared to the group protected by elder fruit extract where these values were significantly low. Due to the polyphenolic protection, the serum activity of glutathione peroxidase is more intense for the diabetic rats treated with natural polyphenols as compared to the diabetic rats. The obtained results highlight a significant improvement ($p<0.001$) in the antioxidative capacity of the serum in diabetic rats treated with natural polyphenols, bringing back to normal the concentration of reduced glutathione, as well as an important decrease in the serum concentration of malondialdehyde, thus proving an important decrease of the lipidic peroxides in serum. The fibrinogen was determined as an acute-phase protein, and the uric acid as a nonspecific marker of oxidative stress. Statistically, the values of the uric acid remain significantly increased in the diabetic group (DM), as well as in the group DM+P in comparison with group W, and significantly decreased in group DM+P in comparison with group DM. The polyphenols limit the production of fibrinogen in group DM+P, the values being highly significant when compared to group DM.
Conclusions: The natural polyphenols extracted from the Sambucus nigra fruit can favorably influence the dysmetabolic status in the experimental diabetes, through the amelioration of hyperglycemia and oxidative stress. Due to these properties, the polyphenol extracts of Sambucus nigra have cardioprotective effects and could be used as nutritional supplements in chronic cardiovascular and metabolic diseases.

Chronopharamacokinetics of acetaminophen in healthy rabbits.

ESC-ID: 704
Authors: Cerbin M, Kaminska A, Bienert A, Grzeskowiak E, Plotek W
Country: Poland
University: Poznan University of Medical Sciences , Department: Pharmacy

Aim: To evaluate the chronopharmacokinetics of acetaminophen and its metabolite, acetaminophen glucuronate, in healthy rabbits after a single intravenous route. Another aspect of the trial was to check the passage of acetaminophen and its metabolite through blood - eye barrier.
Methods and materials: The investigation was performed in three stages. An cross-over trial design was used, i.e. three groups of three rabbits has been given paracetamol in a single dose of 35mg per kg of body weight at 8:00h, 16:00h and 22:00h.
Results: Following average values of pharmacokinetic parameters of acetaminophen in the rabbit plasma in the group of rabbits given acetaminophen at 22:00h were obtained: ke[h-1]= 0,513±0,149, t0,5[h]= 1,447±0,378, MRT=1,902±0,404. We observed that ke was higher and that t0,5 and MRT were lower after evening then administration during the day. Following average values of pharmacokinetic parameters of acetaminophen glucuronate in the rabbit plasma in the group of rabbits given acetaminophen at 8:00h were obtained: Cmax[μg/ml]= 170,876 ± 41,360, tmax[h] = 0,398 ± 0,297, ke[h-1] = 0,684 ± 0,187; Cl[l/h] = 0,416 ± 0,133, t0,5[h] = 1,062 ± 0,202. We observed that Cmax, Cl and ke were higher when tmax and t0,5 were lower than after the routes at 16:00h and 22:00h.
Conclusions: We observed decrement of paracetamol excretion at evening hours. Our data shows also, that conjugation of acetaminophen with glucuronic acid is greatest about 08:00 and its main metabolite - acetaminophen glucuronate, is excreted more quickly after morning than afternoon or evening administration.

Chemoprotective effects of Zataria multiflora against genotoxicity induced by cyclophosphamide in mice bone marrow cells

ESC-ID: 801
Authors: Ahmadashrafi S, Hosseinimehr SJ, Naghshvar F, Ahmadi A, Ehasnalavi S
Country: Iran
University: Mazandaran University of Medical Sciences, Department: Faculty of Pharmacy

Introduction: Human encounters hazardous environmental chemical agents in its life. These compounds produce toxic substance in tissues mainly free radicals and species reactive oxygen. These reactive compounds capable induce damage to critical macromolecules such as DNA that induces chronic disease including cancer. Medicinal plants have preventive properties due to potential chemical constituents such as phenolic and flavonoids. These physiological benefits of phenolic compounds are generally through to be due to their antioxidant and free radical scavenging properties. Zataria multiflora(ZM) is potential medicinal plant grown in Iran and has phenolic compounds such as Thymol and Carvacrol.
Material and Methods: Mice were orally pretreated with solutions of ZM extract prepared at 3 different doses (50, 100, and 200 mg/kg body weight) for 7 consecutive days. They were injected with CP (50 mg/kg body weight) on the seventh day of treatment and killed after 24 hours for the evaluation of micronucleated polychromatic erythrocytes (MnPCEs) and the ratio of PCE/(PCE + NCE), where PCE refers to polychromatic erythrocyte, and NCE refers to normochromatic erythrocyte.
Results: All 3 doses of extract significantly reduced MnPCEs induced by CP ($P < .0001$). Zataria extract at a dose of 200 mg/kg body weight reduced MnPCEs 7.8 fold and also completely normalized the PCE/ (PCE + NCE) ratio. Administration of ZM inhibited bone marrow suppression induced by CP. Zataria extract exhibited concentration-dependent antioxidant activity on 1, 1-diphenyl 2-picryl hydrazyl free radical and lipid peroxidation.
Discussion: It appeared that ZM with antioxidative activity reduced the oxidative stress and genotoxicity induced by CP in mouse bone marrow cells.

The study of immunomodulators of different pharmacological groups action on eradication and immunological status

ESC-ID: 889
Authors: Govinden K, Dugina V
Country: Malaysia
University: Nizhny Novgorod State Medical Academy, Department: General Medicine

Aim: To investigate the influence of immunomodulators Licopid and Immunal on efficiency of eradication of H.Pylori(HP) and to reveal interrelation of changes of intensity of local and general immunity and parameters of eradication at use of „quadroscheme consisting of Omeprazole (20mg/twice daily), Bismuth subsalicylate (120 mg/twice daily), Amoxicillin (1000mg/twice daily) and Furazolidon (200mg/twice daily)“ with Licopid (10mg/once daily) or Immunal (10mg/once daily) on background of the given therapy.
Methods: This research is carried out on 70 patients within the age range of 20-55 years with chronic peptic ulcer associated with H.Pylori. Depending on types of received therapy, three groups of patients have been allocated:- group of comparison consisting of 20 patients receiving "quadro-scheme", a basic group(1st)of 25 patients receiving "quadro-scheme" in a combination with Licopid, a basic group of 25 patients(2nd) receiving "quadro-scheme" with Immunal. Before and 6 weeks after application of preparations, the histomorphological tests of biopsy material taken endoscopically from stomach and blood immune tests are done.
Results: In group of comparison, eradication has been less expressed and came to light coccal forms whereas in 1st and 2nd basic groups the parameter of eradication is essentially above and coccal forms HP are absent. After termination of thereapy, structural parameters in 1st and 2nd basic groups show that epithelial endothelium of departments of anthral glands are restored quicker than in the control. Besides, introduction of immunomodulators Licopid and Immunal in the quadro-scheme leads to positive dynamics of parameters of cellular immunity in 1st and 2nd basic group. Moreover, application of Licopid leads to authentic increase in the maintenance of antibodies in 1st basic group. However, application of Immunal in 2nd basic groups did not reveal any appreciable dynamics in levels of antibodies.
Conclusions: The usage of immunomodulators in combination with drugs for eradication leads to increasing of bacterial elimination and improved immune resistance. In this case, Licopid increases both cellular and humoral immune response whereas Immunal increases cellular immune response significantly(primary cell protective reactions). In this connection immunomodulators Licopid and Immunal can be recommended in common with the scheme eradication for elimination of a secondary immunodeficiency caused by H.Pylori.

Cytotoxicity of methylsulfonylmethane (MSM) on brest cancer (MCF-7) cell line

ESC-ID: 905
Authors: Jafari N, Bohlooli SH, Shirzad Z
Country: Iran
University: Ardabil University of Medical Sciences , Department: Pharmacology Department

Introduction/aim: Breast cancer is one of the three most commonly diagnosed types of cancer among women in 2009. Breast cancer is the second leading cause of cancer death in women. Methylsulfonylmethane (MSM) also known as dimethyl sulfone is an organic form of sulfur with the formula of CH3SO2CH3. MSM has unique properties related to its chemical structure and biological activities. MSM is a hypoallergenic agent and can be dietary supplement to support proper joint, connective tissue and skin health. MSM supports collagen formation and maintain cell membrane flexibility. MSM is considered to be one of the least toxic substances in biology, similar in toxicity to water. The administration of MSM to human volunteers has been showed no toxic effects. In spite several experiments have shown that oral administration of MSM can protect rats against the onset of cancer. The researchers concluded that MSM significantly lengthens the time of tumor onset compared to the controls. Considering preventive effects of MSM on tumor onset and non toxic to healthy body and hence chemosensitive properties of breast tumors, we investigated cytotoxic effects of MSM on this cancer in vitro.
Method and materials: MSM prepared in 50 mg/ml concentration with RPMI 1640. MCF-7 cell line provided from Pasteur Institute of Iran (Tehran, Iran) and plated in 96-well plates with the density of 1x104 per well in 200 μl of medium (RPMI 90% + FBS 10%) and incubated for an overnight (37C, 5%CO2, air humidified). plates were treated with MSM by initial concentration of 50 mg/ml with serial dilution and incubated for 72 hrs. Cytotoxicity of MSM was examined by MTT assay.
Results: MSM had shown cytotoxic effects on breast cancer cell lines at 72 hrs incubation time. Inhibitory concentration of 50% (IC50) of the MSM on MCF-7 cell line was 34 mg/ml.
Conclusion: MSM had cytotoxic effects on breast cancer cells in vitro.

The investigation of technological properties of Leonurus, Crataegus and Ginkgo extracts

ESC-ID: 931
Authors: Petkeviciute Z, Bernatoniene J, Kalveniene Z, Savickas A.
Country: Lithuania
University: Kaunas university of medicine , Department: Drug technology and Social pharmacy

The aim of this study was to prepare the formulation of herbal extract mixture in ratio - Ginkgo extract:Leonuri extract:Crataegi extract (1:5:6) with excellent technological properties. The flowability study showed that excipients (Prosolv HD90, mannitol+colloidal silicon dioxide and microcrystalline cellulose+colloidal silicon dioxide) reduced powder dustiness and improved powder flow rate index, yet the evaluation of bulk density, tap density,

Carr's index, Hausner ratio, and angle of repose values showed that the herbal powder mixture did not demonstrate excellent powder flow rate index. Wet granulation helped to improve the herbal powder flow rate index by 1.7-2.0-fold, to control powder density, and to control the tendency of powders to segregate. The results showed that different binder solutions had different effect on powder flow rate index. Granulation of the maidenhair tree, hawthorn, and motherwort extract powder using a natural and related binder solution - motherwort extract ethanolic solution - resulted in the lowest particle size variation. In addition, natural binder solutions had different effects on powder flow rate index and particle size, and provided the powder with better technological properties than chemical binder solutions - such as ethanol or ethanolic povidone solution - did. These data suggested that wet granulation statistically significantly improved powder flow, which may be rapidly evaluated using tap powder densities. The granulation of the powder of maidenhair tree, hawthorn, and motherwort extract mixture using a related binder solution - ethanolic solution of motherwort extract - resulted in the lowest particle size variation. In addition, natural binder solution affected powder flow and particle size and provided powder with better technological properties than a chemical binder solution did.

Hypoglycemic Action Of the Flavonoids Fraction of Cuminum Nigrum Seeds

ESC-ID: 972
Authors: Waseem HM, Ahmad M, Ullah E
Country: Pakistan
University: University of Health Sciences , Department: Medicine

Cuminum Nigrum Linn Locally known as "kala zera" belongs to family umbelliferae and is widely used as condiment in south-asia. The seeds of the plant have been used in traditional medicine for various medicinal purposes. In previous animal studies, it was found that the antidiabetic use of the plant has a scientifically justified basis, as the aqueous and methanol extracts of c. Nigrum seeds exhibited a hypoglycemic effect in rats. The objective of the study was to see the effect of Flavonoid fraction of Cuminum Nigrum Seeds on blood glucose levels of albino rats. The seeds of Cuminum Nigrum were screened phytochemically and found to contain 8% flavonoids and 0.01% alkaloids. The amount of isolated crude flavonoids required for each rat was calculated on a body weight basis. Animals were given the drug orally and hypoglycemic effect was noted at 0, 2, 4 and 24 hour intervals. Data was statistically analyzed by completely randomized design (CRD) using SPSS computer program. When studies for their effect on blood glucose levels, oral administration of the flavonoid contents of the plant caused a hypoglycemic effect at a dose range of 0.5% to 1.5%/kg, both in normal and alloxan-diabetic rats, The hypoglycemic effect started 2 hours after drug administration, reaching a maximum within 4-8hours and the blood glucose levels returned close to normal within 24 hours of drug administration. The glibenclamide (5mg/kg) produced a hypoglycemic effect in normal rats, whereas it had no effect on the blood glucose levels of alloxan-diabetic rats. The alkaloids isolated from C. Nigrum seeds, however failed to exert any significant hypoglycemic effect in either the normal or diabetic rats. A 7-day acute toxicity study in rats did not produce any apparent adverse effect at doses as high as 5g/kg orally. These data indicate that the total flavonoid contents of C. Nigrum seeds exhibited a considerable hypoglycemic activity in rats and may therefore be responsible for the previously reported anti-diabetic activity of the seeds. Furthermore, it is conceivable that the C. Nigrum posses insulin triggering and/or insulin-like properties.

Synthesis of triazoloquinazolinone derivatives as antiproliferative and antiplatelet aggregation agents and evaluation of their biological effects

ESC-ID: 1124
Authors: Kobarfard F, Safizadeh F, Amidi S, Ghaffari S
Country: Iran
University: Shahid Beheshti University of Medical Science and Health Services, School of Pharmacy , Department: Medicinal Chemistry

The heat shock-shock protein 90 family is one of the most important chaperon proteins in the cells which are dedicated to oncogenic proteins such as thyrosine kinases, EGFR, IGF-1 receptor and serine/theronine kinases. Consequently, HSP90 inhibitors induce destabilization and degradation of above-mentioned oncoproteins. Certain 2-amino-5 quinazolinone derivatives have been shown to have antiproliferative activities via inhibition of HSP90. On the other hand, quinazolinone derivatives have been reported as platelet aggregation inhibitors. The present study describes the synthesis of a group of triazoloquinazolinone derivative using a three-component one-pot reaction of 2-aminotriazole, an aromatic aldehyde and 1,3-cyclohexanedione. Due to their polycyclic and planar structure, the synthesized compounds have the potential to exert their antiproliferative activities by DNA intercalating mechanism too. Antiproliferative activity of the compounds was evaluated using colonigenic method and anti-platelet activity was measured by a turbidimetric method based on the method described by Born.

A new promising hepatoprotector aqgpd with natural origin

ESC-ID: 1248
Authors: Karamalakova Y, Nikoplova G, Gadgeva V, Zheleva A, Sharma RK, Kumar R, Tolekova A
Country: Bulgaria
University: Trakia University , Department: Medical Chemistry and Biochemistry

Background: Formerly, for AQGPD a fraction isolated from a radioresistant bacterium Bacillus sp. INM-1 was established that possessed high radio protective effect against gamma radiation at in vivo models. Presence of free radical structures in solid and solution form of AQGPD [Raj Kumar et al., 2009] was registered by direct Electron Paramagnetic Resonance (EPR) spectroscopy. Moreover , using EPR spectroscopy a well expressed radical scavenging capacity of AQGPD towards stable radical 1,1-diphenyl-2-picrylhydrazyl (DPPH) was also demonstrated. *Purpose:* The aim of the present study was: first - by ex vivo EPR spin-trapping technique comparatively to study

the levels of reactive oxygen species (ROS) production in liver homogenates of mice treated by AQGPD, anticancer drug (CCNU) and by a combination of CCNU plus AQGPD and second - by a combination of radiolabelling with 99m Tc following with scintigraphy to study effect of AQGPD on biodistribion in tested rabbits of a spin labeled (stable nitroxyl free radical moiety containing) nitrosourea SLENU that is analogue of CCNU drug.
Results: It was established that CCNU caused statistical significantly increased level of ROS production in mice livers, comparing to the controls while AQGPD did not cause any lipid peroxidation (LPO) process in livers of mice. Moreover AQGPD completely reduce this process when was introduced 30 min before CCNU. We also found that when SLENU was given intravenously in rabbits 2 hours after AQGPD the last reduced almost in 40 % the level of the biodustribited SLENU in animal livers in comparison with SLENU biodistribution level, alone.
Conclusions: Based on the results obtained AQGPD might be characterized as a excellent naturally isolated hepatoprotector with well expressed free radical scavenging abilities.

Beta blocker for anxiety relief and its effect on problem solving

ESC-ID: 1314
Authors: Masoomi R, Arabzadeh A, Masoomi L
Country: Iran
University: Tehran university of medical sciences , Department: medicine

Introduction: Stress before exams always interfere with function s of students, especially who are a bit more anxious. There are Different ways to control and decrease it. One of them can be pharmacotherapy.
Material and methods: We use a clinical trial with beta blocker. Among students OF a high school ,we prepare a questionnaire regarding their anxiety through exams and we score their response .based on our score of their anxiety we selected 20 students who had more Than 5 on 10 score, we randomly separate them to 2 group ,one with placebo ,the other one with beta blocker, after exam we prepare a questionnaire to evaluate their stress during exam, also we ask about change in their problem solving ability change through exam. We conducted it as a double blinded study.
Results: our results show a meaningful decrease in stress in comparison with placebo group. Meanwhile there is no significance decrease in problem solving power.
Discussion: Our study show effect of beta blocker as an anxiety relief means before exam, but our evaluation of anxiety and problem solving are to some extant subjective .so more study in larger population should be conducted for proving that it can be beneficial for this purpose.

Histological features of protective effects of the coprinus comatus mushroom in carbon-tetrachloride induced hepatotoxicity

ESC-ID: 1333
Authors: Hinic N, Capo S, Prosenica T, Lalosevic D
Country: Serbia
University: University of Novi Sad, Department: Faculty of Medicine

Introduction: There are references pointing out that Coprinus comatus mushroom shows certain antioxidant effects. There is an increasing number of studies claiming certain hepatoprotective potential of numerous substances, yet to be proven as a useful supplement in the therapy of different diseases. Goal: Researching histological features of the protective effect of C. comatus mushroom in CCl4-induced acute toxic hepatitis.
Material and Methods: Experimental animals were randomly divided into four groups, each consisting of six rats: two experimental groups (who were given mushroom only and mushroom with CCl4) and two control groups (the negative one - without any treatment and the positive one - treated with CCl4 only). The experimental groups were being given water suspension of C. comatus powder during seven days. Following the application of CCl4 all animals were sacrificed and their liver slots were taken out and refined using standard histological techniques.
Results: CCl4 without the mushroom given in advance leaded to lymphocyte infiltration of the enlarged sinusoid capillaries with the occurrence of the microvesicular cytoplasmic collections in the hepatocytes due to the fatty degeneration of the liver and acute toxic hepatitis. CCl4 applied with the mushroom induced occurrence of clear microvesicular cytoplasmic accumulations of the fatty granules inside the hepatocytes, yet showing no signs of lymphocyte infiltration nor the acute toxic hepatitis.
Conclusion: Seven-day-application of the C. comatus mushroom had a protective effect on the liver, leading to only reversible process (steatosis), contrary to the group treated with CCl4 only, where irreversible acute toxic hepatitis signs has developed.

Baroreflex stress response in borderline hypertensive rats

ESC-ID: 1355
Authors: Radakovic D
Country: Serbia
University: University of Belgrade , Department: School of Medicine

Introduction: Stress is a major risk factor in the development of neurogenic essential hypertension. The baroreflex is the main regulatory mechanism in the regulation of BP. The disfunctioning of the baroreflex was found to be associate with poor outcome of hypertension. However, the effect of stress on the functioning of the baroreflex in the development of hypertension has not been elucidated. A quantitative description of baroreflex gain, BRS, may provide a useful synthetic index of neural regulation at the SA node. This information has clinical and prognostic value in a variety of cardiovascular diseases, including myocardial infarction and heart failure.
Aim: To investigate effects of acute and chronic restraint stress on the functioning of the baroreflex in borderline hypertensive rats - BHR and compare to normotensive age mates.

Materal and methods: Experiments were done in adult male BHR and age matched Wistar normotensive rats (WR) weighing 250-300g. Radiotelemetric probes were implanted in abdominal aorta under combined anesthesia, along with gentamicin and folowed with metamizol injections for pain relief. Blood pressure (BP), heart rate (HR) were recorded under basal conditions and during exposure to acute and chronic restraint stress by placing rats in Plexiglas restrainer tube in the supine position. Systolic blood pressure (SBP), diastolic blood pressure (DBP) and heart period (PI), or inverse heart rate, were derived from the arterial BP as maximum, minimum and interbeat interval. Evalution of the baroreflex function was done by scanning SBP and PI time series of consecutive beats in which SBP and PI changed undirectionaly, using the sequence method. Main parameters calculated to describe the BRR activity were: the baroreflex sensitivity (BRS), BRR effectiveness index (BEI), BRR operating range and BRR set point.
Results: Under basal conditions, BP of BHR was high normal, the baroreflex was reset towards higher BP values and exhibited increased sensitivity, in respect to WR. During exposure to acute restraint stress, BP and HR of both strains increased. Only in WR the baroreflex sensitivity and the operating range were decreased. Exposure of rats to chronic restraint increased BP of BHR only, as well as the sensitivity of the baroreflex, in respect to normotensive rats.
Conclusion: Although BHR in pre-hypertensive stage have increased baroreflex sensitivity and normal BP, they cannot cope with stress efficiently: they exhibit greater increase of BP than normotensive rats, they fail to habituate and show impaired adaptation to stress. Future clinical research is needed to validate BRS as biomarker of stress in humans, so that strategies can be developed to prevent effects of stress on the development and progression of hypertension.

Session: Physiology

The role of polyethylene glycol in sciatic nerve recovery after acute crush injury

ESC-ID: 603
Authors: Raducan A, Mirica N, Duicu O, Ordodi V, Fira-Mladinescu O, Cristescu A, Muntean D
Country: Romania
University: "Victor Babes" University of Medicine and Pharmacy Timisoara , Department: Pathophysiology

Rodent models of sciatic nerve injury are widely used in nerve regeneration studies as well as in the ones investigating the effects of neuroprotective compounds. Several lines of evidence indicate that the water-soluble polymer polyethylene glycol (PEG) has the ability to fuse cell membranes and thereby the potential to repair injured plasma membranes. The aim of the present study was to assess the role of in vitro application of PEG on the functional recovery of isolated sciatic nerves after severe crush injury. Twelve adult Sprague-Dawley rats were randomized in two experimental groups: Control group (n=6) and PEG Ca group (n=6). After sciatic nerve preparation and one hour equilibration in oxygenated saline solution with calcium, isolated nerve samples were placed in a double sucrose gap chamber. Compound action potential (CAP) of isolated sciatic nerve was measured before, throughout and 1 hour after injury. All nerves were injured in a calcium free oxygenated saline solution until the disappearance of CAP using a standardized compression system. Immediately after injury, a PEG solution was applied for 2 min 30sec at the injury site and then washed out only in the PEG Ca group. Functional recovery of the crushed nerves was assessed for one hour after injury in oxygenated saline solution with calcium. We monitored the reappearance and magnitude of the CAP amplitude. At one hour postinjury mean CAP amplitude in the PEG treated group was 3,060 mV compared to 1,225 mV in the control group. Our results show a significant better functional recovery in the PEG Ca group compared to the control group (6,573% vs. 2,443%, p = 0,0005).
In conclusion, our preliminary data strongly suggest that polyethylene glycol has the ability to enhance the recovery of sciatic nerve after acute crush injury.

Endothelial Connexin 40 expression requires PI3 kinase activity and is specifically enhanced by shear stress

ESC-ID: 674
Authors: Vorderwuelbecke BJ, Maroski J, Fiedorowicz K, Da Silva-Azevedo L, Pries AR, Zakrzewicz A
Country: Germany
University: Charité Universitätsmedizin Berlin , Department: Department of Physiology, CBF

Since endothelial Connexin 40 is known to be relevant for maintaining a non-activated endothelium and to conduct vessel dilations, both of which are influenced by blood flow, this study was done to characterize the effects of shear stress on endothelial expression of Connexin 40 and a role of PI3 kinase therein. Human umbilical vein endothelial cells were incubated either with or without enzyme inhibitors and either exposed to defined flow conditions in a cone and plate system or kept under static control conditions. Subsequently, cells were analysed for Connexin 40 expression using real time RT-PCR and immunoblotting. Basal expression of Connexin 40 was greatly reduced by inhibiting PI3 kinase or Akt. Long term (24 hours) induction of Connexin 40 protein was caused by two repetitive short-term (4 hours and 16 hours) mRNA peaks. With endothelial NO production being inhibited, shear stress elicited mRNA induction was prolonged. Effects of shear stress were most pronounced at an intensity of about 6 dyn / cm^2. Therefore, moderate shear stress represents an optimum for stably enhanced Connexin 40 expression. Subsequent to flow start, repetitive short term induction of mRNA and durable enhancement of protein are typical for biological adjustment processes. PI3 kinase / Akt activity is indispensable for basal Connexin 40 expression but is not solely responsible for its induction by shear stress.

Physiopathology of infantile pulmonary arterial hypertension induced by monocrotaline

ESC-ID: 725
Authors: Ferreira-Pinto M, Dias-Neto M, Neves AL, Pinho S, Goncalves N, Eloy C, Lopes JM, Goncalves D, Henriques-Coelho T, Leite-Moreira AF
Country: Portugal
University: Faculdade de Medicina da Universidade do Porto , Department: Physiology Department

Introduction: Pediatric pulmonary arterial hypertension (PH) presents certain specific features, however there is a lack of experimental models to study the physiopathology of PH in this specific age group.
Aim: To characterize hemodynamic, morphometric and histological progression as well as expression of neurohumoral factors and regulators of cardiac transcription in an infantile model of PH induced by monocrotaline (MCT).
Methods: Eight-days-old Wistar rats were randomly injected with MCT (30mg/Kg, sc, n=95) or equal volume of saline solution (n=92). Different time points after injection were defined for analysis. Hearts and lungs were collected for morphometric characterization and stained with picrosirius red for assessment of the RV and LV collagen type I and type III ratio, RV collagen volume fraction (days 1, 3, 7, 14 and 21) and pulmonary vessels wall thickness (days 7, 14 and 21). mRNA quantification was undertaken for BNP, ET-1, HOP and Islet1 (days 1, 7 and 21). Animals were instrumented for biventricular hemodynamic recording on days 7, 14 and 21 after treatment.
Results: Animals treated with MCT at the 8th day of life presented RV hypertrophy since day 7 after MCT injection. There were no differences on the RV collagen volume fraction or collagen type I and type III ratio. Pulmonary vascular remodeling and PH were present on day 21, which were accompanied by an increased expression of BNP, ET-1, HOP and Islet1.
Conclusion: The model of MCT induced pediatric PH can be useful for physiopathological studies and to test new therapeutic targets in this age group.

Acute haemodynamic effects of tezosentan in rats with monocrotaline-induced pulmonary hypertension

ESC-ID: 871
Authors: Figueiredo Pinto D, Silva D, Fontoura D, Pinto J, Vasques-Nóvoa F, Lourenco AP, Leite-Moreira AF
Country: Portugal
University: University of Porto, Department: Physiology

Introduction: Tezosentan, a short-acting intravenous (iv) dual endothelin-1 (ET-1) receptor blocker [1], may be useful for acute haemodynamic control in patients with chronic pulmonary hypertension (PH). Our goal was to evaluate the haemodynamic effects of tezosentan in monocrotaline (MCT)-induced chronic PH.
Methods: Wistar rats (180-200g) were randomly injected with either 60mg.Kg-1 MCT or vehicle, subcutaneously. Thereafter a subgroup of MCT-injected rats was gavaged daily with 300mg.Kg-1 bosentan (M+B, n = 13) while another subgroup (M, n = 20) and control rats (C, n = 7) received vehicle. At the 28th day after injection, and 24 hours after interrupting bosentan, right (RV) and left ventricular (LV) pressures were continuously recorded after thoracotomy under anaesthesia with fentanil and sevoflurane, mechanical ventilation, and 0.6 mL.Kg-1.h-1 saline as fluid replacement. Tezosentan was administered in cumulative iv doses of 0.5, 1, 2, 5, 10, and 20mg.Kg-1, after stable effect of the previous dose. Statistical analysis was performed by two-way repeated measures ANOVA. Quantitative variables are presented as mean ± SEM.
Results: During follow-up, 63% and 46% of M and M+B rats died, respectively, and 1 rat from group M died during haemodynamic evaluation. Compared with C, RV systolic pressure (SP) and relaxation constant τ were increased in M and M+B, while LVSP was decreased in M. RVSP was dose-dependently reduced by tezosentan in M (from 58.8±1.0, at baseline, to 48.6±1.0 mmHg, with 20mg.Kg-1) and M+B (51.1 ± 1.1 to 40.0 ± 1.3 mmHg), with no change in LVSP or heart rate, while no changes were observed in C (32.7 ± 1.0 to 31.2 ± 1.0 mmHg).
Discussion: Tezosentan acutely reduces RVSP in chronic experimental PH. This effect is preserved despite previous chronic ET-1 receptor blocker therapy. Tezosentan may prove to be useful for haemodynamic handling of PH patients during cardiac surgery or in critical care.

Cardioprotective effects of magnesium orotate on respiration of rat heart mitochondria

ESC-ID: 901
Authors: Duicu O, Mirica N, Raducan A, Sturza A, Lazarescu A, Fira-Mladinescu O, Muntean D
Country: Romania
University: University of Medicine and Pharmacy "Victor Babes" Timisoara , Department: Pathophysiology

Orotic acid and its salt, magnesium orotate (Mg-O) has been shown to exert protective effects on cardiovascular system in both experimental and clinical studies, but the underlying mechanisms are not entirely elucidated. The present study was aimed at characterizing the effects of Mg-O on oxidative phosphorylation in rat heart mitochondria in situ in normal and pathological conditions. To this aim in a first set of experiments we investigated the effects of Mg-O on oxidative phosphorylation of permeabilized muscle fibers isolated from normal rat hearts. Rat hearts (n = 7) were rapidly excised and bundles of ventricular cardiac fibers were prepared and transferred to cooled buffer A (composition in mM: 20 imidazole, 20 taurine, 0.5 dithiothreitol, 7.1 MgCl2, 50 2-[N-Morpholino]ethanesulfonic acid (MES), 5 ATP, 15 phosphocreatine, 2.6 CaK2EGTA and 7.4 K2EGTA supplemented with 100 ml saponin and 3 mg/ml collagenase and incubated for 30 min). The bundles were subsequently washed for 10 min in buffer B, (composition in mM: 20 imidazole, 20 taurine, 0.5 dithiothreitol, 1.6 MgCl2, 100 MES, 3 KH2PO4, 3 CaK2EGTA and 7.1 K2EGTA). All procedures were carried out under intensive shaking (120 times/min). Basal (state 2) and ADP-stimulated (state 3) respiration rates of permeabilized fibers (Clark-type oxygen electrode) were further determined at 37(o)C in buffer B supplemented with complex I substrates (glutamate/malate, 10mM/5mM). Our results showed that addition of Mg-O (1μM) slightly increased State 2 respiration rate of

skinned cardiac fibers, but significantly decreased State 3 respiration rate (35.28 ± 5.43 nmols O2/ml/min in Mg-O treated fibers vs. 44,17 ± 8.22 nmols O2/ml/min in non-treated fibers, $p < 0.05$). The respiratory control index (RCI, calculated as the ratio between States 3 and 2 respiratory rates) was significantly decreased in experiments supplemented with Mg-O (2.90 ± 0.33 vs. 3.97 ± 0.78, $p < 0.05$). In a second set of experiments, Langendorff perfused rat hearts (n = 5) were subjected to 30 min global ischemia and 15 min reperfusion in the presence or absence of 1 mM Mg-O, given throughout the reperfusion. Heart mitochondria were isolated by means of differential centrifugation. Oxygen consumption was assessed at 37(o)C by polarographic oxymetry. With complex I-dependent substrates, no differences were found in respiratory rates between the treated vs. non-treated group. In contrast, in the presence of complex II-dependent respiration (succinate) respiratory rates significantly increased by 75% in State 2 and by 38% in State 3 ($p < 0.01$), changes responsible for a decrease in RCI by 21% ($p < 0.05$) vs. non-treated animals.
In conclusion, in the settings of global ischemia/reperfusion injury Mg-O elicited a substrate-dependent partial mitochondrial uncoupling, an effect that may be critical for cardioprotection. Our preliminary data also suggest that Mg-O-induced respiratory inhibition, as demonstrated in permeabilized cardiac fibers, could also play a role in cardioprotection in the settings of ischemia/reperfusion injury, an observation that should be confirmed by further experiments.
Acknowledgement: Research supported by the National Authority for Scientific Research grant 42-122/2008 and PhD Fellowship Project 1.5/88/S/ ID 63117

Alterations to feeding behaviour in offspring induced by maternal exposure to a high caloric diet throughout lactation

ESC-ID: 913
Authors: Wright TM, Voigt JP, Langley-Evans SC
Country: United Kingdom
University: University of Nottingham , Department: School of Veterinary Medicine and Science

Aim: Epidemiological evidence suggests an increasing prevalence of obesity and obesity related complications in the Western population. It has been suggested that maternal provision of unbalanced nutrients throughout early critical periods of development may predispose an individual to obesity and a range of metabolic complications associated with obesity in later life. Despite evidence for such a programming effect on several physiological systems, the possible behavioural consequences for ingestive behaviour are yet to be elucidated in detail.
To this end we exposed female rats to a high caloric cafeteria diet (CD) throughout the lactation period and used the behavioural satiety sequence (BSS) to study feeding behaviour in the offspring. The BSS is widely utilized in behavioural science to investigate the impact of pharmacological, genetic or physiological manipulations on satiety mechanisms in rodents.
Methods: Lactating Wistar rats were fed either a control chow or CD. The CD consisted of a range of food items consumed in western society and known to be high in fat and sugar (including cheese, pate, pork-pie, peanut, chocolate, crisps, shortbread and others). During the age between 13-15 weeks, the BSS was studied in the offspring under exposure to a test meal consisting of a highly palatable mash. The BSS integrates several behavioural parameters (feeding, grooming and resting) and analyses the predictable transition from feeding through to grooming to resting during such an exposure. All behaviours were recorded and subsequently scored in 5 minute time bins for a total 1-hour observation period. Frequency, duration and latencies of these behaviours were calculated and statistically analysed.
Results: Analysis of behaviour across the test period revealed a standard BSS pattern of behaviour in both male and female offspring from the control group. CD feeding during lactation had no impact on the amount of food consumed throughout the test period. However, offspring from CD rats showed greater frequency but not duration of eating bouts. This co-occurred with an increased latency to rest and reduced duration of resting. In male offspring from the CD group a standard BSS pattern of behaviour was observed with the exception of a delay in resting. Impairments to the BSS were most pronounced in female offspring from the CD group due to a high duration of feeding behaviour at the expense of resting and grooming throughout the 1-hr session.
Conclusion: The present findings suggest an impairment to the BSS in female CD offspring compared to offspring from the control rats. This raises the possibility that exposing female rats to CD throughout the lactation period could permanently disrupt feeding behaviour in the offspring. The data further suggests possible gender effects of the nutritional manipulation performed throughout lactation. Our results highlight the importance of feeding healthy and balanced diets during critical phases of development.

Liver oxidative stress as a possible mechanism of hormetic effect of moderate calorie restriction

ESC-ID: 983
Authors: Tomasevic T, Sljivancanin T, Andrejevic A, Bondzic K
Country: Serbia
University: University of Belgrade , Department: Department of Pathophysiology

Aim: The aim of the study was to investigate the effect of various degrees of calorie restriction and fasting on stress response in the organism and oxidative stress in rat liver and plasma.
Methods and Materials: Male Wistar rats (n=42) were divided into following groups: 1. control; 2. calorie-restricted groups that were allowed to ingest 80-90%, 60-70%, 40-50%, 20-30% of daily calorie needs (CR80-90, CR60-70, CR40-50 and CR20-30 groups respectively) for 5 weeks, and 3. fasting group. For analysis of oxidative stress parameters and plasma corticosteron concentration liver samples and blood from the right side of the heart were collected.
Results: A progressive increase in plasma corticosteron concentration was found in higher degrees of calorie restriction. Restriction to 40-50% of daily calorie needs or less induced a significant increase in liver malondialdehyde and nitrite/nitrate (NOx) level with concommitant

decrease in superoxide dismutase (SOD) activity, as well as, in activity of its izoenzymes in comparison with control group. Ingestion of 60-70% of daily calorie reqiurements led to a significant increase in liver MnSOD activity, glutathione (GSH) and NOx level when compared to control group. In fasting and CR20-30 group GSH level was significantly lower than in control group.
Conclusion: Severe chronic calorie restriction and fasting induce a decrease in antioxidative capacity of hepatocytes and increase in oxidative damage. Moderate caloric restriction leads to an increase in antioxidative capacity of hepatocytes due to increase in MnSOD activity and GSH level. Both mechanisms may be possibly involved in hormetic effect of moderate calorie restriction.

Amygdala directly controls information processing in the primary visual, auditory, and gustatory cortices: evidence from infraslow (<0.5 Hz) brain potential recordings.

ESC-ID: 1026
Authors: Varentsov VE, Filippov IV, Pugachev KS, Krebs AA
Country: Russia
University: Yaroslavl State Medical Academy , Department: Department of Physiology and Biophysics

Introduction and objective: It has been demonstrated involvement infraslow brain potentials (ISBP) in specific and non-specific mechanisms of sensory information processing in thalamic-cortical sites of visual, auditory and gustatory systems. Although it is known that emotional, motivational and behavioral contexts of sensory information processing are essential and these processes are controlled by amygdala, there are no data in the literature about the influences of amygdala on ISBP dynamics in the visual, auditory and gustatory cortices. The aim of this work was to study those changes of ISBP that arise in primary visual (V1), primary auditory (A1), and gustatory (GU) cortices after electrical stimulation of basomedial nucleus of amygdala (BMNA).
Methodology: Experiments were conducted on 10 adult albino rats electrodes that were implanted to the ipsilateral BMNA, V1, A1, and GU. Recordings were started after 14 days of implantation procedure and were performed in anesthetized by urethane rats. ISBP recordings of V1, A1, and GU were done before electrical stimulation of BMNA and after that. We used spectral analysis for evaluation of alterations of different frequency ranges of ISBP and one-way ANOVA statistical procedure for evaluation of pre- and post-stimulus changes. An alpha level $p<0.05$ was adopted for all significance tests. Post-mortem verifications of electrode tracks in aforementioned brain sites were also done after the end of experiments.
Results and conclusions: It was found that electrical stimulation of BMNA produced statistically significant changes of ISBP in the domain of seconds (0.1-0.5 Hz) in A1 and GU; spectral changes were also seen in V1 but they were not significant. We additionally revealed identical changes of multisecond activity (0.0167-0.06 Hz) in V1, A1, and GU after electrical stimulation of BMNA, these alterations were manifested as global significant decrease of powers of multisecond fluctuations. Based on obtained data, it is possible to conclude that amygdala is involved in the modulation of specific neural processing of sensory information in A1 and GU, as well as it participates in the regulation of non-specific states (global neuronal excitability transitions and fluctuations) of V1, A1, and GU via direct and controlled by amygdala modulation of ISBP in the domains of seconds and dozens of second of these cortical sensory areas of the brain. This exploration scientific-research study was performed in the context of realization of Federal Special-purpose Program „Scientific and scientific-pedagogical personnel of innovative Russia“ for 2009-2013 years.

Adiponectin (ADN) and adiponectin receptors (AdipoR1, AdipoR2) in the rat adrenal gland - description of the system and assessment of its physiological role

ESC-ID: 1049
Authors: Paschke L, Zemleduch T
Country: Poland
University: University of Medical Sciences, Poznan, Poland , Department: Department of Histology & Embriology

Aim: We tested the hypothesis that adiponectin (ADN) and adiponectin receptors (AdipoR1, AdipoR2) are expressed in the rat adrenal gland and that their pattern of expression may be subjected to ontogenetic and physiologic regulation. In addition, we examined whether ADN directly influences adrenal steroidogenesis and cell proliferation rate in vitro.
Methods and materials: By means of QPCR (SYBR Green based method) and Western blotting the presence of ADN and its receptors was studied in the rat adrenal gland zones and isolated adrenocortical cells. Studied genes expression was assessed in postnatally developing rats (days: 2, 28, 45, 60, and 90 of postnatal development) and in enucleation-induced adrenocortical regeneration (days: 3, 5, 8, 15 and 30 after surgery). Primary adrenocortical cell culture (PACC) and freshly isolated adrenocortical cells (FIAC) were employed to test ADN [recombinant globular domain of rat ADN (gADN)] influence on cell steroidogenesis (measured by RIA) and proliferation rate (measured by means of BrdU incorporation).
Results: AdipoR1 and AdipoR2 mRNA was present in all zones of intact adrenal gland as well as in isolated adrenocortical cells. ADN mRNA expression was limited to cells derived from the zona glomerulosa (fragments or freshly isolated cells) or cultured cells. As assessed by QPCR, the level of AdipoR1 expression in adrenals was an order of magnitude higher than that of ADN and AdipoR2. Western blot revealed protein expression of ADN and AdipoR1 but not that of AdipoR2 in the rat adrenal gland. During postnatal development adrenal ADN expression was the highest at postnatal day 2 and rapidly decreased with ageing, reaching steady level at day 60. In regenerating adrenals ADN mRNA levels increased 4-fold by the 5th day after enucleation, with normalization by the day 15th. Less changes were observed regarding AdipoR1 and AdipoR2 expression levels. One hour incubation with gADN of FIAC derived from either zona glomerulosa or fasciculata/reticularis resulted in no changes in cells aldosterone output, but decreased corticosterone output at the highest concentration tested - 10-8 M. In PACC, on the other hand, 24-hour incubation with gADN at 10-9 M significantly increased corticosterone production. As for cells

proliferation rate, gADN stimulated it at all concentrations, most significantly also at 10-9 M peptide concentration. Lastly, addition of gADN together with ACTH (10-7 M) did not result in any changes either in corticosterone output or proliferation rate when compared with group treated only with ACTH.
Conclusions: Adiponectin and its receptors are expressed in the rat adrenal gland and in isolated adrenocortical cells. ADN expression is limited to zona glomerulosa cells and is upregulated in states of active adrenocortical cells proliferation. AdipoR1 is likely to be the predominant ADN receptor in the rat adrenal gland. Globular domain of ADN enhanced adrenocortical cells proliferation and influenced their basal steroidogenesis. Overall, obtained results suggest adiponectin involvement in adrenal gland physiology.

Blood pressure and heart rate variability during selective nNOS inhibition in conscious rats

ESC-ID: 1194
Authors: Popov DM, Iliev B
Country: Bulgaria
University: Medical University Sofia , Department: Department of Physiology

Aim: The present study investigates the participation of nitric oxide, produced by neuronal nitric oxide synthase (nNOS), in the modulation of fast oscillations of arterial blood pressure and heart rate in conscious Wistar rats.
Materials and Methods: Experiments were performed on conscious Wistar rats (n = 10). The animals were housed in standard conditions: 22 0C, 12/12 h light/dark cycle, with free access to food and tap water. Under general anaesthesia (Nembutal, 35 mg/kg i.p.) one day before experiments catheters were inserted in femoral vein for selective nNOS inhibition by application of 7-Nitroindazole (7NI) in dose 2 mg/kg/h and in femoral artery for registration of arterial blood pressure. The arterial blood pressure wave was registered directly through arterial catheter by blood pressure transducer Gould Statham P23ID, connected to data acquisition system Biopac MP100WS during 40 min long control period and 20 min after the start 7NI application for 40 min. In arterial blood pressure wave the values from systolic (SAP), diastolic (DAP) and mean (MAP) arterial blood pressure as well as the interpulse interval (IPI), determined by time between two consecutive diastolic minimums from each heart beat, were detected by Acknowledge 3.8 software. The spectrograms for the investigated parameters were derived in graphical programming environment LabView 3.1.1, through Fast Fourier Transform (FFT) algorithm. The spectral power (P) in the low (LF), mid (MF) and high (HF) frequency band typical for rats (20-195; 195-605; 605-3000 mHz, respectively) were studied. In IPI spectrograms sympatho-vagal balance was determined by the relation of power of mid to high frequency band PMF/PHF.
Results: The selective nNOS inhibition led to a decrease of mainly sympathetically mediated mid frequency variations of the IPI from 1.39 ± 0.34 to 0.43 ± 0.03 ms2, $p<0.05$. The PHF did not change as a result of the nNOS inhibition. The ratio PMF/PHF decreased as a result of the nNOS inhibition from 0.73 ± 0.06 to 0.44 ± 0.03, $p<0.05$. In the SAP, DAP and MAP spectrograms application of 7NI did not change the PLF and the PMF. The spectral power in HF band in DAP and MAP spectrograms did not change during selective nNOS inhibition. Interestingly, PHF decreased during selective nNOS inhibition only in SAP spectrograms from 0.81 ± 0.03 to 0.55 ± 0.04, $p<0.05$.
Conclusion: Nitric oxide produced by nNOS participates in the regulation of sympatho-vagal balance by modulation of mainly sympathetically mediated mid frequency variations in IPI. The sympathetically mediated fast oscillations in SAP, DAP and MAP spectrograms did not change during nNOS inhibition. The nitric oxide produced by nNOS participates in the regulation of sympathetically mediated variations in IPI but not in arterial blood pressure.

Effects of juniperus communis aerosols on vasomotor responses in aortic rings from rat subjected to passive smoking

ESC-ID: 1198
Authors: Sturza A, Plesa C, Ordodi V, Noveanu L, Mirica N, Fira-Mladinescu O, Lupea AX, Muntean D
Country: Romania
University: "Victor Babes" University of Medicine and Pharmacy, Timisoara, Romania , Department: Pathophysiology Department, PhD Student

Smoking is a significant independent risk factor for cardiovascular disease and is a leading cause of structural and functional alterations in the cardiovascular system. A large body of experimental and clinical evidence support the hypothesis that cigarette smoke exposure increases oxidative stress as a potential mechanism for initiating cardiovascular dysfunction. The present study was purported to determine whether administration of Juniperus communis oil, a natural anti-oxidant, could reverse the vasomotor impairment associated with passive exposure to cigarette smoke. To this aim female Sprague-Dawley rats exposed to daily passive smoking for 6 weeks were randomized to receive (Treated group) or not (Control group) for the last 15 days of the exposure a daily administration (40 min/day) of Juniperus communis oil aerosols. Segments of thoracic aortas were harvested from animals and vascular rings (2-3 mm) were placed in two individual jacketed organ baths. After equilibration at 37°C under 1.75 cN passive tension the tissues were precontracted with 10-5 M phenylephrine (PE). Cumulative concentration-response curves (10-9 to 10-4 M) for: acetylcholine (ACh), and sodium-nitroprusside (SNP) were recorded in the presence or the absence of L-NAME (10-5 M). Our preliminary data showed that in controls passive chronic exposure to cigarette smoke determined a significant reduction of ACh endothelial-dependent relaxation without any modification of the SNP endothelial-independent relaxing response. Administration of juniper significantly reversed smoking-induced endothelial dysfunction in rat aortas (Maximal relaxation(%): CON = 31.33 ± 5.32, TREAT = 61.53 ± 8.35, $p = 0.035$).
Research suported by project POSDRU/1.5/88/S/ID 63117

Angiotensin 1-7 effects on miocardial contractility after hypoxia-reoxygenation.

ESC-ID: 1284
Authors: Mendonca L, Pintalhao M, Cerqueira R, Castro Chaves P, Leite Moreira A
Country: Portugal
University: Faculty of Medicine, University of Porto , Department: Physiology

Angiotensin 1-7 (Ang1-7) is a bioactive heptapeptide of the renin-angiotensin system (RAS) that has received an increasing attention for its ability to balance angiotensin II actions in the cardiovascular system, mainly through the binding to Mas receptor. Both angiotensin converting enzyme 2, the main enzyme responsible for Ang1-7 synthesis and Mas receptor are highly expressed in the heart, suggesting that this new renin-angiotensin system pathway may have a key role on cardiac pathophysiology. In the present study we aimed to assess Ang1-7 ability to modulate myocardial function in a hypoxia-reoxygenation model. Ang1-7 effects were evaluated using right ventricular rabbit papillary muscle preparations, immersed in a modified Krebs-Ringer solution and electrically stimulated (1.8mM Ca^2+; 35 ºC; 0.6Hz). After an initial stabilization procedure, we added Ang1-7 (ang1-7 group, 10^-5M, n=6) or the same volume of vehicle (control group, H_2O, n=6) to the superfusing solution, followed by 30 min of hypoxia (replacement of the initial 95%O_2 + 5%CO_2 gas mixture with a 95%N2 + 5%CO_2 one), after which there was a 40 min reoxygenation period (95%O_2 + 5%CO_2). The contractile response to increasing concentrations of isoproterenol (10^-8 10^-6M) was then evaluated. The same protocol was also performed in the presence of the Mas receptor antagonist A-779 (10^-5M) followed by the addition of Ang1-7 (10^-5M), an hypoxia-reoxigenation period and increasing concentrations of isoproterenol (A-779+ang1-7 n=6). The results are presented as mean±standard error ($p<0.05$). We observed no statistically significant differences in contractility after hypoxia-reoxygenation between the several groups. In the first protocol, pre-treatment with Ang1-7 improved the inotropic and lusitropic responses to beta-adrenergic stimulation. For the higher isoproterenol concentration, we observed a greater increase of the contractile parameter active tension in Ang1-7 group when compared to the control group (434,4%±69,0% vs 238,6%±26,9%). Additionally, and also for the higher isoproterenol concentration, the Ang1-7 group showed an accelerated relaxation as observed by an increase in the dP/dtmin when compared to the control group (552,9%±74,9% vs 333,2%±40,8%). The observed increase in contractility after isoproterenol addition was significantly attenuated in the presence of the Mas receptor antagonist A-779, corresponding, at the higher tested concentration of isoproterenol, to an increase in AT of 227,9±49,6%. In the presence of A-779, it was also observed a significant decrease in the dP/dtmin comparing to the Ang1-7 group, 293,9±68,4% vs 552,9±74,9%, respectively.

In conclusion, in this animal species, Ang1-7 improved the contractile response to beta-adrenergic stimulation after hypoxia-reoxygenation which seems to be mediated through Mas receptor stimulation. These results reinforce the role of this new mediator in modulating cardiac function, manly through its ability to improve myocardial inotropic reserve. Therefore, these observations support Ang1-7 potential beneficial effects in the contractile dysfunction associated with ischemia.

Session: Psychiatry

Effects of immobilization stress and sertindole on the transcription of Alzheimer's disease associated genes in rat brain

ESC-ID: 564
Authors: Kalman J Jr, Kalman S, Santha P, Domokos A, Fazekas O, Szucs Sz, Pakaski M, Szabo Gy, Janka Z, Kalman J
Country: Hungary
University: University of Szeged , Department: Psychiatry

Aims: According to the dementia treatment guidelines the behavioural and psychological symptoms of Alzheimer's disease (AD) could be treated with certain antipsychotics but until now no data was available regarding the effects of these drugs on the expression of AD related genes. Therefore the aim of our study was to examine the effects of sertindole, a relatively new second generation antipsychotic drug (currently not used in the standard management of AD), on the transcription of some AD associated genes, such as amyloid precursor protein (APP), mitogen activated protein kinase-1 (MAPK-1), β-actin in the brain of rats exposed to chronic immobilization stress (CIS). In rat brain CIS causes severe neuronal damage and loss in the AD associated areas (prefrontal cortex, amygdala and hippocampus). The pathomechanism of CIS induced neuronal loss is multifactorial: it may be associated with the reduction of the neuroprotective growth factor (BDNF) synthesis, and with the distortion in the neuronal metabolism due to elevated glucocorticoid levels. According to the stress hypothesis of depression and the association between AD and depression these factors could be pathogenic in both disorders.

Methods and Materials: Male Wistar rats (200-250g) were exposed to CIS for 6 hours/day during our 3 week experimental period. The animals were divided into 4 groups: control (n=20), stress (n=16), sertindole (n=5) and sertindole + stress (n=4). Following transcardial brain perfusion, the brains of the animals were removed and the relative levels of APP, MAPK-1 and β-actin mRNA were measured in rat cortex and hippocampus with real-time PCR. Data were analysed with one-way ANOVA.

Results: CIS induced significant β-actin mRNA overexpression in rat hippocampus ($p<0.05$). This elevation was suppressed by the concomitant administration of sertindole ($p<0.02$). Concerning the other examined genes (APP and MAPK-1) no significant alterations were found in any of the experimental groups.

Conclusions: These results suggest that chronic stress increases the expression of certain cytoskeletal genes and chronic sertindole administration might have beneficial effect on this process in rat brain. Therefore in certain conditions such as CIS, sertindole might have a neuroprotective or even a pathogenesis modifying effect in AD.

This study was financed by the grants of SROP-4.2.2.-08/1-2008-0002

The role of DCTN1 (Dynactin) in the pathogenesis of schizophrenia

ESC-ID: 655
Authors: Grabowski, K, Puls I
Country: Germany
University: Charite Universitätsmedizin Berlin , Department: Psychiatry and Psychotherapy

Schizophrenia is a neuropsychiatric disorder with a multifactorial etiology. MRI-studies and anatomical research described macroscopic changes and variation of cytoarchitecture in brains of schizophrenic patients in comparison to unaffected individuals. Studies reported different volume of ventricles and size of grey and white matter. Malfunction in neuronal migration and synaptogenesis could explain these changes in brain architecture. The schizophrenia susceptibility genes DISC-1, NRG1 or DTNBP1 play an important role in neuromigration and synaptogenesis. A further strong candidate gene for schizophrenia could be dynactin. This protein complex is involved in axonal transport, neuronal migration and chromosome alignment. Its direct binding to dynein enables the function of that motor protein and the axonal transport. Several studies found an association not only to motor neuron diseases like ALS but also to the Perry-Syndrome, another neurodegenerative disease. Th present study examined the association between DCTN1 that encodes the largest subunit of dynactin, and schizophrenia as well as the impact of DCTN1 on volumetric measurements of cortical and subcortical regions in schizophrenic patients and healthy controls. We collected blood samples from 65 patients and 70 healthy controls. Each subject was genotyped for seven SNPs (single nucleotide polymorphism)s within the DCTN1 gene which were chosen because of intragenic position and its heterozygosity index. Genotyping was performed by PCR amplification with optimised conditions for each SNP and enzymatic restriction. Furthermore, we constructed haplotypes, a set of statistically associated alleles. We analysed the association between schizophrenia with each SNP as well as with the 8 most frequent haplotypes. Also, we checked the diagnosis-volume- and genotype-volume-correlation. Volumetric data from MRI examinations of cortical, subcortical and limbic structures were available for 110 subjects (60 controls, 50 schizophrenic patients). These brain areas were already described as significant for the diagnosis of schizophrenia in prior studies. Utilised statistical methods were mainly based on ANOVA and student's t-test. We could not find an association between DCTN1 and schizophrenia. Neither single SNPs nor haplotypes showed an influence on the diagnosis. Additionally there was no association between schizophrenia and volumetric data. However, there was a direct correlation between genetic variations of 4 SNPs and volumetric data of the middle frontal gyrus, pallidum, putamen and thalamus. Additionally, the most frequent haplotype demonstrated an impact on volume in several regions. Subjects without that haplotype showed significantly higher volumes than heterozygous individuals or homozygous carrierers of the corresponding haplotype. To our knowledge this is the first study about an association between schizophrenia and the microtubule binding protein complex dynactin, amongst others encoded by DCTN1. We could not find a direct link between DCTN1 and schizophrenia. However, our findings suggest a potential role for the genetic variants of the dynactin gene in cellular organisation and brain development.

The study of the rate of depression epidemic among medical students of Tabriz state university and Islamic Azad university of Tabriz

ESC-ID: 693
Authors: Nobahari S , Nobahari SH
Country: Iran
University: Scientific association, faculty of medicine, Islamic Azad University - Tabriz branch , Department: Scientific association, faculty of medicine,

The study of the rate of depression epidemic among medical students of Tabriz state university and Islamic Azad university of Tabriz Nobahari Sina. During the vicissitudes of his life,man is taking different states to himself encountering difficulties and easinesses. One of these state is depression which is conceived of (from the psychologists perspective) as „the psychological cold" indicating that every individual will experience this illness during of his life's periods. A group of individuals who are more likely to appear this illness are medical students for various causes. Such as long lasting period of education, difficult courses, etc. Our subject population which was randomly chosen were from medical freshman of sate university of Tabriz and Islamic Azad university in 1386 from which just 99(students) out of 120 students of Tabriz state university cooperated in this study and 48 students out of 65 Azad university students had a through collaboration. The applied measurement tool in this survey was Beck's standard depression test to which four more demographic questions had been added as well.(age-gender: male or female-place of residence: dormitory or home) The valuation and marking of the test was adapted base on an Iranian norm. And the data were classified into four groups (normal-mild-moderate-severe). The method of this project was descriptive analytical and the analysis of these statistics were accomplished through the spss program. The average age was found 20.0476 and the average depression grade was obtained 10.3878 among total population. The lowest grade was 0 and the highest was 57.the acquired results of the comparison between two groups in ratio to the total statistics of the same group are as fallows: Islamic Azad university of Tabriz medical faculty: Normal: 31.3% - Mild: 14.6% - moderate: 33.3% - severe: 20.8% The stat university of Tabriz medical faculty: Normal: 19.2% - Mild: 15.2% - moderate: 36.4% - severe: 29.3% What is construed from the results is that nearly 50-60 percent of the individuals of the total statistics suffer a moderate or/and severe depression rate to which we suggest relevant planning to decrease and prevent this complication.

High prevalence of depression and anxiety symptoms among hospitalized geriatric medical inpatients of Nepal: a study from a tertiary level hospital of Nepal

ESC-ID: 717
Authors: Neupane M, Giri S, Timalsina S, Koirala S, Sharma S, Yadav V, Kumar A
Country: Nepal
University: Institute of Medicine , Department: MBBS

Background: Depression and Anxiety symptoms are widely prevalent in the geriatric population and the prevalence is higher in those suffering from any kind of medical illness. Although the prevalence of anxiety and depression among elderly medical patients have been evaluated in a few studies from developed countries in Europe and the Americas, data from a developing country like Nepal is lacking.
Aim: To estimate the burden of the psychiatric morbidities; depression and anxiety in Nepalese setting among hospitalized geriatric medical inpatients.
Materials and methods: A cross sectional analytical study where 42 geriatric inpatients admitted to the Department of Internal Medicine of Tribhuvan University Teaching Hospital during the period from April 1st to May 20th 2009 were studied for the prevalence of depressive and anxiety symptoms using the Beck Depression Inventory and Beck Anxiety Inventory respectively. 23 healthy geriatric community dwellers from a senior citizen centre in Kathmandu were taken as the control group. Data was analyzed using SPSS 14.0.
Results: Significant anxiety symptoms were present in 76.1% (N=32) of the hospitalized geriatric patients and significant depressive symptoms in 57.1% (n=24) as compared to 21.7% (n=5) and 17.3% (n=4) of healthy community dwellers respectively. Between the hospitalized geriatric medical inpatients and elderly healthy community dwellers, there was statistically significant differences in anxiety scores ($F=26.06$, $p<0.01$) and depression scores ($F=22.97$, $p<0.01$) as measured by one way analysis of variance (ANOVA).
Conclusion: There is a very high prevalence of depressive and anxiety symptoms among hospitalized geriatric medical inpatients as compared to healthy community dwellers in Nepal. Presence of these psychiatric morbidities can further exacerbate the physical illness slowing down recovery and adversely affecting a wide range of outcomes. Such a high amount of psychiatric morbidity in this population needs to be addressed by appropriate mental health interventions which is lacking.

Could movement disorder in opioid addicts be treated with methadone maintenance treatment?

ESC-ID: 967
Authors: Ekhtiari H, Safaei H, Parhizgar S.E, Sikaroodi H, Mokri A
Country: Iran
University: Tehran University of Medical Sciences , Department: Iranian National Centre for Addiction Studies

Background ans Aims: Opioid use can cause many side effects and problems such as disorientation to time and locality, various cognitive impairment, physiologic and psychological dependence and motor side effects. Clinical experience shows that there is some decline in motor functions in opioid addiction; hence, there is no study in opioid addiction side effects on motor functions on Iranian patients. Finger Tapping Task (FTT) is one of tests for assessing motor speed and control. In this study we try to compare FTT scores in a group of opioid addicts with normal subjects, and try to evaluate the treatment effect of Methadone Maintenance Therapy (MMT) on this group.
Material and Methods: In this study 156 male opioid users and 65 male controls enrolled according to inclusion and exclusion criteria's. In phase one, this case and control groups compared to each others based on their FTT scores. In Phase two the opioid user group, was assessed in month three and month six of MMT, and the FTT scores assessed again. Data gathered by FTT hardware and software designed by Neurocognitive lab of INCAS (Iranian National Center for Addiction Studies), and analyzed by SPSS software.
Results: Age mean in addict group was 31.26 ± 9.24, and in control group was 27.66 ± 8.13. Education in case group was 10.47 ± 3.09 and in control was 12.42 ± 4.08. Analysis of FTT scores between case and control group shows that there is significant difference between groups. The addict group has the lower score on FTT (p value $= 0.000$). Analysis of FTT scores on months 3 and 6 of MMT in addict group shows that there are no significant differences in scores of FTT in these months and pre-treatment score. We can't find any significant correlation between addiction characteristics (such as drug type, time of addiction, and route of use) and FTT score.
Conclusions: The findings of this study clearly show the decline in motor functions of opioid users in contrast to normal persons by using FTT. In other words opioid use can cause slowness in motor functions, which could not be resolved by Methadone Maintenance Therapy (MMT) yet after six months. Evaluation of other addiction treatment protocols, such as buprenorphin , for comparison in their side effects or benefits on motor functions, is a good suggestion for future studies.

Antidepressant prescribing practice at university clinic

ESC-ID: 1037
Authors: Zarkovic B, Zaric N, Stojiljkovic D, Pavlovic Z, Maric NP
Country: Serbia
University: Medical school University Belgrade , Department: Clinic for Psychiatry CSS

Aim: To explore antidepressant prescriptions and factors (patient-related, physician-related and drug-related) associated with choice of antidepressant.
Method: For study procedures we used a retrospective chart review. All patients who had antidepressant prescribed at discharge from Clinic for Psychiatry CCS, Belgrade, during 2009 were included ($n = 296$). The evaluation was focused on patient-related factors (socio-demographic and illness-related), psychiatrist-related factors (sex and duration of working experience) and drug-related factors (type of antidepressant, dose, polypharmacy and reimbursement by health insurance). Antidepressants were

prescribed for unipolar depression (F32-34, ICD X) without comorbidity (46.2%) or with comorbidity (24.7%), mostly as a monotherapy (91% had one antidepressant), to the patients who were 65% female, age 50.1±8.9 most of them having 12 years of education (52.6%), being married (69.3%) and employed (55.9%). The majority of patients had a history of two hospitalizations (Med 2; Q1-Q3 1-4) during nine years (Med 9; Q1-Q32-15) after the first episode of depression. Ninety (19%) of them were suicidal during the last hospitalization. The most prescribed single antidepressant was sertraline (20.4%), followed by fluoxetine (13.3%) and maprotiline (11.7%). The frequency of single antidepressant prescription was positively correlated with rate of reimbursement (p<.01). The most prescribed antidepressant class were SSRIs (47.8%), followed by TCAs (25.3%) and new drugs (15.1%; venlafaxine, tianeptine, mirtazapine, bupropion, trazodone). Most of the drugs were prescribed in doses which are on lower end of the range recommended by guidelines. Regarding severity of the actual depressive episode, TCA were prescribed for severe depression with psychotic features, while SSRI were choice for moderate symptom severity episode (p=.01). Psychiatrists with longer working age (20-30 years) had significantly less new antidepressants prescribed (p=.01).
Conclusions: Economic issues in Serbia as a developing country influence the choice of antidepressants, as well as a psychiatrist's working age and severity of depression. However, SSRIs are predominant choice, as in most of the developed countries nowadays.

9-hydroxy-risperidon (9OHRIS) prevents stress-induced ß-actin overex<x>pression in rat hippocampus

ESC-ID: 1132
Authors: Kálmán S, Kálmán Jr. J, Pákáski M, Szûcs S, Fazekas Ö, Domokos A, Szabó G, Janka Z, Kálmán J
Country: Hungary
University: University of Szeged, Department: Psychiatry

Background: Alzheimer's Disease (AD) is the most frequent form of neurodegenerative dementia. The exact pathomechanism of AD is not known, but stress could have a role in the pathogenesis. Beside other factors the following three genes and proteins could contribute to the development of AD: (1) amyloid precursor protein (APP) is cleaved abnormally to ß-amyloid fragments, which aggregate into senile plaques in the AD brain. (2) The mitogen activated protein kinase-1 (MAPK1) plays role in the hyperphosphorylation of tau protein leading to the disintegration of the cytoskeleton and the formation of toxic neurofibrillary tangles. (3) The ß-actin is abnormally aggregated in Hirano bodies in several types of neurodegenerative disorders including AD. AIMS: The major aim of our present research was to examine the effect of stress on the expression of APP, MAPK1 and ß-actin in the rat hippocampus and cortex. We also examined the effect of the second generation antipsychotic drug 9-hydroxy-risperidon (9OHRIS) on the transcription of these genes.
Methods: Adult (300-350 g), male Wistar rats were exposed to chronic immobilization stress (CIS) and concomitant administration of 9OHRIS for 3 weeks. Four groups were formed depending on the treatment: (1) control, (2) CIS, (3) 9OHRIS, (4) CIS and parallel 9OHRIS treatment. The expression of APP, MAPK1, ß-actin genes was measured in the brain with real-time PCR technique after the 3 weeks treatment.
Results: The ß-actin gene was overexpressed due to the CIS in the hippocampus. On the other hand, a repression was observed after the 9OHRIS treatment. There were no changes in the cortical or hippocampal expression of APP and MAPK1 genes after the CIS or 9OHRIS treatments.
Discussion: ß-actin plays an important role in the synaptogenesis, neuroplasticity and in the development of different dementias such as AD. Our findings indicate that the second generation antipsychotic drug, 9OHRIS may have a protective effect on stress induced conditions like neurodegenerative disorders by decreasing the CIS induced ß-actin expression. This study was financed by the grants of SROP-4.2.2.-08/1-2008-0002

Cognitive evoked potentials p300 and functional asymmetry of brain

ESC-ID: 1169
Authors: Ivetic O
Country: Serbia
University: Medical Faculty , Department: Department of Psychiatry and Medical Psycholo

Introduction: In neurophysiology the concept of lateralization of brain hemisphere functions is related to the existence of differences in their functioning. The aim of the research was to determine for the right-handed females whether there is a connection between the degree of lateralization of brain hemispheres and the variables of cognitive potential P300 (latency and amplitude).
Methodology: In 30 study participated 70 girls, age 20-23 years. In the first group where 29 strong expressed right-hand girls, in the second group 30 moderately expressed right hand girls, and in the third group 11 right-hand learned girls. The reserch workers were using the „oddball" paradigm with two tones: standard (90dB 1000Hz) and „expected-target" (90dB 2000Hz) for the registration of the P300 potential. The tones were binauraly presented in irregular intervals and irregular order. 260 tones were used. The subjects got instructions to press a button, as fast as they can, whenever they hear the „expected" tone and to ignore the „standard" tones. P300 evoked potentials were registered above Fz and Cz area.
Results: showed the cognitive P300 wave latency to be significantly shorter when responding with dominant hand in first group. P300 wave latency in girls from second group was a shorter with engagement of the right hand. Cognitive P300 potentials above the FZ and Cz regions have a significantly shorter latency compared to the average latency of potentials registered in girls from second group. Cognitive P300 amplitude waves are higher above central regions independently of the hand used. It is possible to conclude that the analysis of cognitive evoked potentials P300 characteristic may contribute to the study of functional asymmetry of cerebral hemispheres.

Who did wrong? The error processing system and alcohol use

ESC-ID: 1200
Authors: Pereverzeva EV, Welcome MO, Pereverzev VA
Country: Belarus
University: Belarusian State Medical University , Department: Normal Physiology

The error processing system is the system located in the substantia nigra of the midbrain, basal ganglia and cortex of the forebrain, and plays a leading role in error commission. Error commission is related to the functions of the monitoring response system in the mediofrontal brain and is dependent on the degree of phasic dopamine activity on the anterior cingulate cortex. The main components of the error processing system are the dopaminergic system and anterior cingulate cortex. Although, recent data show that alcohol disrupts the error processing system, the ways in which alcohol affects this system are poorly understood. It has been suggested that the effect of alcohol intoxication on error monitoring response system might be directly, or indirectly by affecting the stimulus processing system upon which the monitoring response system depends. Current knowledge on brain metabolism suggests that metabolic competence and the brain glucose level might affect the error processing system indirectly by affecting dopamine level. Importantly, the mesencephalic dopamine system is strongly implicated in alcohol self-administration. Low doses of alcohol activate dopaminergic neurons in the ventral tegmental area and alcohol self-administration is associated with increased dopamine levels in the nucleus accumbens. Furthermore, the reinforcing properties of alcohol appear to depend on dopamine D1 and D2 receptors. An extensive review of current literatures from the databases of Medline, DOAJ, Embase and ProQuest suggests that glucose might play significant role in error processing. Dopamine as one of the major components of the error processing system is significantly regulated by blood glucose level. Infact, significant increase in error commission among alcohol users is associated with a fall in blood glucose level ($r = 0.8$; $p<0.001$). To explain the results of our findings, here we propose a hypothesis of "alcohol-related glucose-dependent functional system of error processing", in which the error processing capacity of the anterior cingulate depends on the blood-brain glucose proportionality level. The major concepts of this model are to unravel basic knowledge about the effect of drugs and other psychotic substances on the nervous system functions.

Suicide attempts and life events scale

ESC-ID: 1326
Authors: Ilic J
Country: Serbia
University: Novi Sad , Department: Medicine

Introduction: The analysis of suicide attempt was carried out through socio-demographic characteristics of patients, attendant negative life events, as well as family history. Goal: The goal was to examine the percentage of employment amongst patients, frequency of relapse, presence of positive family history, as well as the percentage of patients who are living alone and the frequency of certain negative life events.
Material and methods: As material we used history of illness from 75 patients who were hospitalized in the Institute of psychiatry in Novi Sad during the period from 31. October 2004. - 31. October 2008. Their analysis was carried out, and was followed by statistical processing of data.
Results: From the aggregate number of patients 76, 36 percent are unemployed. Relapse occurs in 37, 33 % of cases analyzed. The positive family history in relation to any psychiatric ailment and suicide attempt occurs in 34, 67%, and that same percentage of patients live alone. Most frequently before the suicide attempt there is a conflict situation in the family in 45, 33%, in 13, 37% it is bad financial situation, in 10,67% the conflict is joined with an organic ailment, and in 9,33% of cases it is the break up of an emotional affair.
Conclusion: The suicide attempt is more frequent amongst those unemployed. The relapse occurs in more than a third of cases examined. There are a lot of patients who live alone, as well as those with positive family history. Before suicide attempt there is usually a conflicting situation in the family, bad financial situation, conflict joined with a disease and a break up of an emotional affair.

Study of emotional intelligence, quality of life and body mass index in adolescents

ESC-ID: 1382
Authors: Gudlavalleti ASV, Sameer M, RM Pandey
Country: India
University: Kilpauk Medical College, Dr. MGR Medical University , Department: MBBS Student class of 2013

Introduction: Adolescence bridges ones childhood and adulthood. It is a phase between the instillation of values and their application. It is also a period of immense stress. There is an ever increasing need for adolescents to be emotionally intelligent and have a good quality of life, so that they can work towards their betterment as well as that of the society. The study aims at understanding the relation between emotional intelligence and quality of life, as well as the implications of Body Mass Index on them.
Material and Methods: 97 subjects between the age group 16-19(late adolescence) were taken from three urban institutions in Northern Capital Region, India They were tested on their emotional Intelligence and Quality Of Life, by using standard questionnaires and their Body Mass Index was calculated . They were also asked for their opinion on their physical health . Linear regression and Bonferroni tests were used for analysis.
Results: Emotional Intelligence had a positive, linear relationship with Quality Of Life. The Body Mass Index had no significant relationship with Emotional Intelligence. Subjects with a normal Body Mass Index scored higher in the Psychological Domain of Quality Of Life. Subjects who admitted to have felt physically unwell and denied being bothered by it, had a lower Emotional Intelligence and Quality Of Life. There was no significant difference in the Body Mass Index with respect to the perception of one's own physical health.
Conclusion: Quality of life and emotional intelligence are correlated. Mental Health Programmes set to improve one should not exclude the other. Physical fitness increases the chances of being satisfied with one's own psychological domain of health. Subjects who admitted to have felt

being physically unwell but denied being bothered by the fact had a lower Emotional Quotient ;Quality of Life as a whole and a lower Social Domain of Quality of Life than the ones who admitted being bothered by it. This suggests that there may be a callous attitude towards one's body image and may indicate a lack of initiative in undertaking a positive action in them. It may be an indirect reflection of externalization rather than defining an internal locus of control . By improving ones emotional intelligence and quality of life, a more mature emotional make-up could be achieved

Session: Public Health

Euthanasia: perceptions and ethical considerations of doctors in Pakistan

ESC-ID: 648
Authors: Hussain Mfa, Naqvi Saa, Siddiqui Se, Shahnawaz Sa, Raza S, Nauman F
Country: Pakistan
University: Dow University of Health and Sciences , Department: Medical Student

Background: The present era has witnessed tremendous improvement in palliative care which has intensified the debate of euthanasia.Being Islamic republic, its practice is not legalized here but it is the necessity of time that the perspective of doctors in Pakistan should be evaluated.
Objective: The purpose of this study is to know the perception and the ethical concerns of doctors towards euthanasia in Pakistan.
Methods: It was a cross-sectional study conducted from August 2008 to February 2009 in three major government hospitals of Karachi. Ethical review board approval was taken prior to the commencement of the study and only those doctors who consented to participate were interviewed through a pre tested interviewer administered questionnaire. To carry out data entry and statistical analysis SPSS-12.0 was used.
Results: Out of 248 doctors approached 153 consented to participate in the study. The male to female ratio was 90:63 and the mean age was 30.90 with ± 6.580. It was quite interesting that only 89 doctors knew about euthanasia therefore the remaining results were out of them: Regarding different types of euthanasia used 69.66% of the respondents were aware of voluntary euthanasia. Law of Pakistan about the euthanasia was known to 53.93%. About the ethical considerations only 25.84% of the doctors believed that it is ethical to practice euthanasia on a patient. During practice 22% of doctors were encountered in a situation where their opinion was taken about the practice of euthanasia and 60% of them had advised it.
Conclusion: It is quite astonishing that more than a third of the doctors in Pakistan did not even know about euthanasia and only one fourth of those who knew about it believed that it is ethical to practice. However, since it is an important issue in the care of terminally ill patients, our health professionals are in favor of further research of this controversial, yet debatable issue for the benefit of our society.

The urgent need to motivate blood donors in Kyrgyzstan

ESC-ID: 694
Author: Zeeshan A
Country: Kyrgystan
University: International University of Kyrgyzstan, International School of Medicine , Department: General Medicine

Introduction: The blood transfusion system in Kyrgyzstan is fragmented with donors either donating blood to friends and family or as paid donors. Every healthcare centre and hospital has its own blood bank with no central blood transfusion system. Safety is based on the use of voluntary non-remunerated donors, followed by their careful selection, laboratory testing of each donation and viral inactivation of the product, where possible. Problems of blood shortage, increasing safety concerns and increasing number of transfusion related diseases are acute concerns in the developing world. Objective: To study the motivating factors for donors to donate, the co relation between the occupation and regularity of donations, knowledge of donors about the benefits of donations, and evaluate services provided by blood banks.
Material and methods: A randomized study of 120 donors at the special blood camp organized by the International School of Medicine at National Hospital Bishkek donation center was carried out. Data was collected through interview administrated by 20 questions including socio-demographical data, knowledge and attitude towards donations and feedback about the service provided by the blood bank.
Results: Out of 120 donors, aged between 18-54 years, 60% were first time donors, 27 % had donated 3 times and only 12% had donated 4 times, 78% had donated blood to a friend or relative and 13% said that they are donating for humanitarian causes. 25 % donors who know the benefits of donation showed willingness to donate in next 4 months, compared to 31 % who know less about the benefits of donations and 44% know nothing about benefits of blood donations. 67% complained about the waiting time while 20% were impressed with the attitude of the donors center employees.
Conclusion: There is an argent need in to make policy about how to urge Voluntary non- remunerated blood donors in Kyrgyzstan. There is also a need to start club 25 program in the country. The more the donors are educated about donations the more frequently the donor donates. Waiting times and attitude of donor centers; employees plays an important role in attracting donors to donate in a regular basis.

Genesis of IMAGINE: Canada's first student-initiated three-pillar approach to healthcare of the homeless population

ESC-ID: 702
Authors: Dugani S, McGuire
Country: Canada
University: University of Toronto , Department: Pharmacy

Imagine: (Interprofessional Medical and Allied Groups for Improving Neighborhood Environments) is the first student-initiated health program in Canada, with a three-pillared approach to addressing the health needs and chal-

lenges of marginalized individuals. Our model involves students and preceptors from nine professions including Dentistry, Health Administration, Law, Medicine, Nursing, Occupational Therapy, Pharmacy, Physiotherapy, and Social Work with a unique student governance, approach to sustainability, operations and informatics. IMAGINE serves as a model of service learning, through its liaison with two community organizations (Central Toronto Community Health Center-Queen West and St. Christopher House-The Meeting Place. Through IMAGINE Clinic (first pillar), clients will have access to assessment, treatment, harm reduction initiatives, and social services at no charge. The healthcare team will determine a) a treatment plan, b) follow up and monitoring, and c) the types of services the client will require. IMAGINE Health Education (second pillar) involves health promotion and includes presentations on disease prevention, personal hygiene, screening, chronic disease management, and immunization. Finally, IMAGINE Community Awareness (third pillar) will consist of lectures and case series on health topics relevant to marginalized populations. Through these lectures, students will learn about barriers to, and inequities in access to health care, and will enhance their understanding of advocacy, social accountability and civic engagement, tenets that guide their professional and personal development. All lectures will be recorded and made available, at no cost, to students and schools globally. Through these efforts, IMAGINE aims to serve as a gateway to health and the healthcare system as well as an inspiring experience for all students involved. Students will work collaboratively, trusting and respecting other professionals, while understanding their respective roles, responsibilities and limitations. The skills, knowledge and confidence gained through debriefings and in working with preceptors will enable students to improve the quality of their professional education and enhance the patient experience. Furthermore, by working with marginalized populations, students will develop the unique skill sets required to care for these patients. IMAGINE provides a unique opportunity to facilitate the World Health Organization's mandate of promoting social accountability, and strives to serve as a model of excellence for institutions worldwide planning a similar initiative.

Assessing Physical exposure to musculoskeletal risks among workers of a rubber factory in Shiraz

ESC-ID: 750
Authors: Salehi M, Ketabi D, Choobineh A
Country: Iran
University: Shahid Sadoughi University of Medical Sciences and Health Services, School of Medicine , Department: Occupational Health Department

*Introduction:*Musculoskeletal disorders (MSDs) are a common health problem throughout the world and a major cause of disability among the work force. Assessment of exposure level to MSD risk factors can be an appropriate base for planning and implementing interventional ergonomic programs in the workplace.
Methods: This study was conducted among workers of a Rubber Factory in Shiraz with the objectives of determination of the prevalence of MSDs among production line workers, and assessment of the level of exposure to MSD risks. In this study, all 16 production units of the factory were studied. In each unit, 50% of the workers were randomly selected and included in the study. A total of 454 workers participated. The Nordic Musculoskeletal Questionnaire was used to study the prevalence of MSDs and the Quick Exposure Check (QEC) technique was applied to assess physical exposure to the risks. The videotaping technique was used to collect the required data for each worker.
Results: The vast majority of the workers (73.6%) had suffered from some kind of musculoskeletal symptoms during the last 12 months. The highest prevalence was reported in the lower back (50.2%), knees (48.5%) and upper back (38.1%). In 85.5% of the workers studied, the QEC score was high or very high. Statistical analysis showed a significant association between the QEC level of risk and MSDs symptoms ($p<0.001$).
Conclusion: The most common ergonomics problems were found to be awkward postures and manual material handling. MSDs had occurred with a high rate among workers of this rubber factory. Corrective measures for reducing risk level seemed essential. Elimination of awkward postures and manual material handling in the workplace were recommended.

Review of respiratory symptom pattern among machine operators in plastic industry.

ESC-ID: 965
Authors: Maduka AKI, Madusanka KU, Malinda WDS
Country: Sri Lanka
University: University of Colombo , Department: Faculty of Medicine

Purpose: It is believed that the plastic recycling machine operators (recycling workers) are more vulnerable to develop respiratory illnesses due to direct exposure to micro particles. Our objective was to assess the prevalence of respiratory symptoms among workers in the plastic recycling machinery with employees in other departments of the plastic factory.
Methods: A descriptive cross-sectional study was carried out in 16 factories among 120 volunteers in the plastic industry (60 were cycling workers' and 60 were other workers'). Data collection was done using an interviewer-administered questionnaire based on the European community respiratory health survey II questionnaire. Presence of respiratory symptoms, their working hours and usage of protective equipment were assessed.
Results: Prevalence of wheezing, chest tightness, shortness of breath at rest and on exertion, cough and sputum production were lower among the recycling workers compared to other workers while hay fever symptoms were higher among the former group. Out of all, 63.3% workers reported as having at least one respiratory symptom. Of them, 30% were recycling workers and 33.3% were other workers. 20 (16.7%) suffered from work-related respiratory symptoms i.e. symptoms improving outside the factories and during holidays. Among them, 10% were recycling workers and 6.7% were other workers. Only recycling workers wore protective equipment (17.5%).
Conclusion: There is no higher prevalence of respiratory symptoms among plastic recycling machine operators compared to other workers in the plastic industry. This may be due to their use of protective equipment.

Nominal group technique sessions: screening stage of the development of American-Ukrainian health management training program

ESC-ID: 993
Authors: Moskalenko V, Hernandes R, Shewchuk R, Hulchiy O, Zakharova N, Rudzsky S, Govorukha M
Country: Ukraine
University: National medical O. O. Bohomolets University, Department: Health management

Background: The aim of the work was to develop an optimal implementation strategy in postgraduate medical education in the health management area, including a discipline curriculum that would meet the needs of target groups - health executives. Objectives Fulfillment of this goal has caused one of the objectives of the study, namely, the need to clarify what knowledge and skills of healthcare management are necessary for development and improvement. Solving this problem was made in the framework of international cooperation between National O. Bohomolets Medical University and University of Alabama at Birmingham, whose representatives proposed the nominal group technique (NGT). Design: In total, 16 heads of medical departments joined the study. The sessions were made taking into consideration of further training course program for the medical administrative leaders. Participation was voluntary. The NGT sessions were conducted by an experienced facilitator not directly involved with the residency training program. Two separate groups of chief doctors were convened, to elicit their perceptions on the following question: „What kind of issues should be included in an intensive program that aims improvement of managerial skills and leadership abilities among the head-doctor in Ukraine?".
Methods: The nominal group technique is a deep-rooted structured, multi-step, facilitated group meeting technique used to obtain and prioritize responses to a specific question. The NGT is a semi-quantitative method that lends it self to research in problem identification, with reward over other structured group process techniques such as general focus groups. Two one-hour sessions with chief-doctors were piloted.
Results: 46 different ideas were generated and discussed as responses to the reviewed question (21 items - Group 1 and 25 items - Group 2). Among experts from the Group 1 Human resource management was identified as the most important issue for health management training program. Whereas in the Group 2 the most supported response was Economical and financial issues.
Conclusions: Thus nominal group technique has capacity to produce a large number of ideas, evaluate the importance of each idea provides a level of choice ideas, excludes too fast decision making, ensures a high level task. The successful results of the study can be the reason for further use of the NGT among the healthcare professionals for effective and strategic decision making. The most important issues, singularized from experts' responses can be applied as fundamental items for the health management training program development.

Prevalence of depression and its relationship with intelligent quotient (I.Q.) in school children of Karachi

ESC-ID: 1008
Authors: Kalar M
Country: Pakistan
University: Karachi Medical and Dental College , Department: Research Monitoring and Training Center

Background: Depression is considered as one of the major cause of poor school performance in young people associated with many other difficulties including learning problems, phobias, panic disorders, violence and suicide. As evidenced by cognitive epidemiology, intelligent quotient (I.Q.) is inversely related to the risk of psychiatric illness. We aim to determine the prevalence of depression and compare the I.Q. in government and private school children aged 13-15 years.
Objectives: 1. To determine and compare the prevalence of depression in government and private school children aged 13-15 years. 2. To determine and compare the intelligent quotient (I.Q.) of government and private school children aged 13-15 years.
Methods: The study was comparative cross sectional survey. The participants were class 8 students, 13 - 15 years age of government and private schools which were selected on the basis of non probability convenient sampling. School children having psychiatric treatment, psychiatric problems like epilepsy, schizophrenia, bipolar affective disorder and psychotropic drugs were excluded. Depression was assessed by using the standard Beck Depression Inventory (BDI). Intelligent quotient (I.Q.) was assessed by I.Q. tests lab scale which is equivalent to the Wechsler Intelligence Scale. Sample size was calculated by using the W.H.O. software for sample size calculation where $f = 0.05$, $1- = 80$, $P1 = 0.20$, $Pa = 0.40$, n (sample size) = 89. The data was entered on Statistical Package for Social Sciences (SPSS) Version 16 and analyzed. Continuous variable (intelligent quotient) was presented as mean ± standard deviation (SD) and categorical variables (depression, previous grades in class, and school children characteristics) were presented as proportions (%). Binary logistic regression analysis was used to assess risk factors for the dependent variable of intelligent quotient (I.Q.) with a threshold for selection of $p < 0.05$. Independent variables were used to represent depression, extracurricular activities, depression in family, relationship problems, friendship problems, bad childhood experience, negative thinking, physical illness, drug abuse and social problems. The study protocol was approved by the Ethical Review Committee of Karachi Medical & Dental College.
Results: Government school children had a significantly higher prevalence of depression than private school children (76/100; 76.0% v 40/101; 39.60%; $p < 0.0001$). The mean intelligent quotient (I.Q.) of government and private school children was 82.0 ± 1.00 and 104.48 ± 0.734 respectively. Depression was the strongest predictor of low scores. Government school children having depression were 3.672 times (95% CI, 1.604 - 8.406) more likely to have low scores as compared to private school children.
Conclusion: Based on our results we came to the conclusion that depression adversely affects intelligent quotient (I.Q.) and leads to low intelligent quotient (I.Q.) in school children. Since government school children have a high

risk of lower average intelligent quotient (I.Q.) preventive measures like counseling and cognitive behavioral therapy may eventually result in an improvement in low scores. Key Messages: 1 Depression in government school children was a significant factor for lower average intelligent quotient (I.Q.). Government school children with depression were 3.672 times more likely to have low scores than private school children. 2 Different preventive strategies may be required to target depression in government school children. 3 Prospective epidemiological studies of depression in school children will be of value.

A survey on the obstacles to modern contraceptive use among married women in Hamedan, Iran

ESC-ID: 1121
Authors: Moaddab M, Moaddab AH, Shahidi S
Country: Iran
University: Iran University of Science and Technology , Department: Medicine

Aim: Population growth is one of the major problems in many developing countries all over the world. The need for controlling population growth necessitates the use and development of various family planning strategies. Contraception is a major component of family planning and preventive health care for women. This descriptive analytical investigation was undertaken to examine the barriers, supply and demand challenges to modern contraceptive use in among married women referred to Hamedan Health Centers in 2009.
Method and Materials: In this study, 264 women were collected with stratified randomized sampling. The data collection instrument consisted of a three-part questionnaire which included the demographics, knowledge level and questions concerning the attitude. Statistical evaluations were performed using Chi- square and pearsonian coefficient. All statistical analyses were performed using the Statistical Package for Social Sciences version 15, 0.05 was considered statistically significant.
Results: There were significant correlations between the number of children, education level, cultural barriers and information source with level of knowledge and attitude ($p>0.05$). The research showed that 49.5% of women have poor knowledge and 21% have negative attitudes about to modern contraceptive use. The 88% of subjects previously used at least one modern contraceptive method while 12% of them did not use any at all. The poor husband-wife communication, religious issues, preferring larger families, to be afraid of side effects and to be dissatisfied with sexual sensation were the most common obstacles to use modern contraceptives.
Conclusion: The findings indicate a marked absence of husband-wife communication and education. In other words, there were strong motivations in the subjects concerning the necessity for family planning and modern contraceptive use. However, due to low knowledge level about contraceptives, there was a high rate of unwanted pregnancies that suggest the poor performance of current family planning facilities. By and large the results of this research emphasize on males roles in family planning programs.

Nutritional status of south african women between the ages 18 and 22 years

ESC-ID: 1465
Authors: Barnard JE, Grant CC, Wood PS, De Villiers N
Country: South Africa
University: University of Pretoria , Department: Human Nutrition / Sports Medicine

Introduction: Osteoporosis - characterized by low bone mass and structural deterioration of bone tissue, leading to bone fragility and an increase risk of fracture - is a disease affecting many millions of people around the world, especially women. An appropriate supply of calcium and vitamin D to bone is essential at all stages of life. During childhood and adolescence bone formation is dominant as bone length and growth increase with age, ending in early adulthood when peak bone mass is attained in females. Osteoporosis induced fractures cause a great burden to society, as it is expected to rise to 6 million cases worldwide by 2050. Iron deficiency is the most common and widespread nutritional disorder in the world, affecting a large number of children and women in developing countries. Two billion people, which is 30% of the world's population, are anaemic - many due to iron deficiency. Objective: The aim of this study was to determine the nutritional status of a representative group (n=51) of young South African women, between the ages of 18 and 22 years.
Methods: A 24-hour recall combined with a food frequency questionnaire was completed by the participants. The dietary information obtained was processed using FoodFinder3 to obtain the nutrient intake of the population and results were statistically analysed by SAS statistical to compare regular intake to the standard RDA recommendations.
Results: The total energy (kJ) intake in females (9551.94;4937.41) indicated no significant difference ($p>0.05$) when compared to the RDA of 9205 for the same age group. There were no significant difference ($p>0.05$) found in the % total protein energy intake and the % fat intake consisting of SFA (saturated fatty acids). However the total % fat energy intake was significant ($p<0.05$) higher in the females (3.67;11.61), whilst the MUFA (monounsaturated fatty acids) and PUFA (polyunsaturated fatty acids) intake also showed a significant difference ($p<0.05$). The CHO (carbohydrates) energy intake was significant lower ($p<0.05$) in females (-3.14;10.99). Results for the analysis of mineral intake (Ca - Calcium, Fe - Iron) compared to the RDA, reported significant lower ($p<0.05$) Ca (-546.21;477.17) and Fe (-2.7969;6.7131) intake in females.
Conclusions: Results indicated that the fat intake of women are significantly higher than the RDA, while lower values than RDA were found for CHO, Ca, Fe, Biotin, Vitamin D and Vitamin E. This can lead to women being overweight and increase their risk for obesity and heart disease later in life. An increased risk of osteoporosis and Fe-deficiency anaemia can be prevented with adequate intake of Ca, vitamin D and Fe intake in the form of food or supplementation.

Japanese cancer screening policy for people affected by the atomic-bombs -past, present and future

ESC-ID: 1481
Authors: Hamashima Y, Chisato H
Country: Japan
University: Tokyo Medical University , Department: Medicine

Background: Radiation is a commonly accepted risk factor for cancer. The Japanese government has provided a unique health care service to hibakusha b'y those radiation sufferers affected by the Nagasaki and Hiroshima atomic bomb attacks in 1945. The hibakusha health handbook issued by the Japanese government allows qualifying hibakusha to have free public health checkups and cancer screening. Objective We describe government-based cancer screening for a-bomb survivors while showing strength and weak points of the system, especially for children of a-bomb survivors. We also explore the future needs.
Method: We give an overview on public cancer screening for ehibakush,?f in Japan and make clear the difference between public cancer screening and that on the reference and interview survey. The MEDLINE and Igaku-Chuo-Zasshi were used to search the reference related to prevention of hibakusha. Through some interviews (i.e. the strategy and obstacle in improving participant rate of cancer screening for hibakusha and their children) with doctors in healthcare facilities for a-bomb survivors, the real issues with hibakusha health care today are examined.
Results: As of March 2006, 259,556 people (around 0.2% of the total Japanese population) qualify as hibakusha and have been given a hibakusha health handbook. Every year, those affected by the atomic bomb radiation can access designated cancer screenings for free. The screening is conducted by each prefecture. The government provides free screenings for particular cancers as follows: Gastric cancer, lung cancer, breast cancer, cervical cancer and multiple myeloma. The hibakusha issue is presently complicated by the issue as to whether their children should also be provided with public cancer screening. A recent survey (January 2009) has indicated that 44 of 47 prefectures conducts no cancer prevention programme for them. Hiroshima and Nagasaki, the two areas most affected by the atomic bomb attacks do not provide these services but instead believe screening should be provided for and paid by the Japanese government. So far, the government provides free basic health checkups for children of a-bomb survivors but this is little known. The issue as to who should take and provide cancer screening services therefore remains controversial. In addition, the interview suggests current cancer screening program for hibakusha faces with relatively low participant rates and public awareness given that a-bomb survivors have higher risk. In 2007, the detection rates of breast cancer, gastric cancer and lung cancer for people eradiated a-bombs are 0.36%, 0.23% and 0.11% respectively (Hiroshima Atomic Bomb Casualty) although the detection rate of it in public cancer screening are 0.27%, 0.15% and 0.05% in Japan.
Conclusions: The health effects of radiation on the children of a-bomb survivors have not been proved scientifically enough, thus the Japanese government does not have to provide free medical care for the children of a-bomb survivors yet. However, in order to explore the effects and improve early detection in children of survivors, the national government should improve the participant rates of basic health check-ups, give cancer screening and collect data on a national basis for future policy development.

Session: Public Health POSTER

A Pilot study: The socio-economic impact of cancer on patients and their families in a developing country

ESC-ID: 667
Authors: Zeeshan Y, Muhammad Y, Ahson M
Country: Pakistan
University: Liaquat University of Medical and Health Sciences, Department: Medical College

Introduction: Cancer is preventable with existing modern screening methods, but most of the developing countries have failed to organize effective prevention programs. One of the reason for this failure is the lack of knowledge about the socio-economic impact of disease on the patients and their families. The pilot study will contribute to a better understanding of socio-economic problems faced by families of cancer patients in developing countries Objectives. To assess the socio-economic impact of Cancer borne by patients and their families in a developing country.
Methods: A pilot study was carried out by conducting a survey of Cancer patients visited Nuclear Institute of Medicine and Radiotherapy Jamshoro (NIMRA) in 2010. A pre-tested questionnaire was used and convenient sampling method was adopted to collect the data. Impact of cancer disease in 5 domains of patient`s life ; Employment, Income, Household, Budget, Access to Healthcare and family support was observed. The data was analyzed using SPSS version 11.5. Results. The data was collected from 60 diagnosed patients of Cancer. The mean age of patients were 43.5 years, among them, males were 48.3% and females 51.7%. Majority of the cases were newly diagnosed. About 25% of cases were suffering from breast cancer, 20% from mouth cancer and 10% form abdominal cancer. The cost of treatment was ranging from 100 US$ to 2500 US$. Mean daily cost of treatment was 15US$. 85% were compelled to borrow the money for treatment from son, father and husband. 99% patients desired to fight against disease till death. Only 20% patients were employed. About 53.3% patients shared that their family is disturbed due to disease.
Conclusion: The socio-economic impact of cancer should be considered, as it may have negative impact on treatment compliance. Policies should be developed to have effective social support system for Cancer patients.

Tobacco smoking practices among medical students and their attitude towards teaching about tobacco smoking in Medical Schools: A questionnaire-based survey from a Pakistani Medical School

ESC-ID: 738
Authors: Shah M, Sreeramareddy CT
Country: Pakistan
University: University of Health Sciences, CMH Lahore Medical College , Department: Faculty of Medicine

Background: Global medical school survey has reported that tobacco smoking issues in developing countries are often taught in a systematic way on as and when topic arose basis. WHO-GHPSS has suggested that an integrated tobacco module should be introduced into the existing medical school curricula. Objectives: To assess medical students' tobacco smoking habits, their practices towards patients' smoking habits and attitude towards teaching about smoking in medical schools.
Methods: A cross-sectional survey was carried among 3 rd and 4 th year undergraduate medical students at CMH Lahore Medical College, Pakistan. A questionnaire was developed after reviewing available literature and validated. Questionnaire had demographic information, students' current practices about patients' tobacco smoking habits, attitude towards tobacco education in medical schools and rating the contents of tobacco module in a five point likert scale. Questions about tobacco smoking habits were adapted from GHPSS questionnaire. Questionnaire was anonymous, self-administered and participation was voluntary.
Results: Overall response rate was 80.5% (161/200). Median age was 21 years while 34.8% were males and 65.2% were female. Prevalence of 'ever smokers' (not smoked during previous 30 days but had tried in the past even if once or twice) and „current smokers' (smoked during previous 30 days) was 28.6% and 9.3% respectively. On multivariate analysis 'ever smoking' was associated with at least one friend smokes (OR 2.9 95% CI 1.3 6.8). Counselling, assessment of willingness to quit and assisting patient to quit smoking, were never, rarely or sometimes (70-80%) done. Doctors' role in tobacco control, being role models, their competency about smoking cessation and facilities for smoking cessation, 75% to 90% of respondents agreed/strongly agreed. Nearly 75% agreed that medical schools should teach about tobacco cessation. Nearly 75% agreed that current curriculum teaches about tobacco smoking non-systematically and should include a separate module. Majority (80%-90%) of the students indicated treatment of nicotine addiction as important.
Conclusion: Medical students were not practicing smoking cessation methods during clerkships. Students indicated that current curriculum was inadequate and were positive towards adopting a separate module on tobacco education. Teaching about tobacco smoking should be improved in medical school curricula.

Dimensions of self-reported aberrant driving behaviours and their relation to accident involvemnt in Iran

ESC-ID: 740
Authors: Ketabi D, Halvani G
Country: Iran
University: Shahid Sadoughi University of Medical Sciences and Health Services, School of Medicine , Department: Occupational Health Department

Introduction: The aim of the present study was to confirm the distinction between errors, slips, lapses and violations in Iranian driving population. Furthermore, the relationship of these behaviours with road traffic accidents was examined. The present study investigated whether this distinction was justified for self-reported driver behaviour.
Methods: 290 male drivers and 260 female drivers completed a questionnaire containing items on driver demographics, driving penalties incurred, driving convictions and accident history and driver behavioural aberrations drawn from the Driver Behaviour Questionnaire (DBQ). In agreement with Reason et al. factor analysis revealed three factors; in the present study these were violations, dangerous errors, and relatively harmless lapses.
Results: Men of all ages reported more dangerous violations than women. Women, however, were significantly more prone to harmless lapses than men. Young drivers committed more dangerous errors and dangerous violations than older drivers. Drivers who reported a high level of road exposure and those who reported having been convicted for speeding reported more dangerous violations.
Conclusions: These findings were consistent with the view that errors and violations are indeed mediated by different psychological mechanisms. Violations require explanation in terms of social and motivational factors, whereas errors (slips, lapses, and mistakes) may be accounted for by reference to the information-processing characteristics of the individual.

Assosiation of physical activity and mental health in elderly

ESC-ID: 783
Authors: Mortazavi S, Mohamad K, Eftekhar H, Dorali R
Country: Iran
University: Tehran University of Medical Sciences , Department: public health

Introduction: The world population is aging rapidly.with increasing longevity, it's social, financial and health consequences can not be ignored. In addition to an increase of many age related physical illnesses, this demographic change will also lead to an increase of a number of mental health problems in older adults .Therefore, any health promotion approach that could facilitate introduction of effective primary, secondary and even tertiary prevention strategies in old age psychiatry would be of significant importance. This paper explores physical activity as one of possible health promotion strategies and has positive effect on mental health in later life.
Methods: In this Randomized Controlled Trial , 400 male and female aged 60 years and older randomly allocated into case and control group. The subjects were excluded if

they exercised regularly or had some problems that could-n't do exercise or be absent more than 3 sessions during the intervention. 28 person excluded and 372 (181 case , 191 control) involved the study. Exercise program (two 30-45 minute sessions weekly for 2 months) assigned for case group.some practical problems maid subjects into two groups, individual physical activity (n= 96) and group physical activity (n= 85). 28-item General Health Questionnaire (GHQ-28(was administered in order to obtain information on mental health. The result follow-up for 3 months. The data was analyzed with spss (version 11.5) statistical software and chi-square, paired-t test, independent- t test and wilcoxon test was used.
Results: The mean of GHQ total scale decreased in case group (before=8 , after= 5.6) and this changes remained significant after 3 months (The mean after 3 monthes = 5.6, $p < .001$). GHQ subscales Somatization (before=2.2 , after= 1.5), Anxiety (before=2 , after= 1.5), social dys-function (before=1.9 , after= 1.4) and Depression (before=1.8 , after=1.3) decreased in case group and as we said in tables all of these changes remained significant after 3 months. in addition there were significantly differ-ence between Mental health benefits in Subjects with group physical activity and individual physical activity and doing exercise with a group is more effective.
Conclusion: This study showed Physical activity is an effective intervention and significantly improved mental health in older adults, but if it done with a group especial-ly in same age it has more benefits.

Prevalence of premenstrual syndrome and its relationship with menstrual status and non-menstrual stress factors in young adult females

ESC-ID: 795
Authors: Oren B, Demirkyran G, Yurten H, Oduz M, Akar ZA
Country: Turkey
University: Marmara University School of Medicine , Department: Public Health & Epidemiology

Introduction: Premenstrual syndrome (PMS) is a cluster of physical, behavioral and emotional symptoms that appear on a regular basis before the onset of menstrual bleeding. Symptoms include bloating, breast pain, ankle swelling, a sense of increase in body weight, irritability, aggressiveness, depression, lethargy, and food cravings. Although the true prevalence of PMS is unknown, approx-imately 75% of women complain of some premenstrual symptoms.
Aim: The aim of this study was to examine the relation-ship between menses-associated health problems of women, such as premenstrual symptoms, menstrual pain and irregular menstrual cycles, and psychosocial stress.
Material and methods: A cross sectional study was con-ducted among school of pharmacy students who were between the age of 17 and 25, measuring psychosocial stress levels 1 week before menstrual bleeding by sums and grading of only stress part of the DASS (Depression Anxiety Stress Scala). A total of 221 female students (mean age 20.57 and plusmn;1.93 years), who were pro-posed to participate in the study in February 2010, com-pleted the questionnaire, which dealt with anthropometric data, lifestyle, menstrual history, and menstrual health status.
Results: Students who reported menstrual pain and stu-dents who got high stress scores had higher risk to expe-rience of premenstrual syndrome than those who did not and who got lower stress scores respectively. Binomial logistic regression analyses were used to identify inde-pendent factors associated with having menstrual pain, the experience of irregular menstrual cycles, smoking, age, degree and stress score. The proportions of students who reported premenstrual symptoms, menstrual pain, and the experience of irregular menstrual cycles were 72.9%, 94%, and 24%, respectively. No statistically sig-nificant relationship was determined between the pres-ence of PMS and age, year of school, smoking status and irregular menstrual cycles.
Conclusion: Stress score and menstrual pain were signif-icant predictors for premenstrual symptoms. The results suggest that premenstrual syndrome is independently associated with psychosocial stress and the experience of menstrual pain among school of pharmacy students, implying that changes in the functional potentiality of women as a result of stress are related with changes in their menstrual function.

Feasibility of remote medical consultation Implementation in Iran University of Medical Sciences

ESC-ID: 895
Authors: Khammarnia M, Torani S, Mohamadi R
Country: Iran
University: Iran University of Medical Sciences, Department: Medicine

Background: The rate of accessibility to health care is known as the main index of community health. Teleconsultation is defined as using comminuting equip-ment for communicating between physicians and patients. This study aimed to survey the readiness of spe-cialized hospitals to implement teleconsultation, focus-ing on manpower readiness, communicational equipment and procedures.
Methods: The present descriptive cross-sectional study was carried out in 2010. Research population consisted of hospital management unit, IT unit, matron, supervisors, etc. The research sample included 106 top and middle man-agers of studied hospitals. Data were collected by the ques-tionnaire that researcher has been drown according his purposes. The validity and reliability of questionnaire was determined by the researcher. Data were analyzed by the software of spss.
Results: Among 8 the hospitals, in the study 4cases scored more than average(29). Hashemi Nezhad was in a better condition than the other hospitals in the study. In addition, the hashemi Nezhad Hospital and Shahid fah-mide Hospital scored higher than average on awareness of managers and required standards.
Conclusions: Impelementation of teleconsultation could facilitate community accessibility to health services and lead to a considerable reduction in health expenditures, so suggest that hospitals do necessary intervention for establishing teleconsultation network.

Public health aspects of traditional bonesetting practice in South Eastern Nigeria

ESC-ID: 1067
Authors: Adepoju PO
Country: Nigeria
University: Imo State University, Owerri, Nigeria , Department: Medical Laboratory Science

In this study, 18 traditional bonesetters in 6 South Eastern states of Nigeria were understudied to elucidate on the public health impacts of their practice- the perception of their patients, avenues for integration into the primary health care system and several other issues. The results showed that all patients have confidence in the traditional healers more than in orthodox orthopeadic practitioners. The relatively affordable expense, esoteric practice, secrecy, acclaimed potency of the herbal preparations, easier access, shorter duration of consultation, coupled with the erroneous assertion that amputation is the only orthodox solution; override the side effects of complications, infections and possible exploitation and extortion. With the rising incidence of orthopaedic cases as a result of the booming motorcycling operations in the study area, this study has identified areas where traditional bone setting procedures could be integrated into routine orthopeadic practice, and a plan is proposed to enlighten the traditional bonesetters on medical technologies, accessing referral centers, and how to handle complications. With 76% of the traditional bonesetters not having acceptable level of education, it becomes imperative for stakeholders to safeguard the health of the unsuspecting members of the public who consult traditional bonesetters without comprehensive prior information on what awaits them.

Non-compliance in a large population of elderly patients with cardiovascular disease

ESC-ID: 1088
Authors: Onutu R, Onofrei A
Country: Romania
University: University of medicine and farmacy "GR.T.POPA" IASI , Department: General medicine

Background: Non-compliance with prescribed drugs is an important cause of hospitalization in elderly patients due to multiple psychological and physical barriers, multiple diseases and the use of a wide variety of drugs. We aimed to examine the causes of non-compliance and the contribution of non-compliance in hospital admission among elderly patients with cardiovascular (CDV) diseases.
Methods: A retrospective study of 922 patients aged > 65 years admitted during the period Jan. 2004 – Jan 2006 in the Geriatric Department of our clinic for CDV diseases was conducted. Data on compliance was collected through a questionnaire on compliance, beliefs, knowledge, and self-care behavior and compared with information from past medical records or from family members. We assessed the main causes of hospital referral, carefully looking for possible or probable cases of non-compliance. The main causes of non-compliance were also assessed.
Results: The mean age of the study group was 74.5 years [65-91] M:F ratio was 42:58. 9% were living alone and 59% completed high school. The average number of different drugs prescribed was 4.3 and the average number of pills taken daily was 5.8. Ninety patients (9.76%) were hospitalized for aggravation of their CDV disease due exclusively to non-compliance and 148 (16.05%) had other factors that leaded to non-compliance (e.g. nausea and vomiting, dizziness, negative stress). The non-compliant population (n = 90 patients) lived equally in urban and rural area. Most of them were 70 to 80 years old (48.89%), did not complete high school (72.22%) and had a very low income. The rate of hospitalization in these patients in the study period was 1.84 /patient. All the patients had heart failure (HF) due mainly to ischemic heart disease (46.67%) followed by hypertension (18.89%), arrhythmias (17.77%) and dilatative cardiomyopathy (16.67%). The main self-reported causes of drug non-compliance were inadequate income (34.2%), inadequate instruction (17.7%), too many drugs (17.7%) and physical barriers (visual disturbances or arthritis) (11.11%).
Conclusions: Our study helps identifying several characteristics of aged patients with CVD at risk of non-compliance. The most important causes for non-compliance were inadequate income to fill the prescription followed by inadequate instruction combined with an increased number of pills (> 3 pills/d).

Determinants of health -promoting lifestyle among university of medical science students, Yazd, Iran

ESC-ID: 1235
Authors: Hossein shahi D, Motlagh Z, Mazloomy SS, Fazelpour SH
Country: Iran
University: Yazd Medical university , Department: health

Background: It is well known that one's lifestyle affects health and that health-promoting activities and a healthy lifestyle are major strategies to facilitate and preserve health 1. In the United States and Canada, about 50% of all health care costs are said to be attributable to unhealthy lifestyle 2. Life in college is a transitional period, offering opportunities to establish healthy lifestyle behaviors 1. Yet, researchers have revealed that college students are engaging in risky health behaviors, such as an unhealthy diet, physical inactivity ,and other negative practices, which might produce long term effects on their health 3. In this period, when unhealthy and risky behaviors are at their most intense, it is important to understand the factors that affect whether students adopt healthier behaviors and reduce risky behaviors 1. The purpose of this study was determine The Health-promoting Lifestyle among yazd university of medical science students.
Method and material: The study was a cross-sectional descriptive survey assessing health-promoting lifestyle among yazd university of medical science students .total number of 440 students were entered in the study using a stratified sampling method. health-promoting lifestyle was measured using walker's health – promoting life style profile II (HPLPII) instrument. the data were analyzed through using the statistical package for the social sciences version 11.5 and statistical tests of T. test, Chi –square, One Way Anova.
Result and conclusion: The sample of 440 students were composed of % 67/4 females and % 32/6 males .the sub-

ject's age ranged from 17-33 years with a mean age of 21/09 years. for the total sample ,the overall health-promoting lifestyle profile had a mean of 130/31 (SD=19) the lowest mean in the subscales was 16/24 (SD= 4/28)for physical activity and highest was 26/03 (SD=5/04)for spiritual growth. a significant association was seen between the socio demographic variables particularly employment situation (p=/002), field (p=/000), mother education level (p=/007) and mother job (p= 0/01)with mean of overall health-promoting lifestyle profile. there was a significant difference between males and females in physical activity subscale, too. This study revealed that students had positive health-promoting lifestyle profile, but because of low physical activity among students specially in girls designing health education programs in order to increasing motivation for doing physical activity and also necessary equipment development by university administrators is recommended.

Health effects of smoking among young people

ESC-ID: 1279
Authors: Kaadan I, Alnasser A, Heer M
Country: South Africa
University: University of Aleppo , Department: Faculty of Medicine

Aims: The vast majority of smokers begin using tobacco products well before the age of 18 years. It was predicted that if the pattern seen nowadays continued, a lifetime of tobacco use would result in the deaths of 250 million children and young people alive today, most of them in developing countries. The study shows that among young people, the short-term health consequences of smoking include respiratory and non respiratory effects, addiction to nicotine, and the associated risk of other drug use. Long-term health consequences of youth smoking are reinforced by the fact that most young people who smoke regularly continue to smoke throughout adulthood.
Methods: Participants were selected through stratified random sampling. The final sample included two subpopulations: middle (n = 815) and high (n = 632) school students.
Results: 1- In adults, cigarette smoking causes heart disease and stroke. Studies have shown that early signs of these diseases can be found in adolescents who smoke. 2- Smoking at an early age increases the risk of lung cancer. For most smoking-related cancers, the risk rises as the individual continues to smoke. 3 - Teenage smokers suffer from shortness of breath almost three times as often as teens who don't smoke, and produce phlegm more than twice as often as teens who don't smoke. 4 -Teenage smokers are more likely to have seen a doctor or other health professionals for an emotional or psychological complaint.
Conclusion: Tobacco use is one of the biggest public health problem has ever faced, it is essential to plan and evaluate tobacco use prevention programs, and suggest the importance of following a systemic approach.

High quality, practical emergency medicine training for medical students

ESC-ID: 1285
Authors: Fandler M, Zoidl P
Country: Austria
University: Medical University of Graz

Aim: Practical medical education has long been a goal at the Medical University of Graz (Austria). In cooperation with the Styrian Red Cross ambulance service, a worldwide unique system was created with roots almost 120 years old. Selected senior Medical students are trained by experienced emergency physicians and EMTs in practical emergency medicine „in the streets" and are also being subjected to extensive education by University physicians. The students conclude their education with the highest possible level of non-physician qualification in emergency medicine in Austria, an equivalent to an advanced care paramedic (the so called „NKIs" german: „Notfallsanitaeter mit besonderer Notfallkompetenz Intubation und Beatmung - NKI Rettungsmediziner"). The emergency medical system in Graz consists of many ambulances staffed with EMTs, two doctor-staffed rapid response cars, an physician staffed helicopter and also two NKI-staffed ambulances (MICUs - mobile intensive care units). In life-threatening emergencies, the doctor-staffed rapid response cars are dispatched parallel to the NKI-staffed MICUs. The NKIs can provide advanced life support to any patient until the doctor arrives - and assist him/her afterwards.
Methods and materials: Medical students who want to become NKIs are subject to extensive education and training. In total, they spend over 2000 hours during their training. They have to complete multiple weeks of internships in internal medicine, anaesthesiology/intensive care, surgery and pediatric anaesthesiology, also many weeks of university training in emergency medicine. Additional courses need to be taken at the Red Cross ambulance service, including Mass Casualty Managment. As trainees, future NKIs have to provide evidence of more than 50 emergencies handled under supervision of experienced NKIs and emergency physicians. NKIs gain early experience in emergency medicine. This - combined with their extensive training - enables them to also be used as teachers. NKIs are used by the Medical University of Graz during the first-aid courses for medical students in their first years and for practical emergency medicine courses for senior students. Also, experienced NKIs are frequently used as instructors for Red Cross Ambulance personnel and future emergency physicians.
Conclusions: Early exposure and intensive training enable senior medical students to reach a high level of competence in pre-clinical emergency medicine. This provides the students and therefore future doctors a good start for their professional career. The use of NKIs as teachers and instructors - especially as peer-to-peer teachers for other medical students increases the total interest of medical students in the important field of emergency medicine.

Patients seeking health information on Internet

ESC-ID: 1319
Authors: Kuncaite G, Dauksiene J, Radziunas R.
Country: Lithuania
University: Kaunas University of Medicine , Department: Social Pharmacy

Relevance of the work: The availability of adequate information to consumers of medicines is seen as an important part of health care. As consumers become more active participants in health care decisions, the need for information allowing consumers to make informed choices has increased. Most patients access information from the sources that are most convenient for them. Physicians, pharmacists and other health care providers are not the only sources of health information to the patients. It is becoming increasingly important to understand which sources patients use for health information search. The Internet is one of the youngest sources of health information for everyday growing popularity. Moreover, today‘s younger „internet generation“ eventually will be the main drug user so it is especially important to understand their needs and attitudes.
Aim: To determine patients' attitude towards health information found on the internet and to identify mostly searched health information topics.
Methods: The structured interview study was held in June-December, 2009. 360 Lithuanian pharmacy patients took part in this survey. The proportions of city, town and rural areas community pharmacies of the investigation were equal. 73 percent of the pharmacy patients, who visited pharmacies of the research on investigation day, matched the inclusion criteria and agreed to take part in the survey. Health care professionals were excluded. Results. The analyses indicated that health information is searched on the Internet by 30.2 percent pharmacy patients and even 35.8 percent of the respondents don‘t use internet at all, identifying the main reason - lack of skills and knowledge. The majority of the Internet consumers are 18-40 years old with higher education and higher incomes. The most interesting areas for community pharmacy patients are sports and diet (40.8 percent), digestive system diseases (38.4 percent), cardiovascular diseases (37.1 percent), respiratory diseases (32.2 percent), women diseases (31.8 percent), oncology diseases (14.5 percent). A big part of the respondents (73.7 percent) stated that the information found on the Internet sometimes causes doubts, though quite a high number of consumers highly trust it (22.4 percent). Major problems faced by respondents in finding health information online are unsystematized information and controversy (23 percent). The respondents are satisfied with the amount of information (35.3 percent) and they believe that sufficient information is comprehensive (16.9 percent). 55 percent of the respondents in accordance with information found on the Internet have tried to self-diagnose the disease, exactly half (50 percent) of the respondents have tried to self-treatment and even 55 percent of the respondents chose medication themselves. Over 47 percent of the respondents consider information only with their families.
Conclusions: The Internet becomes important source of health information especially among younger part of population. Generally, patients are satisfied with the amount of information but still have doubts about its quality or misinformation. Despite it, still a high number of patients try to identify the disease, choose the treatment and medicines, even prescribed ones. What is more, information is more often discussed within the family and relatives than with health care professionals.

Improving medical student's communication skill in community settings in Yogyakarta, Indonesia

ESC-ID: 1356
Authors: Wibowo MF, Claramita M, Kharismayekti M, Prabandari YS, Febriyani D
Country: Indonesia
University: Gadjah Mada , Department: Medical Education - Skills Laboratory

Backgrounds: Studies on doctor-patient communication revealed that students' ability of communication skills in a laboratory setting (Skills Lab) is insufficient. Faculty of Medicine Gadjah Mada University responded this issue with a community based education (CBE) program, in which allow students to interact with people in the community so that students could apply their clinical skills directly (the non-invasive skills) including communication skills. Objective: To find out the benefits and obstacles for students learning communication skills in community settings and to find out the advantages for the community.
Material and Methods: Thirty medical students and 20 member of community participated in this study. Eleven NGO's in Yogyakarta Province, with their specific communities participated. We use ten weeks participatory rural appraisal for students to be involved in community activities. We use qualitative methods for analysis: focus group discussions, in-depth interview, and observations. Data were recorded and transcribed. Repetitive open coding processes with three coders were done in a six week period of analysis. Result: Students expressed many difficulties during learning at the community settings. Nevertheless, these obstacles were coded as the benefits they gained from this program in the early medical education. Students joining this program are also more aware of the importance of contextual communication skills. On the other hand, this CBE may benefit the community itself by providing the chance for the member of the community to have more exposure to medical information as well as to health care professionals.
Conclusion: Real settings learning process provide numerous problems that unlikely to solve by medical student with level of abilities they already mastered. Nevertheless, it provides students the chance to learn independently how they would encounter such problems in the future. This study supports students' self directed learning and construction of theories into practice.

Lithuanian patients' attitude to the package leaflet as a source of pharmaceutical information.

ESC-ID: 1365
Authors: Brazauskas P, Dauksiene J, Radziunas R
Country: Lithuania
University: Kaunas Medical University , Department: Pharmacy Faculty

Introduction: Patient satisfaction with the treatment may be dependable on the quality of information he gets.

Package leaflet is a kind of written information sources that provides basic information about drug usage, dosage, contraindications, interactions, etc. Is this package leaflet useful and provided information good enough? It is a question of concern, so patients may give some respectable answers. Aim. The purpose of this survey was to evaluate the importance of package leaflets as source of medical information for patients, as well as to identify its readability level and comprehensibility options.
Methods: The survey was carried out using a validated anonymous questionnaire. The questionnaire included five questions related on package leaflets apart from personal questions about patients. Community pharmacy patients who bought prescription or over-the-counter medicines were interviewed in chosen community pharmacies of Lithuania. Results. A total of 360 patients participated in this survey.
Results showed that after physician and pharmacist as most important medical information providers (81.6 per cent of respondents and 64.4 per cent of respondents respectively), package leaflet takes third place in a queue, regarding that 49.7 per cent of patients are using it as an information resource. Public recognizes leaflets as a key of written drug information source. 97 percent of patients stated, that they are satisfied with the idea of package leaflet. Survey revealed that the leaflet was always read by 78.9 per cent of patients. Patients' opinion about comprehensibility of package leaflets differs between 55, 7 percent as understandable and 44,3 per cent as not always understandable. Biggest concerns in patients' perspective about package leaflets are medical terminology and the size of characters used in it. Patients are seeking additional information about drug dosage (66.7 per cent of respondents), more detailed information on what the medicine is used (62.8 per cent) and what the possible side effects of drug can occur (50,6 per cent).
Conclusions: Results of the survey showed that a package leaflet remains one of most important information sources. It‘s used by major part of patients who are starting to use a new medicine. Some answers should be given how to make package leaflets more convenient to use solving the main medical terminology problem. Despite this fact society finds it as reliable source for drug information.

Terrorism in the country and its impact on stress levels and education amongst undergraduate students of Karachi, Pakistan

ESC-ID: 1399
Authors: Sajjad H, Kiani R, Latif H, Jawed Y, Zawar I, Ansari H, Khan F, Rashid U, Cheema H, Saleem S
Country: Pakistan
University: Aga Khan University , Department: Student, Medical College

Background: Terrorist activities strike fear and stress in the general public. Its toll on the youth has not been investigated as adequately as it should be. The media, apart from playing an important role in dissemination of information, also contributes to the symptoms of distress and perception of fear amongst the people. Recent terrorist activities in Pakistan are having an increasingly negative impact on educational activities. This study evaluates the effect of terrorist activities on the young people of Pakistan in terms of stress and the ways in which acts of terrorism have disrupted curricular activities.
Methods: 459 undergraduate students from 5 educational institutions in Karachi, Pakistan took part in a cross sectional, questionnaire based study. The questionnaire included demographic characteristics, the Stanford Acute Stress Reaction Questionnaire, and an additional set of questions to evaluate the exposure to terrorism and its impact on education. All participants were included in the study after taking an informed consent.
Results: Acute stress disorder was identified in 44.9% of the students. Of these 25 % mentioned terrorism as a major reason of stress. Because of terrorist activities, 82.5% of the students felt their sense of security being threatened and they have changed various aspects of their lives to counter this threat. 74.5% of the participants thought their education had been affected because of terrorist activities. Media content was found to be a potent stress inducer, particularly after the event, as advocated by 79% of the participants.
Conclusion: There is significant stress in the undergraduate students of Karachi, Pakistan. A considerable number of students have been exposed to terrorism. Media may play a significant part in increasing stress.

Session: Pulmology

Effectiveness of routinely approach towards smoking cessation when lung cancer suspected in current and former smokers

ESC-ID: 586
Authors: Trofor L, Albu A, Trofor A
Country: Romania
University: U.M.F. "Gr.T.Popa" Iasi , Department: General Medecine

Introduction: Smoking is a major risk factor for lung cancer, therefore routinely approach of current or former smokers towards quitting smoking is the first legitimate medical gesture to manage lung cancer.
Aim: To determine smoking cessation rates in current or former smokers considered at risk for lung cancer development.
Material and Method: We conducted a study on 160 smoking lung cancer suspects, addressed to the Smoking Cessation Center in our clinic, between January 2006 - December 2008. The patients were included in the study on basis of: past or current smoking history, confirmed or suspect clinical-radiological - bronchoscopic - bronchial biopsy lung cancer diagnosis criteria. All subjects willing to quit smoking, whether lung cancer confirmed (LCC) or lung cancer suspected (LCS) were routinely delivered a smoking cessation individualized program. Smoking cessation outcomes were determined by assessment of smoking status at 2, 4, 8, 12 and 24 weeks follow up visits.
Results: We found 108 current smokers and 52 ex-smokers. Lung cancer was confirmed in 46 active smokers and 24 ex-smokers. Smoking cessation pharmacological therapy was prescribed in 74 currently smoking patients, among who 38 cases of confirmed lung cancer and 36 with lung cancer suspicion. After standard 3 months treatment cure (pharmacotherapy with bupropion /varenicline/ nicotine patch + 4 -6 counseling sessions), 36 patients (48, 6%) quit smoking (16 LCC and 22 LCS). At 6 months

follow-up evaluation, tobacco abstinence was found in 26 patients (35,1%), meaning 10 LCC and 16 LCS.
Conclusions: In a smoking cessation program to routinely approach lung cancer suspect smokers to quit, we found higher abstinence rates than in our current smoking cessation practice to assist „healthy" smokers.

Sleep quality among medical students in Karachi, Pakistan

ESC-ID: 756
Authors: Zahid S, Surani A, Khaliqdina SJ, Surani AA, Khaliqdina SAJ, Surani S
Country: Pakistan
University: Dow University of Health Sciences , Department: medical Student

Background of Research: Sleep is essential for a student's health and well being. Inadequate sleep can lead to Excessive Daytime Sleepiness (EDS), which is responsible for poor academic performance and reduced work productivity. Objective: To study the assess sleep habits among healthy medical students in Karachi, Pakistan and to correlate it with daytime sleepiness.
Method: Medical students in Karachi from Five medical schools filled out a sleep diary, consisting of three validated questionnaires i.e. Epworth Sleepiness Scale (ESS), Stanford Sleepiness Scale (SSS), Pittsburgh Sleep Quality Index (PSQI). Questionnaires that were completely filled were included for statistical analysis.
Results: A total of 504 medical students participated in this study. 199 (39.5%) were „poor sleepers" (PSQI > 5) of which 66.3% were females. Poor sleepers as compared to normal sleepers had a lower mean SSS score 2.65 (± 1.38) vs. 2.19 (± 1.23) respectively ($p<0.05$). Mean sleep time of poor sleepers was 5.54 hours (± 1.2) as compared to 6.9 hours (± 1.4) among normal sleepers ($p<0.05$). Among poor sleepers 40.2% had an abnormal ESS score (≥10) compared to 26.8% of normal sleepers.
Conclusions: Poor sleep quality is common among medical students in Karachi, Pakistan. It is associated with Excessive Daytime Sleepiness (EDS), Female gender and inadequate sleep. Clinical Implications: Medical students in Pakistan may need to be educated about the importance of sleep and given more information about sleep hygiene measures and be evaluated for sleep related breathing disorder if symptomatic.

Su Jok acupuncture in correction of pulmonary ventilation`s abnormalities at patient with chronic bronchitis

ESC-ID: 758
Authors: Kholodnova MA, Sergeeva EV
Country: Russia
University: Cuvassia State Universty Medical Faculty , Department: Department of medical biology

Backgrounds: In the last decade chronic inflammatory processes took uninterruptedly recurrent clinical course. There is much more drug intolerance that time. Using non-medicamental methods of treatment at patients with chronic bronchitis, in particular Su Jok therapy, allowed us to improve indices of pulmonary ventilation. The aim of the research is to study dynamics of serotonin, catecholamine and histamine content in peripheral blood elements (plasma, erythrocytes, neutrophils, lymphocytes, platelets, monocytes, basophiles) under the influence of Su Jok therapy at patients with chronic bronchitis.
Methods and materials: 31 patients with chronic bronchitis were examined. We measured quantity of serotonin, catecholamine, and histamine in peripheral blood elements before and after session of Su Jok acupuncture. Histamine were measured by method of Cross, Even and Rost [1], serotonin and catecholamine were measured by Falk and Hillarps` method , modified by E.M. Chrohina [2]. Also pulmonary ventilation was examined with apparatus Spirosfit-3000. Results. It was observed that under the influence of Su Jok therapy at patients with chronic bronchitis quantity of serotonin was decreased in plasma, neutrophils, monocytes, erythrocytes, lymphocytes. Quantity of catecholamine was increased in neutrophils and lymphocytes. Concentration of histamine was decreased in plasma and thrombocytes, increased in monocytes and platelets. Correlation analysis between respiratory function rates and quantity of histamine, serotonin and catecholamine in peripheral blood elements before and after Su joke acupuncture session was performed. Change of correlation dependence between respiratory function abnormalities and quantity of bioamines was identified. Positive coefficient of correlation in pairs of some respiratory function rates and serotonin in erythrocytes, some respiratory function rates and catecholamine in platelets, neutrophils, lymphocytes, some respiratory function rates and histamine in erythrocytes, platelets was revealed.
Conclusions: Using Su Jok acupuncture aims to optimize bioamines` quantity, which results to improving pulmonary ventilation indices.

Chronic obstructive pulmonary diseases, atherosclerosis and chronic inflammation

ESC-ID: 850
Authors: Rykhlitska K, Tkach E
Country: Ukraine
University: Bukovinian State Medical University , Department: Internal Medicine and Clinical Pharmacology

Introduction: The prevalence of ischemic heart disease is approximately twofold higher in patients with chronic obstructive pulmonary diseases (COPD). Likewise, cardiac patients with COPD have a reduced short- and long-terms of survival. This comorbidity of COPD with atherosclerotic vessel disease is associated with common risk factors, such as smoking. However, atherosclerosis, in addition, shares many of the inflammatory mechanisms with those found in COPD. The aim. To study the intensity of cytokine regulation in patients with COPD combined with ischemic heart disease.
Material and methods: 72 patients with COPDand ischemic heart disease were examined. Patients were divided into 3 groups: First (I)group-persons with COPD; second (II)group- persons with COPD combined with ischemic heart disease and the third (III) group - persons with ischemic heart disease. The activity of inflammation was determinedby the level of interleukins (IL): IL-6, IL-10, IL-1β; and TNF-alpha by immune fluorescence method. The results of research. The results indicate

cytokine status in patients with COPD of I-II severity with concomitant ischemic heart disease during exacerbation of underlying disease. The significant increase of the level of proinflammatory cytokines (TNF-alpha at 21.5%, IL-6 at 32.1% and IL-1β at 43.4%) compared with the control group (p<0,01) was found. That fact with a high probability can predict the risk of development or progression of bronchial permeability disorders, damage of the vessel intima with subsequent progressing of the atherosclerotic plaque.
Conclusions: Thus, the main group of patients was characterized by the hyperproduction of proinflammatory cytokines: IL-1β, IL-6 and TNF-alpha, while IL-10 level was lower in patients of all groups. We can suggest the violation of cytokines chain in patients with COPD combined with ischemic heart disease.

The thyrotropic function of the hypophysis and functional changes of the thyroid gland in chronic obstructive diseases of the lungs in patients of older age

ESC-ID: 955
Authors: Todoriko L, Todoriko D
Country: Ukraine
University: Bukovinian State Medical University , Department: Internal Medicine and Clinical Pharmacology

In order to evaluate the endocrine function of the thyroid gland (TG) in case of chronic obstructive diseases of the lungs (CODL) we have studied a few components which stipulate the ultimate result of the action of the thyroid hormones: the synthesis and secretion of free thyroxin and triiodothyronine (fT3 and fT4), peripheral conversion fT3/fT4 which stipulates an interaction with target cells with the realization of the specific biological effect, the state of a vertical interaction and a regulation of the TG activity - the level of the thyrotropic hormone (TTH). The results of the trials indicate that there occurs hypertriodothyroninemia in older age patients with CODL . It must be noted that the ditribution of the rate of manifestations of individual physiological abnormalities was disproportionate: the level of fT3 in 55,1% of the patients was within the limits of fluctuations of individual values and constituted 4,58 ± 0,12 pmole/l (a difference makes up 22,1%, (p<0,05); this index was essentially higher than the upper boundary of individual devations and constituted 9,95 ± 1,21 pmole/l in 34,8% of the patients and that is 2,8 times higher from the age related normal value (p<0,05); this porameter was lower than the corresponding normal value (3,2 ± 0,78 pmole/l) in 10,1% of the patients. A reliable increase of the level of T3 in a greater part of the patients with CODL (89,9%) is indicative in favour of an increase of the TG hormone synthesizing activity in case of an exacerbation of CODL. A distribution of the rate of individual devations of the amount of the blood plasma fT4 in CODL was relatively proportionate : it constituted 9,7 ± 0,26 pmole/l in 42,7% of the patients and that is almost 2 times lower than the normal value (19,26 ± 0,68 pmole/l; the content of T4 was within the limits of the individual interval and made up 15,133 ±0,34 pmole/l, the later being lower by 24,1 % than the age related normal value (p<0,05). Hyperthyroxinemia was diagnosed in 24,7% of the patients (a differense in relation to apporently healthy persons constituted 18,3%, (p<0,05). The results of the studies have established a suppression of the function of the hypophysis in patients with CODL, manifesting itself by a decrease of the TTH content in the blood plasma in 91,9% of the patients. Thus, a minimal thyroid insufficiency established by us in 75,3% of older age patients is a threat of the development of the syndrome of nonthyroid pathology in CODL.

To assess sleep quality among Pakistani physicians

ESC-ID: 1016
Authors: Surani A
Country: Pakistan
University: Dow University of Health Science, Department: Medicine

Aim: Poor sleep quality is very common among physicians worldwide. It is associated with Excessive Daytime Sleepiness (EDS) with resultant decrease in work productivity and increase in incidence of medical errors. Factors responsible for poor sleep quality e.g. fatigue, job stress and 'poor' psychological work environment are commonly encountered in health care system of developing countries. Sleep quality amongst physicians of developing countries has not been estimated. Our aim was to assess the sleep quality and sleepiness among Pakistani physicians.
Methods: Consenting physicians who were practicing at various University hospitals and clinics in Karachi, Pakistan were administered Pittsburgh sleep quality index (PSQI), Epworth Sleepiness Scale (ESS) and Stanford Sleepiness Scale (SSS) questionnaires to assess their sleep quality, level of daytime sleepiness and degree of sleepiness or restlessness at a particular point of time respectively.
Results: 334 physicians participated in this study. Mean age was 30.4 (± 9.17) years of which 59.5 % were females. 123(36.8%) physicians were „poor sleepers“ (PSQI score > 5) of which 68.2% were females. Poor sleepers when compared to normal sleepers had a lower mean SSS score 2.15 (± 1.18) vs. 1.89 (± 1.13); (p<0.05), lower total sleep time 5.33 (± 1.21) vs. 6.25 (± 1.24) hours; (p<0.05) and higher sleep latency 30.2(± 22.12) vs. 16.3 (± 11.28) minutes; (p<0.05) respectively. Abnormal ESS score (ESSX05;10) was present in 35 % of poor sleepers in comparison to 23% of normal sleepers.
Conclusion: Poor sleep quality is highly prevalent among Pakistani physicians especially female. It is associated with inadequate sleep and EDS. Emphasis should be placed on adequate sleep hygiene and education.

Prevalence of obstructive sleep apnea (OSA) and its association with Excessive Day time Sleepiness (EDS) and Poor Sleep Quality (PSQ) among Pakistani Physicians

ESC-ID: 1018
Authors: Surani A, Surani S, Zahid S, Surani AA, Khaliqdina SJ, Khaliqdina SAJ
Country: Pakistan
University: Dow University of Health Sciences, Department: Medicine

Aim: OSA is a common breathing disorder with a prevalence ranging from 2.1 % to 7.5%. OSA has been associated with EDS and poor sleep quality which may lead to decrease in work productivity, cognitive impairment and consequent increase in chances of errors by the physicians. Berlin Questionnaire (BQ) is a validated tool for screening for OSA in primary care setting. Aim of this study was to assess the prevalence of OSA among Pakistani physicians using the BQ, and correlate it with EDS and sleep quality.
Methods: We administered the BQ to physicians practicing at various University hospitals and clinics in Karachi, Pakistan. In addition the physicians were administered the Epworth Sleepiness Scale (ESS) and Pittsburgh Sleep Quality Index (PSQI) questionnaires to assess EDS and sleep quality respectively.
Results: 348 physicians participated in this study. Mean age was 30.92 (± 9.5) and 41.09% were males. 30 (8.62%) out of 348 physicians were in high risk group for OSA on BQ of which 63.3% were males. Risk for OSA increased upto 50 years of age. Obesity (BMI ≥ 30) was strongly associated with high risk BQ scores with significant proportion of obese individuals (60%) were classified as high risk group. High risk individuals also displayed an increasing prevalence of self reported snoring and non refreshing sleep. No correlations were seen between abnormal ESS (≥10) and PSQI (>5) and high risk group for OSA.
Conclusion: Based on BQ there is a very high prevalence of OSA among Pakistani physicians. Obesity, increasing age and male gender were strong predictors for high risk for OSA. EDS and poor sleep quality were not correlated with high risk BQ scores regardless of snoring and non refreshing sleep. Further controlled trials are needed to assess EDS and sleep quality and its association with OSA.

Capillary and arterialized blood gas analysis - an underestimated tool in monitoring respiratory insufficiency

ESC-ID: 1033
Authors: Ryba A, Gillert M, Rogalska Z, Olszok J, Chodorowski L, Chrzanowska K
Country: Poland
University: Wrodow Medical University, Department: Department of Internal Diseases, Geriatrics and Allergology

Introduction: Despite a constant development of non-invasive methods of monitoring patients with respiratory insufficiency, arterial blood gas analysis is still considered to be „the gold standard" for evaluating pulmonary gas exchange. Arterial puncturing is a painful and time-consuming procedure employing highly qualified stuff. It also might result in some side-effects, like artery rupture, aneurysm, haemorrhage or local ischemia. The risk of complication is increased with repeated puncturing or artery catheterisation. Capillary and arterialised blood sampling are procedures less invasive and simpler to perform, but their reliability is questionable.
Aim: Estimate the reliability of capillary and arterialized blood gases analysis in comparison to arterial blood gases analysis.
Materials and methods: The investigated group consisted of 221 participants (122 males and 99 females, aged 21-93 years, mean age of 62,5) including in-hospital patients and healthy volunteers. In each participant the radial artery was punctured with 0,4x13 mm needle (arterial sample). Simultaneously blood samples were obtained from side of the finger pulp either without warming (capillary sample) or after warming in a water bath (42-45oC) within 15 minutes (arterialized sample) or both of them. Altogether, 296 pairs of samples have been collected: 259 arterio-capillary and 37 arterio-arterialized ones. Additionally, saturation using pulsoxymetry was checked in 30 cases. A Bland-Altman method was employed to assess an agreement between the used methods of clinical measurements. It bases on mean difference between results from the used methods (MD), standard deviation (SD), upper limit of agreement (ULA) = MD+S2D and lower limit of agreement (LLA) = MD-2SD.
Results: The capillary versus arterial MD of pH, pCO2, pO2 and SatO2 were: -0,003; -0,585; 16,791; 4,022, respectively; the ULA and LLA were: 0,063-(0,069); 5,314-(-6,485); 47,379-(-13,797); 17,951-(-9,906), respectively. The arterialized versus arterial MD were: -0,0003; -1,235; 26,684; 3,330; the ULA and LLA were: 0,043-(-0,044); 5,575-(-8,045); 98,815-(-45,448); 9,203-(-2,544), respectively. With a decrees of pO2, the arterio-capillary and arterio-arterialized differences diminished, but were not small enough to use the methods interchangeably. We confirmed a good correlation of haemoglobin saturation measured in arterial blood and with pulsoximetry (MD = 1,333; ULA = 5,055 and LLA = -2,789).
Conclusions: Capillary and arterialized blood values of pH and pCO2 could successfully substitute arterial blood analysis, on the contrary to pO2. Capillary or arterialized blood gas measurements together with pulsoximetry seem to be a reliable, non-invasive monitoring of pulmonary gas exchange.

Allergy to fungal allegens in patients with bronchial asthma- study of 336 cases

ESC-ID: 1199
Authors: Ukleja N, Sokolowski L, Gawronska-Ukleja E, Bartuzi Z
Country: Poland
University: Collegum Medicum in Bydgoszcz, Nicolaus Copernicus University in Torun , Department: Allergology, Immunology and Internal Medicine

Introduction: Allergy to Alternaria alternata is considered an independent risk factor of severe asthma. Observations show a correlation between spores concentration in air and intensification of asthma symptoms up to deaths caused by status asthmaticus. But is allergy to Alternaria in any way different then allergy to other fungal allergens?
The aim: Establishing the frequency of allergy to Alternaria alternate, Cladosporium and Aspergillus in patients with bronchial asthma, and finding a correlation

between severness of asthma and frequency of allergy to these fungi.
Material and Methods: The research was carried out in 336 patients (190F and 146M) aged 12-64 treated in the Outpatients Clinic of Allergic Diseases. Every patient was interviewed for allergy history using a questionnaire with full anonymity of patients. Every patient had: 1. Spirometry at rest 2. Bronchodilatatory test 3. In same cases spirometry with histamine provocation 4. Skin-Prick test to Alternaria alternate, Cladosporium, Aspergillus. 5. We estimated total and specific IgE in 78 cases.
Results: All 336 patients suffered from bronchial asthma 169 patients (50,3%) from mild asthma, 88 (26,19%) with moderate asthma and 79 (23,51%) had FEV1 below 60% of norm. In 213 cases (63,4%) the family history was positive. Positive skin prick test to Alternaria alternata in 32 cases (9,52%), Cladosporium in 26 cases (7,74%), Aspergillus (8,63%). In patients with mild asthma positive skin prick tests to Alternaria allergens in 16 cases (9,47%), in patients with moderate asthma positive skin prick tests in 10 cases (11,36%). In severe asthma positive skin prick tests in 6 patients (7,59%). In patients with mild asthma positive skin prick tests to Cladosporium allergens in 13 cases (7,69%), in patients with moderate asthma positive skin prick tests in 9 cases (10,23%). In severe asthma positive skin prick tests in 4 patients (5,06%). In patients with mild asthma positive skin prick tests to Aspergillus allergens in 14 cases (8,28%%), in patients with moderate asthma positive skin prick tests in 11 cases (12,5%). In severe asthma positive skin prick tests in 4 patients (5,06%). There was no correcation between severness of asthma and allergy to fungal allergens, but what is interesting when we considered the age, when patient was diagnosed for asthma we found a correlation with positive skin prick test to Alternaria (-0,27), but no such correlation for other fungal allergens (Cladosporium -0,087, Aspergillus 0,033). It it possible to visualize it on the following example: In patients, who have been diagnosed for asthma before 40 only 5,66% (6 patients) had a positive skin prick test for alternaria. When they were diagnosed between 25-40, 7,01% (8) had positive skin test, and when patient was diagnosed below 25, 15,52% (18) had a positive skin prick test.
Conclusions: In our research there is no obvious correlation between severness of asthma and allergy to Alternaria alternate, Cladosporium or Aspergillus, but there is correlation between age when patient is diagnosed for asthma and positive skin prick test for Alternaria alternata.

The evaluation of metabolic syndrome's components influence on clinical-laboratory indices in patients with bronchial asthma combined with metabolic syndrome

ESC-ID: 1205
Authors: Mygovych V
Country: Ukraine
University: Ivano-Frankivsk National Medical University , Department: internal medicine

Globally, there is an epidemic of metabolic syndrome (MS) with more than 300 million adults worldwide. Currently, the prevalence of asthma has experienced a similar dramatic increase, with rates being nearly 2.5 times greater today than they were 20 years ago. Nowadays, problems connected with diagnostics and treatment of combined lesions of different systems of a human organism are of a great scientific interest. Study of comorbid diseases manifestations contributes to discovery of the disease development mechanisms and elaboration of pathogenetically stipulated treatment. Aim. The aim of our research was to study influence of metabolic syndrome's (MS) components on clinical-laboratory indices in patients with bronchial asthma (BA) combined with components of MS and evaluate influence of the basic treatment of BA on the mentioned disorders.
Methods and materials: To achieve this aim 43 patients with isolated BA (severe and mild-moderate) and 46 patients with BA associated with MS have been examined. The severity of BA was graded according to GINA 2007. During hospitalization and 6 months afterwards the symptoms and signs, results of physical examinations (weight, height, BMI), spirometry, lipid fractions (enzyme method), glycaemia (GODPAP), hyperuricaemia (RIA), C-reactive protein (CRP) have been determined in patients 12 h fasting blood samples. Ambulatory blood pressure monitoring (ABPM) was performed also in all patients. Data have been processed statistically and then analyzed.
Results: Compared with subjects without MS, patients with asthma combined with MS components were more likely to report continuous symptoms (OR 1.75, 95% CI 1.18 to 2.65), miss more work days (OR 1.25, 95% CI 1.01 to 1.82), use short acting beta agonists (OR 1.38, 95% CI 1.09 to 1.78), use inhaled corticosteroids (OR 1.34, 95% CI 1.01 to 1.79) and use any controller medication according to GINA guidelines (OR 1.47, 95% CI 1.01 to 1.85). Also, respondents with BA, associated with MS were less likely to be in asthma remission (OR 0.56, 95% CI 0.38 to 0.82) and were more likely to have severe persistent asthma (OR 1.42, 95% CI 1.05 to 1.90). We found that BMI has significant effects on all of the lung volumes, and the greatest effects were on FRC and ERV, which occurred at BMI values < 30 kg/m2.
Conclusion: After analysis of the data we can conclud that association of BA with components of MS is prognostically unfavourable. Patients with combined pathology had more severe flow of asthma that was poorely controlled. In these patients tendency to worsening of all metabolic indices, increase of arterial blood pressure and worsening of external breathing compared to patients with isolated BA was observed. We registered insufficient effect of the basic treatment of BA in these patients. On the basis of these findings, overweight and obesity seem to be significant risk factors for asthma, and if they can be considered to be modifiable risk factors, interventions that effect weight loss could be associated with a decrease in asthma incidence. Basic medicines also negatively influence the indices of hydrocarbon and purine metabolism. Therefore, we think it is very promising to include medicines that except bronchodilating effect have also pleyotropic properties – antioxidant, antiaterogenic, metabolic, antiinflammatory.

Specific immunotherapy as a method of asthma control achievement

ESC-ID: 1385
Authors: Filonenko K, Gavrylov A, Pobedonna T
Country: Ukraine
University: Lupansk State Medical University, Department: Internal Medicine 3

Introduction: The pathogenetic basis of the method of specific immunotherapy (SIT) that is used in the treatment of atopic BA, is switching the immune response from Th-1 to Th-2. That means that immunotherapy attenuates T-cell-mediated airway inflammation by down-modulating Th2 and inducing Th1 differentiation. SIT improves clinical symptoms and non-specific airway hyperresponsiveness in asthma, and decreases drug requirements.Aim of the work: To study the efficacy of SIT and possibility of the achieving and maintenance asthma control in patients with bronchial asthma.
Material and methods: We studied 87 patients with intermittent and mild persistent asthma in age from 18 to 50 years. Asthma was diagnosed according to the GINA recommendations. Significant allergens were determined by skin testing in accordance with the patient's anamnestic data and determination of specific IgE. Reversibility of airway obstruction was studied by estimating forced expiratory volume in 1 second (FEV1) at baseline and 15 minutes after inhalation of Salbutamol, 400 mcg. IgE level in blood serum and investigated cytokine composition of blood serum and exhaled breath condensate were determined by immune-enzyme analysis. The results of treatment were assessed as "excellent", "good", "satisfactory", "no effect".
Results: Among all the patients 43(49%) had domestic allergy, 32(37%) - pollen, 12 (14%) - domestic and pollen allergy. Before treatment, the level of FEV1 was (83,6 + 2,8)%, IgE (418,5 +65,2) ME/ ml. After the treatment FEV1 had a tendency to improve- (87,6 ± 6,4)%, IgE decreased to (261,5 ±16, 3) IU / ml. Before the treatment in the patients could be found the elevated levels of IL-1b and IL-4 in blood serum and in EBC. The production of IL-1b after the treatment in patients decreased, but did not reach the normal values. The level of IL-4 in the end of the treatment decreased and was almost as high as among healthy people. In 6 months after begin of the SIT with domestic and in 1 year - with pollen allergens we got the following results: excellent - almost completely absent asthma attacks, could be short-term bronchospasm associated with acute respiratory viral infection, physical activity, emotions, but does not require use of bronchodilators was found in 27.6%, „good" - in 47,1%, „satisfactory" - in 19, 5%, „no effect"- in 5,8%.
Conclusion: According to our finding, we can consider that patients, who underwent SIT and improved asthma symptoms, have achieved asthma control. So, SIT can be a method of asthma control achievement.

Connection between the process of cellular metabolism and the immune cells function

ESC-ID: 1458
Authors: Pobedonna T, Chumak Y
Country: Ukraine
University: Lugansk State Medical University , Department: Internal Medicine #3

Introduction: The pathogenesis of bronchial asthma is an imbalance of T-helper cells of immune system with a prevalence of T-helper type 2. This imbalance provides the appearance of inflammatory reactions in the tracheobronchial tree with a large number of cells and mediators. Activation of the cells begins with the emergence of the changing relationship between polyunsaturated fatty acid classes of omega-3 and omega-6 , which leads to instability of cell membranes,that changes the morphology of the cells. Erythrocyte can be a model for studying the processes of change in cell membranes. The aim of the study was to examine sorptive capacity of erythrocytes membrane (SCE) and the mean corpuscular volume (MCV) in patients with bronchial asthma during exacerbation and effect of base treatment on them.
Materials and methods: We studied 91 patients during exacerbation of moderate persistent asthma. Control group consisted of 25 healthy individuals. MCV was evaluated using Sysmex-K-100 automated cell counter Results. We found that at the time of admission to allergology department SCE was in 1,8 higher than the values of the control group. After treatment (average 12-14 days) SCE significantly decreased, but did not reach the norm. MCV was in 7,1% higher than the values of healthy individuals and does not change significantly during this period.
Conclusions: On the one hand, these changes indicate of the continuing endogenous metabolic intoxication and inadequate metabolism of all cells (on the model of an erythrocyte). This has contributed to the continued activation of cells, production of proinflammatory mediators and the maintenance of inflammation. On the other hand, changes in function and morphology of erythrocytes led to abnormalities membrane fluidity and deformability of cells while passing the microcirculation and contributed to violations of microcirculation. These changes can be risk factors for developing complications of asthma.

Functional characterisation of promoter polymorphisms in the asthma associated gene uPAR

ESC-ID: 1491
Authors: Timbrell S, Stewart C, Sayers I
Country: United Kingdom
University: University of Nottingham, Department: Therapeutics and Molecular Medicine

Genetic analysis has identified the Urokinase Plasminogen Activator Receptor (uPAR) as an asthma and COPD susceptibility gene. Single Nucleotide Polymorphisms (SNPs) within the gene have been shown to be risk factors for asthma and COPD severity, as well as decline in lung function and expression of plasma uPAR. uPAR staining is greater in the airway epithelium of severe asthmatics.
Aim: This study tested the hypothesis that SNPs associat-

ed with COPD and asthma in the first 5kb of the uPAR promoter alter transcription, and therefore expression, of the uPAR gene.
Methods: 1) Bioinformatics was used to identify individuals that represent the „common" (>5%) haplotypes across the 12 SNPs genotyped in the first 5kb of the uPAR promoter. 2) Creation of a recombinant reporter vector that will measure the transcriptional effect of the variant uPAR promoter fragments. 3) Transfection of luciferase vectors into bronchial epithelial cells and use of luminescence produced by the different constructs as a measure of expression.
Results: 1) „Common" haplotypes that represented all groups across the Caucasian population were identified. 2) Designing of a cloning strategy. Failure to clone the 5kb uPAR fragments into the pCR4 vector. 3) Transfection conditions were established.
Conclusion: A method for transfecting reporter vectors into bronchial epithelial cells was validated and used to demonstrate that the transcriptional expression of the luciferase gene is upregulated in the presence of an SV40 promoter. Further work is required to modify the cloning strategy and gather functional data on uPAR transcriptional regulation in basal and stimulated conditions.

Session: Radiology

Diagnostic significance of MRCP in choledocholithiasis

ESC-ID: 537
Authors: Gusic N, Guduric N, Isakovic A, Cvetinovic N, Ivanisevic I, Maksimovic R
Country: Serbia
University: University of Belgrade, School of Medicine , Department: Radiology

Aim: Magnetic resonance cholangiopancreatography (MRCP) has been widely used for evaluation of biliary and pancreatic ducts. The aim of this study was to establish diagnostic value of MRCP in patients with choledocholithiasis.
Methods: We retrospectively analyzed 123 patients during period of 24 months who were referred to the Center for Magnetic Resonance Imaging, with clinically suspected choledocholithiasis. However, the study included 73 patients (57% men, mean age 52.3±12.1 years) who underwent both ERCP and MRCP and in whom the final diagnosis was confirmed on surgery. In all the patients standard MRI was performed, followed by the GE single shot and three dimensional sequences with MIP reconstruction.
Results: Both methods showed high sensitivity in detection of the choledocholithiasis, ERCP 89%, MRCP 86%, as well as specificity, 96% and 94%, respectively, when surgery was considered as a gold standard. Also, there was a good correlation between ERCP and MRCP, 92%. MRCP was shown to be less sensitive in detection of stones in proximal part of the biliary ducts.
Conclusion: MRCP is reliable method in assessment of patients with choledocholithiasis with the diagnostic accuracy comparable to ERCP, although less accurate in detection of proximal stones.

Visual, verbal , and auditory tasks to activate working memory network: An fMRI study

ESC-ID: 841
Authors: Fakhri M, Sikaroodi H, Oghabian MA, Maleki F
Country: Iran
University: Shahid Beheshti University of Medical Sciences, Department: Neuroscience

Objective: This study aims to show whether the neural systems for nonspatial visual, verbal and auditory working memory (WM) exhibits a functional dissociation in a functional magnetic resonance imaging (fMRI).
Methods: 33 healthy right-handed subjects performed adelayed recognition task for previously unfamiliar visual, verbal and auditory clues. Task-specific activations, as well as age related areas in all tasks were obtained using General Linear Model.
Results: Both the dorsolateral and ventrolateral prefrontal cortices are conjointly activated across all stimulus types. No stimulus-specific differences in the activation patterns of the prefrontal cortex could be demonstrated giving support to the view of an amodal prefrontal involvement during WM processes. However, extrafrontal regions specialized on feature processing and involved in the preprocessing of the stimuli were selectively activated by these different subtypes of WM. Considering age as an independent variable, we found that, with age, there is a reduction in the hemispheric specialization of cognitive function in the frontal lobes.
Conclusions: Right lateralization in prefrontal cortex, as mainstay area in WM tasks might be attributed to heavy load of the utilized tasks; a finding which was highlighted in previous studies. Bilateral activation in the frontal lobes in elderly might be related to dedifferentiation of function, deficits in function and/or functional reorganization and compensation. From a clinical standpoint, considering potential impacts of modality type and normal aging on WM processes are mandatory steps when we want to report any memory deficit in neurologic diseases.

Model-based and non model-based study of eyes open and closed: A resting state fMRI study

ESC-ID: 873
Authors: Saadipoor A, Fakhri M, Sikaroodi H, Mahdavi anari A, Riyahi alam M, Seyedahmadinejad O
Country: Iran
University: Tehran University of Medical Sciences, Department: Student' scientific reseach center

Aim: The purpose of this study is to determine brain activations in eyes open and closed rest conditions using both model-based and non model-based fMRI analyses.
Methods and Materials: A total of 30 healthy subjects were instructed to keep their eyes open or closed continuously for 3 minutes in two distinct experiments. The processed data was used for two analysis approaches; Probabilistic Independent Component analysis algorithm (PICA) and General Linear Model method (GLM). Data analysis was performed using FSL 4.0.
Results: Prefrontal cortex, Cingulate cortex, superior parietal cortex, visual and auditory systems were common activated regions in continuous eye open and closed conditions. Primary visual cortex and prefrontal areas were more active in eyes closed condition, while supplemen-

tary motor area and posterior Cingulate cortex were prominent areas in eyes open state.
Conclusions: Visual system is the mainstay in highlighting differences in eye closure and opening in resting state fMRI. Moreover, it was shown that posterior Cingulate cortex and supplementary motor area activations are different in the studied conditions. These data were extracted by both analysis strategies. The results indicate that a careful designing of rest condition is essential in interpretation of fMRI studies, since rest condition might be affected by opening or closure of the eyes.

Pre operative brain mapping with functional MRI in patient with brain tumors

ESC-ID: 923
Authors: Mahdavi A, Hooshmand S, Mahdavi A, Hadizadeh H
Country: Iran
University: Iran university of medical sciences , Department: radiology

Purpose: Functional Magnetic Resonance Imaging (fMRI) plays a significant role in pre-neurosurgical planning at present. FMRI is a possible candidate to replace invasive methods for determination of language dominant hemisphere and cortical areas associated with language and memory. We used this method to explore language and motor functions in healthy volunteers before creating standard paradigms for Persian language. In this study we use the standard protocol of language and motor brain mapping in patients harboring brain tumors.
Methods and Materials: 10 patients with brain tumor were included in this study. Each subject performed three to five language related tasks during fMRI scan and also one motor related task. These tasks include; „Word Generation“ (WG), „Object Naming“ (ON), and „Word Reading“ (WR), „Word Production“ (WP) and „Reverse Word Reading“ (RWR). They also performed thumb apposition task for activating primary sensory-motor areas. Fifteen continuous slices were acquired, and data analysis was carried out using FSL 4.1. After evaluating the individual results, the lateralization index (LI) for each subject-task was calculated and dominant hemisphere for language production reported. Also localization of language critical areas in cerebral cortex was performed and the coordinates of epicenter for language production in Broca's area was calculated. Results We found that WP, RWR, and WG activate language related areas in dominant hemisphere robustly in patients with brain tumors and can predict dominant hemisphere along with eloquent language cortices. However, ON and WR fail to delineate these activation areas optimally. In addition, the results reveal that higher activation intensities are obtained by WP in the frontal lobe including Broca's area, whereas RWR leads to the highest LI among all examined tasks. In patients harboring brain tumors precise lateralization and localization of language and motor centers was done. Also the distance of tumor margin with these eloquent areas were calculated. These results were used as a guide for neurosurgeons in surgery minimizing damages to these critical areas.
Conclusions: From neuro-linguistic points of view this study suggests that neural processing underlying Persian language is similar to other indo-European languages like Latin languages. From clinical points of view, we conclude that this type of language fMRI evaluation may be used in pre-surgical planning in Persian population. By using fMRI as a non-invasive tool we can demonstrate a precise functional brain map before surgery and use this map to prevent damage to language and motor related areas. This method of brain imaging safely lowers morbidity of neurosurgical procedures which could possibly cause severe dysphasia and motor impairment in patients suffering brain tumors.

In vitro cytotoxicity of Gd2O3 magnetic nanoparticles as contrast agents for magnetic resonance imaging

ESC-ID: 960
Authors: Riyahi Alam MS, Mahdavi Anari SA, Saadipoor A
Country: Iran
University: Kermanshah University of Medical Sciences, Department: Medicine

Aim: Magnetic nanoparticle probes are emerging as a class of novel contrast and tracking agents for medical imaging. The purpose of this study was to assess the cytotoxicity of polymerized gadolinium based magnetic nanoparticles.
Method: For this reason, the effects of nanoparticles on three cell lines of Malignant Melanoma, Human acute monocytic leukemia and Human glioblastoma-astrocytoma as models were evaluated for invitro cytotoxicity of magnetic nanoparticles by light microscopy, and by standard cytotoxicity assays.
Results: Our results showed the gadolinium(III) oxide(Gd2O(3)) nanoparticles with diethylene glycol polymer (DEG) coating had no significant effect on cell line models.
Coclusion: Viability results indicated that those three cell lines endure treatment with Gd2O(3) nanoparticles for a wide-ranging stage of time and it is therefore concluded that such nanomagnetic particles has potential diagnostic application for celluptake imaging by MRI on viable cells.

Relation of nitric oxide and peroxynitrite plasma levels with the volume of the diffusion weighted image lesion after stroke

ESC-ID: 968
Authors: Meshkat Razavi G, Daemi Attaran P, Minoo P, Orandi A
Country: Iran
University: Shaheed Beheshti Medical University , Department: School of Medicine

Introduction: There is evidence that inflammatory and excitotoxic mechanisms mediate neurologic deterioration (ND) after cerebral stroke. Reactive oxygen species are important mediators of ischemic tissue injury. In this study investigated relation of Reactive oxygen species with outcome and volume the diffusion weighted image (DWI) lesion after acute cerebrovascular stroke.
Methods: MRI was performed on admission (T0) and at 3 days (T1) in 189 patients with acute cerebrovascular infarction of < 12 hours' duration. DWI lesion enlargement was calculated as the absolute difference between volumes on T0 and T1 of evolution. NIH Stroke Scale was

scored at the same intervals. ND was defined as an increase >/=4 points within the 72 hours. Nitric oxide (NO) and Peroxynitrite (ONOO-) levels (as Reactive oxygen species) were analyzed in blood samples obtained on admission.
Results: DWI lesion growth was found in 136 (71%) patients (median increase 37 [6.5, 83.4] cm (2.9)) and ND occurred in 50 (26.4%) patients. Baseline NO (r = -0.34), ONOO (r = 0.70), showed a significant correlation with the diffusion weighted image lesion growth (all p < 0.001). After adjustment for potential confounders, ONOO- level was associated with diffusion weighted image lesion enlargement at 3 days (beta = 0.20; SD = 0.06; p = 0.003).
Conclusions: Production of reactive oxygen species after cerebrovascular stroke may play a role as mediators of lesion enlargement in cerebral ischemia. Plasma ONOO- concentration is one of the independent predictor factor of lesion enlargement in the acute phase of cerebrovascular stroke.

Assessment of thermography as breast cancer screening technique

ESC-ID: 973
Authors: Petrusaite A, Svitojute E, Veikutis V
Country: Lithuania
University: Kannas University, Department: Department of Biomedical Research

Breast cancer is the most common in women after skin cancer, representing 16% of all female cancers. At present, the results of breast cancer diagnostic methods can be opposite to each other. Thermography is a new, passive, non-contact imaging technique, which can be repeated at short intervals with no hazard to the patient and is totally painless. Thermography as breast cancer screening technique enables to see the temperature pattern and to look for abnormality.
Aim: To determine suitability of thermography, as breast cancer screening technique.To compare thermography, as breast cancer screening technique, with routine diagnostic methods. To assess what factors influences the accuracy of thermography.
Materials and Methods: A prospective study was performed. Patients were divided in study and control groups. Study group - 76 patients with breast cancer, who were hospitalized for the surgery. Thermography procedure was performed using thermal camera FLIR A20 a day before operation. Thermograms were analysed according to a specially created protocol by 3 researchers, independently from each other. Results were compared with data of physical examination, mammography, sonography and MRI. Control group - 32 women, who came for the prophylactic breast examination. Statistical data analysis was processed with SPSS 17.0 software. Results were kept statistically significant when p<0,05.
Results: Out of 76 patients, 30 (39,5% had I stage, 18 (23,7%) - IIA, 14 (18,4%) - IIB, 4 (5,3%) IIIA, 4 (5,3%) - IIIB stage breast cancer. To 6 (7,9%) patients breast cancer stage was not defined. Thermograms results were compared with patient's case records. In 62 (81,6%) cases, breast tumor side was indicated correctly comparing thermography and rutinic diagnostics. Evaluation of tumor localisation was the same in 16 (21,1%) cases, assesment of changes in lymphatic nodes - in 8 (10,5%) cases. The accuracy of tumor side evaluation by thermography significantly depends on the patient's age (p=0,011). Breast size, dominant tissue and stage of breast cancer have no influence on accuracy of thermography (p>0,05). Evalutation of tumor side (p>=0,005) and localisation (p=0,045) significantly depends on tumor size.
Conclusions: Thermography is a suitable diagnostic method for breast cancer screening. Cancer stage, breast size and dominant tissue have no influence on accuracy of thermography procedure. Big tumors can be more easily seen in the thermogram.

Detection of inflammatory changes in the abdomen using antigranulocyte antibodies

ESC-ID: 1180
Authors: Stojkovic M, Storebra T, Stojanovic M
Country: Serbia
University: School of medicine, Belgrade University , Department: Radiology and Nuclear medicine

Introduction: Infections of the gastrointestinal tract are a major problem both in diagnosis and in therapy. The treatment of these infections requires the detection and localization in early stage disease, in order to perform an effective drainage and appropriate antibiotic therapy. Objective: The aim of our study was to detect inflammatory changes in the abdomen using 99m Tc labeled antigranulocyte antibodies.
Material and methods: In our study participated 30 patients with suspected abdominal or gastrointestinal infection. In all patients scintigraphy was done, with intravenous injection of 370MBq, 99m Tc labeled monoclonal antibodies, BW 250/183 in the cubital vein. The study analyzed an additional scintigrams of certain regions (500 000 imp / view) and tomography (60 boxes, 60 each).
Results: Our results show that the 30 patients who participated in the study, 19 were true positive. Of 19 patients who were true positive for inflammatory / infectious diseases of the gastrointestinal tract, 12 was discovered in the early scintigrams, while the remaining 7 were discovered in late. Total 8 patients were actually negative. Sensitivity was 87%, specificity 100%, positive predictive value 100%, negative predictive value of 73% and accuracy of the methods of 90%.
Conclusion: The present results, scintigraphy 99m Tc antigranulocyte antibodies is a useful method for detection and assessment of correct localization of abdominal infection, which is very important for the timely and appropriate therapy.

Evaluation of the association between upper gastrointestinal symptoms and esophageal dilation in CT-scan findings

ESC-ID: 1278
Authors: Ghourchian S, Moosavi S, Raji H
Country: Iran
University: Iran universityof medical sciences and health services(IUMS) , Department: Medical student research commitee

Introduction: Gastroesophageal reflux disease (GERD) is usually confirmed by endoscopy and 24-hour PH monitoring. With the purpose of assisting GERD diagnosis in accordance with CT findings instead of aggressive meth-

ods, we decided to find if there is any significant relationship between the presence of air blobs in CT and GERD symptoms.
Methods: Because there was no previous study, we designed a pilot study by filling up some check lists containing symptoms of GERD. Air blobs diameter was scrutinized in esophagus. According to Schraufnagel in 2008, esophageal dilation was defined as the presence of air blob more than 10 mm in supraventricle and ventricles and >15 mm in cuts between heart and lower esophageal sphincter.
Results: The P value of the relationship between the presence of esophageal dilation in cuts between heart and lower esophageal sphincter and heartburn was 0.007 (OR=7). Also the P value of analyzing the correlation between the presence of esophageal dilation in 3 parts of esophagus and heartburn was 0.038 (OR=9.429).
Discussion: In our study, we found some significant relationship between GERD symptoms and sizes of air blobs. Also we found that blobs in supraventricle causing no sign, can create a symptom if they appear in the same size in cuts between heart and lower esophageal sphincter. As a conclusion, measuring the sizes of blobs between heart and lower esophageal sphincter is more sensitive for predicting GERD symptoms. For confirming the diagnosis of GERD with CT-scan, we designed a case control study which is currently going on.

Paradigm selection and post-processing in fMRI studies of language lateralization

ESC-ID: 1289
Authors: Tóth V, Kozak LR, Rudas G
Country: Hungary
University: Semmelweis University, Budapest , Department: MR Research Center

Introduction: Functional MRI methods are integral steps of pre-surgical workup nowadays. However, the protocols applied differ across imaging centers, and the majority of paradigms have been validated on 1.5 Tesla, while higher field scanners with better signal-to-noise ratio and spatiotemporal resolution can yield different maps. The importance of protocol validation and the establishment of normative databases is widely recognized in clinical fMRI research. Aims: We evaluated four paradigms for mapping language function in our clinical practice, and assessed the effects of post-processing on a threshold-independent method of lateralization index (LITI) calculation (Suarez et al., 2009). The robustness of lateralization definition between each paradigm was compared as a function of examination length and post-processing of the data.
Methods: 17 healthy volunteers (age: 20.4 ± 1.2, 12 females and 5 males) were examined at 3T (Philips Achieva 3T scanner, Philips Medical, Best, The Netherlands). Four language paradigms were examined: picture naming, auditory decision, synonym task, speech comprehension (block design, interleaved 24 seconds active and passive blocks, 12 repetitions). Data analysis was performed with Brain Voyager QX 1.10, Matlab and Statistica 8.0 softwares. The effect of protocol length was examined by sequentially omitting zero to eight stimulation block pairs from the end of each experiment. The effect of 3D spatial smoothing was tested with four different Gaussian kernel filters. Whole hemisphere regions of interest (ROIs) and Broca and Wernicke area ROIs were studied, the latter delineated by either Brodmann definitions or the Automated Anatomical Labeling (AAL) template. A statistical threshold independent lateralization index was estimated along the referenced article's method.
Results: The ROI definitions based on either the Brodmann or the AAL templates were found to provide highly overlapping maps and similarly robust lateralization data. Further comparisons were made using the Brodmann ROI definitions. Both the main effect of „Experiment“ and the „Dropped blocks“ and „Smoothing“ factors were found to be highly significant ($p<0.000001$). Significant interactions between „Experiment“ and „Dropped blocks“, and „Experiment“ and „Smoothing“ ($p<0.000001$) were found. No significant interaction between „Dropped blocks“ and „Smoothing“ was found. All of the four paradigms tested were able to define language function lateralization. The speech production paradigms and the speech comprehension paradigms provided more robust LITIs in the Broca and Wernicke regions, respectively. Shorter examination length was found to decrease robustness of lateralization. Smoothing with 12 mms Gaussian kernel was providing the most robust LITIs.
Conclusion: We evaluated a novel, gross anatomy based method for ROI definition and found it to be equivalent with the traditional Brodmann area based approaches. The language paradigms used ubiquitously in clinical practice provided reproducible and robust results. Furthermore, we evaluated a novel approach in lateralization calculation independent of the individually chosen statistical threshold, and found that this methodology produces robust results comparable with previous data in literature. We examined the effect of examination length and post-processing and found that both have a considerable effect on LITI. Longer paradigms provide more robust results. We also demonstrated that post-processing may have a more important effect on data gain than examination length. This might suggest that in clinical practice, thorough post-processing might allow for shorter examination time; further investigations are needed to assess optimal methods for this.

Epicardial halo phenomenon: an old radiology sign that may improve safety of pericardiocentesis

ESC-ID: 1341
Authors: Jokovic Z, Simeunovic D, Kontic K, Maksimovic A, Gvozdenovic R, Seferovic PM, Maisch B, Ristic AD.
Country: Serbia
University: Belgrade University School of Medicine, Belgrade, Serbia , Department: Departement of Cardiology

Introduction: Epicardial halo phenomenon is a radiological sign depicting the borders of the heart shadow. This sign is frequently present in patients with pericardial effusion and therefore potentially useful for the guidance of pericardiocentesis. However, its intensity may be variable in various patients and its clinical applicability as the marker of safety zone for pericardiocentesis is still controversial.
Aim: The aim of this study was to investigate the prevalence of the epicardial halo phenomenon as the marker of the safety zone for pericardiocentesis and placement of

pericardial drainage catheter. Furthermore, we have analyzed impact of the patient-related features on the intensity of the halo sign including age, heart rate, body-mass index (BMI), size of the pericardial effusion measured by echocardiography and volume obtained by pericardiocentesis. Presence of tachycardia, low QRS voltage, and electrical alternans in the electrocardiogram were also evaluated in patients with large pericardial effusion and correlated with the epicardial halo phenomenon.

Methods: Our study population included 62 patients who underwent posterior-anterior (PA) and lateral fluoroscopy (50-150 kV, monoplane, flat-panel Siemens AXIOM Artis cardiac catheterization laboratory) as a part of pericardiocentesis or cardiac catheterization procedure. The group of patients with pericardial effusion undergoing fluoroscopy guided pericardiocentesis comprised 31 patient (35.5% males, mean age 54.0±15.6 years, mean volume of pericardial effusion 794.3±285.9 ml) and coronary artery disease group included 31 patient undergoing coronary angiography or elective percutaneous coronary intervention, with no pericardial effusion (93.5% males, mean age 63.4±9.1 years). All patients underwent comprehensive echocardiography examination immediately before the pericardiocentesis or cardiac catheterization with the focus on the presence and diastolic maximal and minimal size of pericardial effusion. Etiology of pericardial disease included neoplastic pericarditis in 10/31 patients (32.2%), tuberculous pericarditis in 2/31 patient (6.4%), and idiopathic pericarditis in 19/31 (61.3%). Three graders evaluated the sign in PA/lateral fluoroscopy as: absent - grade 0, indistinct - 0.5, clear - 1, or intensive - 2.

Results: The intensity of the halo phenomenon was significantly higher in patients with pericardial effusion in comparison to control group with coronary disease (median sum of grades in PA-lateral view: 3-4 vs. 1-2)($p<0.01$). The sign correlated well with HR, low QRS voltage, presence of electrical alternans, and pericardial effusion diastolic minimum and maximum in echocardiography in both angiographic views. Correlation with BMI and age was significant only in the lateral view and with PE volume only in the PA view. The sensitivity of the sign for the detection of pericardial effusion was 100% in PA and 99.0% in lateral views. As expected, specificity of the sign was rather low 58.6% in PA view, and 40.4 in the lateral view.

Conclusion: The epicardial halo sign was highly sensitive for the detection of pericardial and correlated well in at least one angiographic projection with the volume of pericardial effusion, HR, age, BMI, and pericardial effusion size in echocardiography. Therefore the sign is almost universally present in patients with large pericardial effusion and intensive enough to be used for fluoroscopic guidance of pericardiocentesis as a demarcation line for the „forbidden territory“ for the puncturing needle.

The role of sonographic methods in diagnosing carpal tunnel syndrome

ESC-ID: 1461
Authors: Rahmani M, Ghasemi AR, Kooraki S, Shakiba M, Habibollahi P
Country: Iran
University: Tehran university of medical sciences , Department: Medicine

Introduction: Carpal tunnel syndrome (CTS) is a common peripheral neuropathy. Electromyography (EMG) is considered the gold standard for diagnosis. Ultrasound has emerged as a promising tool in diagnosing CTS. Several methods have been used, but there is a considerable discrepancy among results and a standard method has not been established. The aim of this study was to assess the accuracy of different sonographic methods to predict CTS and its severity in comparison with EMG.

Methods: Subjects with clinical and EMG findings in favor of primary CTS were enrolled as CTS group. Volunteers with no findings suggestive for CTS were regarded as control group. All subjects were examined by means of high-resolution ultrasound. Nerve edema, cross-sectional area of the median nerve at wrist level (CSA) and wrist-to-forearm area ratio (WFR) were calculated. Color Doppler sonogram was used to detect the presence of nerve hypervascularity. Statistical analysis were done with SPSS 11.0.

Results: Nerve edema was greater in CTS than control group (77.6% vs. 17.1%, $p<0.005$). The mean CSA was greater in the CTS group (14.50 ±5.07 mm^2 [8-38] in 67 CTS vs. 8.31± 1.21 mm^2 [6-11] in 41 control; $p< 0.0005$). Mean WFR was also higher in the CTS group(2.48 ± 0.99 [1.50-6.40]) vs. 1.35 ± 0.23 [0.86-1.80]) ($p< 0.0005$). Of 66 CTS cases, 63(95.5%) had hypervascularity; while only 4/41 of controls(9.8%) showed this pattern. Median nerve CSA was powerful to distinguish between mild and moderate-to-severe CTS.

Conclusion: This study showed that high-resolution ultrasound and color Doppler sonography could predict CTS by means of several methods. Hypervascularity of the nerve was the most accurate criteria, while echogenicity pattern, CSA and WFR were reliable means. We recommend using different cutoff points for CSA and WFR in different clinical situations to rule in or rule out CTS. In our study, CSA values of 8.5 and 10.5 mm^2; were powerful to respectively rule out and rule in CTS. WFR values of 1.53 and 1.75 were useful for recognizing subjects without and with CTS, respectively.

Session: Rheumatology / Immunology

Prevalence and risk factors for low bone mineral density in systemic sclerosis patients

ESC-ID: 478
Authors: Zdraljevic N, Randjelovic M, Stojiljkovic M
Country: Serbia
University: University of Nis , Department: School of Medicine

Introduction: Systemic sclerosis (SSc) is a rare chronic disease of unknown cause characterized by diffuse fibrosis, degenerative changes, and vascular abnormalities in the skin, joints, and internal organs. Besides the standard risk factors for osteoporosis (menopause, age), inflammation can cause reduction of bone mineral density, as well as the use of immunosuppressive and corticosteroid therapy. Objectives: To analyze the results of bone densitometry in patients with SSc, determining the frequency of osteoporosis and osteopenia in patients with different subtypes (diffuse-dSSc, limited-lSSc and CREST, Overlap), evaluating the prognostic factors for low bone mineral density (BMD), such as age, menopause, SSc clinical variant, previous use of corticosteroids and antibody subset, as well as to determine the course of bone loss progression in these patients.
Material and methods: The study included 52 patients (mean age 53.12±10.25, divided into three subgroups: younger than 50 years, aged 51-60, older than 60), 3 male and 49 female (16 premenopausal and 33 menopausal) affected with SSc (limited, diffuse, CREST and Overlap), 28 (53.85%) were receiving corticosteroids. All the patients underwent the clinical examination and lab diagnostics, including detection of specific antibodies for SSc (ANA, ACA and anti Scl 70). The bone densitometry was measured on the lumbar (L1-L4) part of the spine, using dual energy X-ray absorptiometry (Lunar DPX, Lunar Corp.).
Results: Twenty two SSc patients (42,30%) presented osteopenia (Tscore between -1 and -2.5), and 10 (19,23%) densitometric osteoporosis (Tscore<-2.5). It was shown that Overlap group had significantly lower Tscore than lSSc and CREST group (-2.125 vs. -0.690 and -1.161, $p<0.05$). The difference between other subtype groups was not found. The group aged <50 years had significantly higher Tscore than 51-60 years group and >60 years old group (-0.713 vs. -1.732 and -1.691, $p<0.05$). It was also shown, as expected, that SSc women both in early (up to 10 years) and late menopause (more than 10 years) have significantly lower Tscore than premenopausal SSc women (-1.604 and -1.558 vs. -0.289, $p<0.05$). There is no difference in Tscore between two menopausal groups. The patients who were treated with corticosteroids both in lower (up to 10mg) and higher dose (more than 10mg) showed significantly lower Tscore than those who were not (-1.534 and -1.660 vs. -0.635, $p<0.05$). The dose of corticosteroids does not have an impact on bone density. Thirty three patients with ANA+ have significantly lower Tscore than 19 ANA- patients (-1.285 vs. -0.389, $p<0.05$). Surprisingly, 12 patients with ACA+ antibodies showed significantly lower Tscore than 8 anti Scl 70+ patients (-1.502 vs. -0.0875, $p<0.05$). During the period of the disease, despite the intensive therapy for SSc and osteoporosis, significant progression of bone loss is observed among the participants of the study (the first measurement -1.154 vs. the second measurement -1.525, $p<0.05$).
Conclusion: The significant reduction of bone mineral density is observed among the SSc patients. This reduction is associated to age, menopause, subtype and duration of the disease, the antibody subset and use of corticosteroids.

Influence of nicotine on the number of antibody productive cells and eosinophil granulocytes

ESC-ID: 484
Authors: Vasilic Z, Maslovski B
Country: Bosnia-Herzegovina
University: University of East Sarajevo , Department: Faculty of Medicine

Introduction: Quantitatively, nicotine represents the most important alcaloide of tobacco. Primarily, it comes into our organism by inhaling tobacco smoke. Asymptomatically active smokers have more leucocytes in peripheral blood in comparison with non-smokers. This increase happens dominantly due to the increase in the number of lymphocytes, eosinophil granulocytes and neutrophil granulocytes. Nicotine expresses direct influences on different biological aims by means of nicotine holinergic receptors (nACh) whose endogenous ligand is acetyl choline (ACh). The research carried out up till now show that the use of nicotine can modulate certain parametres of cellular and humoral immune functions.
Aim: Working on the experiment with mice, in conditions in vivo, our aim was to establish : a. Whether nicotine causes changes of the number of antibody-productive cells, as well as whether they are dosage-dependent? b. Whether nicotine influences the number of eosinophil granulocytes in mouse's spleen?
Method: Our experiments were carried out on mice (Mus musculus) type BALB/c. The animals were randomly divided into control and experimental group. Nicotine was applied to all animals in the period of five days, after they had been immunised with sheep erythrocytes. According to the nicotine dosage which was used, the animals were divided into three groups. We analyzed gathered information during our experiment by means of descriptive and analytic statistic methods.
Results: Results of our researches show that nicotine in the dosage of 1 and 2 mg/kg per weight daily, which was applied in the period of five days after the immunisation with sheep erythrocytes, brought to highly statistically important, i.e. statistically important decrease in the number of antibody-productive cells. Also, nicotine in the dosage of 1 mg/kg daily, which was applied in the period of five days after the immunisation with sheep erithrocytes, brought to statistically important decrease in the number of eosinophil granulocytes.
Conclusion: Results of our researches show that repeated use of nicotine shows supressive effect on T dependent humoral primary immune response, which can be seen in decrease in the number of antibody-productive cells in mouse's spleen. Also, nicotine decreases the number of eosinophil granulocytes in mouses's spleen when

it is used after immunisation of mice with sheep erythrocytes.

Gammadelta T cells and their role in pregnancy induced improvement of rheumatoid arthritis

ESC-ID: 491
Authors: Tham M, Müller C, Portmann-Lanz B, Surbek D, Ostensen M, Villiger PM, Förger F
Country: Switzerland
University: University Bern , Department: Dep. of Rheumatology, Clin. Immu. & Allerg.

During pregnancy, gammadelta T cells expand at the feto-maternal interface where they induce a tolerogenic milieu. Patients with rheumatoid arthritis (RA) experience a spontaneous improvement of their disease during pregnancy and an aggravation in the post-partum period. To figure out the role of gammadelta T cells in pregnancy induced remission of RA patients, numerical and functional changes of gammadelta T cells in the context of different pregnancy factors are analyzed.
Methods: Numerical and functional alterations of circulating gammadelta T cells were investigated in pregnant and non-pregnant RA patients as well as in healthy women. The frequency and the intracellular cytokine profile of freshly isolated gammadelta T cells were analyzed by flow cytometry. The cytotoxic function was measured by chromium release assay. Phenotypic and functional changes of gammadelta T cells were investigated upon stimulation with pregnancy serum, hormones and cytotrophoblast supernatant.
Results: Ex vivo Vgamma9 Vdelta2 T cells (Vd2) of patients and healthy controls showed a reduced proportion of Interferon gamma (IFN-γ) positive Vd2 T cells in the third trimester versus 8 weeks post-partum. Upon stimulation with isopentenylpyrophosphate, gammadelta T cells isolated during pregnancy secreted less IFN-γ compared to those isolated in the post-partum period. Moreover, pregnancy serum reduced the expression of activating NKG2D receptor and increased the expression of the inhibitory NKG2A receptor on Vd2 T cells. Regarding cytotoxicity, both, cytotrophoblast particles and 3rd trimester serum could reduce the cytotoxic function of gammadelta T cells.
Conclusion: Pregnancy factors were able to reduce the pro-inflammatory potential of gammadelta T cells and might thereby be associated with pregnancy related disease remission of rheumatoid arthritis. Furthermore pregnancy factors are able to downregulate NKG2D positive cells and therefore reduce the NKG2D related cytotoxicity of Vd2 T cells. Taken together pregnancy factors alter the function of gammadelta T cells and might thereby contribute to the improvement of disease symptoms in patients with rheumatoid arthritis.

Comparative study of the prevalence, clinical features, sensitisation profiles and risk factors for Allergic Rhinitis between elderly and young adults in Cova da Beira

ESC-ID: 680
Authors: Ribeiro ACG, Moreira SM, Lourenco O, Fonseca M, Taborda-Barata LM
Country: Portugal
University: University of Beira Interior , Department: Health Sciences

Background: Allergic Rhinitis (AR) is the most common allergic disease worldwide. Very few studies have analysed whether the prevalence of AR decreases with age. There is also a lack of publications assessing the risk factors for AR in elderly people.
Objectives: The aim of the present study was to compare the prevalence, clinical characteristics, pattern of aeroallergen sensitisation and risk factors for AR between elderly and young adults.
Method: This was a cross-sectional study using a simple random sample. The population consisted of 2 groups of individuals from Beira Interior: one of young adults (aged between 18 and 35 years) and another of elderly individuals (aged 65 years or older). A standardised allergy and rhinitis questionnaire as well as skin prick tests (SPT) were carried out in all volunteers, except for those who answered the questionnaire by telephone. All patients signed a written informed consent and the study was approved by the Regional Health Authority Ethics Committee. Chi-square test, Mann Whitney U test and logistic regression test were used for statistical analysis. A p value less than 0.05 was considered statistically significant.
Results: Our study sample included 1460 volunteers. To date, 473 volunteers have been analysed (312 elderly (median age = 72 years; 168 females) and 161 young adults (median age = 29 years; 85 females). Both groups were paired regarding gender. The prevalence of AR was significantly lower in elderly (26.7%) than in young adult volunteers (40.6%) ($p=0.0194$; Chi-square test). For both groups, association between overall positivity of SPT and self-reported symptoms of AR was highly significant ($p<0.0001$ for elderly; $p=0.0069$ for young adults). Significant differences were observed in the sensitisation patterns between the two groups with the elderly being mostly sensitised to Dermatophagoides pteronyssinus (11.0%), Parietaria judaica (10.5%) and Olive tree (7.3%) and young adults mostly to Dermatophagoides pteronyssinus (25.7%), Dermatophagoides farinae (15.8%) and cereal pollen (16.8%). A significant association was found between AR and urban residence in the elderly group ($p=0.047$; Logistic regression).
Conclusions: Our data suggest that the prevalence of AR decreases with age and also that there may be differences in the profile of sensitisation to aeroallergens between young and elderly individuals as well as in risk factors for both groups.

Comparative study of the prevalence, clinical features, sensitisation profiles and risk factors for Bronchial Asthma between elderly and young adults in Cova da Beira Portugal

ESC-ID: 683
Authors: Moreira SM, Ribeiro ACG, Fonseca M, Lourenco O, Taborda-Barata L
Country: Portugal
University: Universidade da Beira Interior , Department: Faculdade de Ciências da Saúde

Background: Bronchial asthma is one of the most common allergic diseases worldwide. Very few studies have analysed whether the prevalence of asthma decreases with age. Therefore, the aim of the present study was to compare the prevalence, pattern of aeroallergen sensitization and clinical features of bronchial asthma between elderly and young adults. In addition, we also wanted to analyse possible risk factors for the development of asthma.
Objective: The aim of the present study was to compare the prevalence, clinical characteristics, pattern of aeroallergen sensitisation and risk factors for bronchial asthma between elderly and young adults.
Methods: This study followed a cross-sectional design. A standardised allergy and asthma questionnaire and skin prick tests (SPT) were carried out in all volunteers. The study population included two groups of individuals: elderly (aged 65 years and older) and young adults (aged between 18-35 years) from Beira Interior. The sample was selected by simple randomization, after calculating a confidence interval of 95% and an estimated error below 5%. Statistical analysis was carried out using Chi-square tests, Mann-Whitney U test, univariate regression analysis, binary logistic regression analysis and Odds Ratio. A p value less than 0.05 was considered statistically significant. All patients signed a written informed consent and the study was approved by the Regional Health Authority Ethics Committee.
Results: A total sample of 1460 volunteers was included. Thus far, we have analyzed a total of 27.6% of elderly volunteers in the Health Care Centre (median age = 73 years; 41.5% males) and 14.1% of the young group (median age = 28 years; 44.2% males). A short questionnaire was applied by telephone to 11% of the total sample. We found significant differences in the prevalence of bronchial asthma between elderly and young adults (19.7% vs 29.4%, respectively; p=0.02; Chi-square test). In addition, the prevalence of atopic bronchial asthma was also significantly lower in elderly than in young adult patients (32.1% vs 57.1%, respectively; p=0.02, Chi-square test). Both groups were mostly sensitised to Dermatophagoides pteronyssinus and Dermatophagoides farinae. Significant differences were found in terms of sensitisation to grass pollens amongst elderly and young patients (11.8% vs 70.8%, respectively; p=0.0006, Chi-square test). The majority of the asthmatic patients were sensitised to more than one allergen. Finally, differences were observed in terms of risk factors for bronchial asthma between both groups, with gender as a significant risk factor in elderly patients and concomitant rhinitis in young patients. The presence of rhinitis augmented the risk of having asthma 3.2 times, in the group of young adults.
Conclusions: Our preliminary results suggest that the prevalence of asthma is lower in elderly people, the sensitisation profile and the risk factors for this disease are different between elderly and young adult patients.

Immunohistochemical localization of calbindin in rat thymus

ESC-ID: 779
Authors: Sergeeva VE, Smorodchenko AD
Country: Germany
University: Chuvash State University , Department: Medical Biology

Calbindin (Ca-D28k) belongs to the calcium-affinity proteins family, is involved in intracellular buffering mechanism to maintain the calcium homeostasis, plays a role in modulating of apoptosis. Calbindin has been found in a broad range of tissues including diffuse neuroendocrine tissues. The macrophages of thymus are a share of APUD-system. Previously we have shown that dendritic macrophages of the thymus containing biogenic amines, express Ia antigen, monoaminoxidase, S-100 protein, have positive staining for aldehyde fuchsin. The localization of Ca-D28k in thymus has not been studied well, and its exact cellular distribution in the thymus is unknown.The aim of this study was to investigate by immunohistochemistry the population of dendritic macrophages of thymus for Ca-D28k expression at physiological conditions.In our experiments we used adult male rats (n=30). Thymic glands were removed from deep anesthetized animals and fixed in 4% formaldehyde. Cryosections (15 μm thick) were stained with hematoxilin-eosin. Detection of calcium-binding protein was performed with rabbite anti-calbindin D-28k antibody. The distribution and morphology of Ca-D28k positive macrophages were evaluated by light microscopy (MicroMed-5) and software SigmaScan Pro 5.0. Microscopic analysis shows the presence of Ca-D28k positive cells in all regions of rat thymic lobules with predominantly localization in cortico-medullar zone. In subcapsular and deep cortical zones there were detected only single calbindin containing cells. Morphologically Ca-D28k positive macrophages have different shapes (oval, round or dendritic) and exhibited relatively homogenic calbindin-immunoreactivity of cytoplasm and cytomembrane. Morphometrical analysis revealed Ca-D28k positive cells with different sizes: small (6,4-11,3 μm^2), middle (11,4-32,6 μm^2), big (bigger than 32,6 μm^2). Interestingly, this population of cells has the same morphology and localization with previously described neuroendocrine dendritic macrophages of thymus.Taken together, our observations clearly showed that Calbindin-D28 detected in antigen-presenting dendritic macrophages of thymus. Calbindin-D28 can be a useful marker for identification of this cell population at different physiological and pathological conditions, including cancer.

Tumor-associated fibroblasts: Key players in cancer development

ESC-ID: 803
Authors: Preunca B, Thakur N, Ilie R, Bobilca V, Parikh H, Mosteoru S, Paunescu V, Bojin F, Tatu C, Gavriliuc O
Country: Romania
University: VB University of Medicine and Pharmacy, Timisoara , Department: Immunology

Introduction: The complex cellular tumor (micro)environment comprises immunocompetent and inflammatory cells, endothelial cells and fibroblasts. All of these cell types may critically influence the multi-step process of carcinogenesis and malignant phenotype. Fibroblasts are known to take part in immune reaction during tissue damage and injury by modulating local cellular and cytokine milieu, adjusting the kinetics and components of the inflammatory infiltrate, and by modulating the functional status of the immunocompetent cells.
Aim: The main purpose of our study was investigation of tumor-associated fibroblasts' (TAFs) phenotype and function, and to find out to what extent they become activated within tumor environment and secrete different paracrine and autocrine factors, which further play a role in tumorigenesis.
Material and methods: Human TAFs were isolated from breast cancer surgical pieces using enzymatic digestion, cultivated and expanded in vitro as monolayer cell culture. When cell population was pure, the trilineage differentiation potential (to adipocytes, chondrocytes, and osteoblasts) was assessed under appropriate differentiation medium. Supernatants of cell cultures at different passages were collected and presence of IL-4, IL-10, IL-13, TGF-α1, TNF-α, INF-α and VEGF was detected by ELISA method. Specific mouse anti-human fluorochrome-conjugated antibodies identified in flow-cytometric analysis surface markers of TAFs, such as CD14, CD117, CD90, CD106, CD44, CD29, CD73, HLA-DR, CXCR4. expression of cytoskeleton and extracellular matrix proteins was revealed by immunocytochemistry (vimentin, α-smooth muscle actin). Breast cancer isolated tumor cells and tumor cell lines (SK-BR3, MDA-MB231, and MDA-MB468) were tested for their ability to adhere to the TAFs substrate in flowchamber when the shear stress generated was increasing from 0.35 to 15 dyne/cm2. Stimulation of TAFs used endogenous secretory factors for flowchamber assays.
Results: Secretion of cytokines with direct immunosuppressive effect, such as IL-10 and IL-13, and other cytokines, IL-4 and TNF-α, was increased in cultured TAFs at all passages. Enhanced production of TGF-α1 by TAFs may also be a critical factor in tumor homeostasis. expression of MHC class II molecules (HLA-DR) on activated TAFs contribute to an additional level of immunosuppression and pro-tumoral effect. High level of VEGF production suggests that TAFs provide not only structural support, but also pro-angiogenetic molecules for tumor vascularization. α-smooth muscle actin expression in fibroblasts is variable and associated with an activated status. Adherence of tumor cells on TAFs substrate was increased when stimulated with VEGF for all values of shear stress, while IL-4 induced increased adherence only for shear stresses less than 8 dyne/cm2.
Conclusion: The complex network of effects that TAFs bring about (by enhanced expression of various immune cell deactivating/suppressing factors and neoangiogenesis molecules), should stimulate consideration of TAFs-based therapeutic designs.

Detection of folate receptor-β positive macrophages in rheumatoid arthritis

ESC-ID: 963
Authors: Teteloshvili N, Westra J, Bijl M
Country: The Netherlands
University: University of Groningen , Department: Rheumatology and Clinical Immunology

Background: In patients with rheumatoid arthritis (RA) the prevalence of cardiovascular disease (CVD) is increased. Atherosclerosis underlies CVD and results in formation of unstable plaques. One of the most prominent factors in the unstable plaque seems to be the presence of activated macrophages, which express an increased level of folate-receptor beta (FR-beta). Recently it has been shown that FR-beta positive macrophages can be detected in synovial fluid of RA patients and also in synovial tissue. Research in our lab showed that by imaging atherosclerotic plaques in vitro with folate-FITC, hot-spots with high uptake of folate-FITC could be detected. In these hotspots many macrophages (CD68+) were present and expression of CD68 mRNA correlated positively with FR-beta mRNA expression. Whether FR-beta positive monocytes or monocyte- derived macrophages (MDM) are present in the peripheral blood of RA patients is unknown.
Objective: To investigate whether FR-beta expression can be found in monocytes and MDM in peripheral blood of RA patients compared to healthy controls (HC). Moreover, this study aimed to define the phenotype of the macrophages expressing FR-beta.
Patients and Methods: 21 RA patients were recruited in the study and compared to 7 sex and age matched healthy controls. Monocytes/MDM from synovial fluid and also from peripheral blood of RA patients and HC's were isolated and the isolated cells were analyzed for expression of FR-beta by Western blotting and qRT-PCR. FR-beta expression was also measured with folate-FITC by flow cytometry. Other cell markers were used to further characterize these cells (CD14, CD68). Phenotype of the FR-beta expressing macrophages was further defined by the gene expression profile (IL-6, IL-10, mannose receptor, IL-23) of the M1 and M2 macrophages cultured in vitro.
Results: FR-beta was detected on the cell surface and in cell lysates of monocytes/MDM in synovial fluid of RA patients. Furthermore, folate-FITC binding was specific to the folate receptor, as demonstrated by inhibition of binding with folic acid. expression of FR-beta was increased in early non treated RA patients versus HC's. FR-beta expression was preferentially increased in M2 macrophages, but it was detected in both M1 and M2 macrophage populations.
Conclusion: FR-beta can be detected on monocytes/MDM of the peripheral blood of early untreated RA patients and constitutes a cellular marker for macrophage activation. Therefore, imaging of FR-beta might serve as a non-invasive method to detect and characterize activated macrophages which play a crucial role in subsequent progression of atherosclerosis in rheumatoid arthritis.

Hepatoprotective properties of artichoke (Cynara scolymus L.) in patients with gout and hepatobiliary system pathology

ESC-ID: 1168
Authors: Arych H, Pishak O
Country: Ukraine
University: Bukovinian State Medical University , Department: Propedeutics of Internal Diseases

Introduction: More than 50% of gouty patients have hepatobiliary system pathology. To prescribe hepatoprotective drugs for these patients we must know their influence on uric acid concentration, because many drugs may increase concentration of this acid in blood plasma.
Objective: To compare the hepatoprotective efficacy of artichoke (cynara scolymus) and placebo in group of subjects with gout and hepatobiliary system pathology. Methods: Subjects (n = 46) with gout were randomized to receive 3 times a day artichoke (cynara scolymus - 200 mg) or placebo for 3 weeks.
Results: It has been detected that the artichoke promotes the hepaticobiliary system dysfunction acceleration regress, normalizes serum bilirubin, uric acid, urea concentration, serum liver enzymes (alanine aminotransferase, alanine aminopeptidase, aldolase, amylase, aspartate aminotransferase, gamma glutamyltransferase, lactate dehydrohenase, alkaline phosphatase).
Conclusion: Artichoke had hepatoprotective effect than did placebo in subjects with and gout

Allergy to car and dog in patients with allergic diseases - study of 375 cases

ESC-ID: 1202
Authors: Sokolowski L, Ukleja N, Gawronska-Ukleja E, Bartuzi Z
Country: Poland
University: Collegum Medicum in Bydgoszcz, Nicolaus Copernicus University in Torun , Department: Allergology, Immunology and Internal Medicine

Introduction: Allergy to animals is a problem among children and adults. The most frequent is allergy to cats and dogs dander, because of strength and spread of its allergens. Atopic patients often suffer from pathologic symptoms, when exposed to animal allergens.
The aim: Establishing the frequency of allergy to animal dander in patients with bronchial asthma, seasonal rhinitis and other allergic diseases.
Material and Methods: The research was carried out in 375 patients (243F and 132M) aged 12-64 treated in the Outpatients Clinic of Allergic Diseases. Every patient was interviewed for allergy history. Every patient had: 1. Spirometry at rest and bronchodilatatory test 2. In some cases spirometry with histamine provocation 3. Skin-Prick test for inhaled allergens and animal fur.
Results: In 375 patients we found positive skin prick tests to dogs dander in 87 cases (23,2%), cats in 102 cases (27,2%). Positive result for at least one allergen in 136 cases (36,3%). In the group of patients 101 suffered from seasonal allergic rhinitis, 114 suffered from bronchial asthma, 67 suffered both from asthma and seasonal allergic rhinitis and 93 suffered from other allergy. In 101 patients with seasonal allergic rhinitis positive skin prick test to dogs dander in 22 cases (21,8%), cats in 30 cases (29,7%). In 114 patients with bronchial asthma positive skin prick test to dogs dander in 24 cases (21,1%), cats in 25 cases (21,9%). In 67 patients with bronchial asthma and seasonal allergic rhinitis positive skin prick test to dogs dander in 25 cases (37,3%), cats in 27 cases (40,3%). In 93 patients with other allergies frequency of allergy to dogs dander in 16 cases (17,2%), cats in 20 cases (21,5%).
Conclusions: 1. In the group of patients with bronchial asthma and seasonal allergic rhinitis allergy to dog and cat dander is more frequent then in other groups (37,3% and 40,4%) 2. Allergy to animals is a huge problem among patients with allergic diseases (36,3% with positive skin prick test for at least one animal allergen).

Differences in the activity of systemic sclerosis with patients with and without digital ulcers

ESC-ID: 1260
Authors: Cvijovic A, Brankovic M, Damjanov N
Country: Serbia
University: Belgrade University, Department: Institute of Rheumatology

Introduction: Systemic sclerosis (SSc) is a multisystemic disease which causes fibrosis and damage of skin and viscelar organs, above all lungs, digestive system, heart and kidneys. Digital ulcers (DU) are one of the most frequent external manifestations of vasculopathy in SSc. Aim: Our aim was to assess the activity of systemic sclerosis in groups of patients with and without digital ulcers.
Material and methods: Within a retrospective study that included 66 patients (59 women and 7 men) suffering from SSc, certain data on clinical characteristics of the diseased, which had been obtained from EUSTAR (EULAR Scleroderma Trials and Research group) centre of Institute of Rheumatology in Belgrade, were gathered and analysed. The patients were divided into two groups, on one hand 35 patients who developed digital ulcers during the study, and on the other 31 patients who did not have this manifestation within their clinical picture. The activity of the disease was assessed in each group and was compared afterwards. The EUSTAR SSAS (Systemic Sclerosis Activity Score) questionnaire was used for evaluation of the activity.
Results: There was no significant difference in the activity of the disease between the two groups of patients, assessed by EUSTAR SSAS questionnaire (p=0.712). In the group of patients with DUs there was a higher mean pulmonary arterial pressure (PAP) and a more frequent appearance of diastolic disfunctions in comparison to the group without DUs.
Conclusion: There is no significant difference in the activity of SSc evaluated with EUSTAR SSAS questionnaire between our groups of patients with digital ulcers and without digital ulcers.

Transcriptional profiling of peripheral monocytes in systemic sclerosis

ESC-ID: 1337
Authors: Weiss G, Biesen R, Becker MO, Guenther J, Gruen J, Haeupl T, Kill A, Hanke K, Gruettner H, Loewy K, Burmester GR, Radbruch A, Gruetzkau A, Riemekasten G
Country: Germany
University: Charité - Universitätsmedizin Berlin , Department: Dep. of Rheumatology and Clinical Immunology

Aim: Gene expression analysis by RNA microarrays has become a common research tool in the field of immunology. Using this technique we investigated the peripheral monocytes of patients suffering from systemic sclerosis (SSc) in order to find candidate genes that could possibly be used as biomarkers in clinical practice. SSc is an as yet incurable, rare rheumatic disease characterized by interacting processes of vasculopathy, fibrosis and inflammation. All of them could be influenced by monocytes through the release of cytokines, the expression of surface receptors or other gene products.
Methods and Materials: Freshly collected peripheral venous blood of 15 female SSc patients and five healthy normal donors (ND) was subjected to erythrocyte lysis. Monocytes were isolated by CD15 negative and CD14 positive Magnetic Activated Cell Sorting® and afterwards tested for a purity of over 90%. Subsequently, monocytes were analysed by Affymetrix GeneChip® HG-U133plus 2.0 array. The resulting data were filtered using the BioRetis database software to select only transcripts that were differentially expressed between SSc and ND groups with an absolute fold change of >1.5 and a significant Bonferroni-corrected t-test of <0.05. After eliminating duplicate transcripts, IGB-TU Graz Genesis software was used for hierarchical clustering of individuals and gene transcripts, and for heat map visualisation. Pattern analysis of patients' disease manifestations was performed with the help of IBM Research Genes@Work software.
Results: More than 500 transcripts were differentially expressed in SSc patients' monocytes compared to those of healthy donors. Some of them were associated with disease activity and certain manifestations like acral ulcers, bad lung diffusion capacity, affection of the heart and as yet short duration of the disease. SSc patients and ND clearly separate in hierarchical cluster analysis as a proof of principle.
Conclusion and Perspectives: Whereas so far differential gene expression profiles of heterogenous cell populations (such as whole blood and peripheral blood mononuclear cells) have been shown for SSc, this work emphasizes the complex role of monocytes in the pathophysiology of Systemic Sclerosis. This agrees with their known role as a link between the innate and adaptive immune system. Flow cytometric evaluation of the identified candidate genes as biomarkers reflecting clinical manifestations is currently being performed within a larger validation group. We expect those candidates to show a differential cell surface protein expression making them therefore readily applicable in clinical practice.

Session: Surgery 1

Biological feedback method in rehabilitation children with anorectal pathology

ESC-ID: 540
Authors: Tarasik A, Dzehtsiarou Y
Country: Belarus
University: Belarussian state medical university , Department: pediatric surgery

Aims: To introduce into clinical practice the biological feedback method (BFM) of postoperative rehabilitation of patients with congenital anorectal pathology and to develop the necessary equipment.
Methods and materials: 182 patients with postoperative anal sphincter insufficiency, treated in Pediatric Surgery Center from 1995 to 2008. In the group there were 105 males and 77 females aged from 12 months up to 16 years old. Operative anorectal pathology correction had been administered to all of the patients. Only children aged 5 and above underwent the rehabilitation process because younger patients initially had a negative attitude to it. Before the session all stages of the anal sphincter stimulation had been explained to the patients. Basic patient's complaints were those of fecal incontinence (60%) and kalomazanie (40%). For the treatment was used developed and constructed by us Biological Feedback Complex, which consists of a feedback device, a computer with a special programme, and rectal sensors. The course of the therapy included 10-15 daily sessions of 10-20 minutes each.
Results: The System Feedback Stimulator is a new type of equipment, which gives an opportunity to control in the real-time regime the physiological parameters of a patient. The therapeutic effect of the method is based on the corticovisceral connection reconstruction, which is in charge of the anal sphincter function. BFM gives the patient video or/and audio forms of information about his/her current physiological parameters. In course of the feedback procedure the patient can consciously change these physiological parameters if they are exactly known. Thus, the activation level of parameter regulatory system in the brain changes as well. This technology helps to halve rehabilitation terms. The patient has to tense the anal sphincter and to keep this tension at the necessary level. At this time the device (EMG-sensor) registers the electromyogram and shows this information on the screen in the form of graphics for adults or like a game for children. The fact that the patient can see the information about the tension makes it possible to correct and control its force and duration, which in its turn increases the rehabilitation efficiency and reconstructs corticovisceral connection. The efficiency of this method is controlled with the help of electromyography (EMG). Contractile anal sphincter function is registered by interfacial EMG. Average amplitude is 300±59 microvolt. Bioelectrical activity of this muscle gradually increases, so the amplitude reaches its climax after 15 minutes of stimulation. There were 131 patients with positive results of the therapy. Complete remission or reliable decrease of the amount of fecal incontinence (when patients are satisfied with the quality of their life) were considered to be the positive results. Remote results (6-8 months) were observed in all cases. 109 patients had long lasting effects of the therapy, the rest had relapses 2 months after

they finished the therapy. These facts prove the necessity to develop and perfect the method itself.
Conclusion: BFM is noninvasive, cheap and practically doesn't have any contra-indications. It is an effective method of postoperative rehabilitation of children with anorectal pathology.

Technique of treatment of patients with gastroduodenal ulcer bleeding

ESC-ID: 574
Authors: Sadovnikova E, Milovanova E, Mendoza Udin A
Country: Russia
University: Peoples Friendship University of Russia , Department: Medicine

Research objective: to work out technique of treatment of patients with gastroduodenal ulcer bleeding (UGDB) based upon the definition of the rebleeding occurrence and the objective estimation of the severity of the patient's health status. Research tasks: 1. To review the results of the treatment of patients with UGDB in dependence of the selected tactic. 2. To study the importance of the health status of patients with UGDB for the outcome of the ulcer bleeding and selection of the treatment tactic. 3. To study the importance of the prognosis of the rebleeding in selection of the treatment technique for patients with UGDB. 4. To develop diagnostic and treatment algorithm of the treatment of the patients with UGDB. The aim of the study is the development of the treatment techniques for patients with UGDB, based on the possibility of rebleeding and objective evaluation of severity of the patient's health state.
Material and methods: The work is based upon the analysis of 924 patients with gastroduodenal ulcer bleeding, who were admitted to our Hospital from 2000 to 2009. The ratio of men and women was 2 : 1 (628: 134). The age of patients varied from 14 to 97 years (average age 58 ± 17,2 years). 147 patients were hospitalized with signs of continuing bleeding (Forrest I), 458 patients were hospitalized with signs of occurred hemorrhages (Forrest II). The endoscopic hemostasis was performed by injection, argon plasma or radiowave coagulation. Results and discussion. The choice of techniques of treatment depended on several factors: success of endoscopic hemostasis, risk of development of a repeated bleeding according to prognosis system of bleeding relapse (PSBR), gravity of patient's health condition according to SAPS II index. Successfully performed endoscopic hemostasis or absence of signs of an active bleeding with risk of a bleeding below 21 points according to PSBR are indications for strictly conservative treatment under the control of laboratory indices and performance of EGD in dynamics. There are three groups of indications for surgical intervention: - indication for emergency surgical treatment is proceeding bleeding IA, IB on Forrest, given the inefficiency or impossibility of endoscopic hemostasis - immediate surgical treatment is prescribed to patients with signs of unstable hemostasis Forrest IIA and IIB, above 21 points according to PSBR, but below 30 points at SAPS II. - given the gravity of patient's condition with SAPSII above 30 points and high risk of relapse of a bleeding the repeated endoscopic hemostasis is preferable and, unless it has proven effective, one must resort to surgical intervention. This medical-diagnostic technique is used in the Hospital since 2007. During that time 272 patients with gastroduodenal ulcer bleeding has received treatment at hospital. The general lethality accounted for 12,5 %. Lethality of patients with a bleeding from chronic ulcers - 3,4 % (6 patients out of 172 died), from symptomatic ulcers of 28 % (28 patients out of 100 died). The main cause of death was a serious associated pathology (Decompensated cirrhosis, cardiac infarction, etc.). Acute hemorrhage together with hemorrhagic shock caused the death of two patients (0,73 %). In both cases the death has come within the first days from the moment of admission. In 2004 - 2006 before the introduction of the abovementioned technique of choice of treatment there were 333 patients with this nosology at the hospital. The general lethality was 24,3 % (81 patient died). Lethality of patients with bleeding from chronic ulcers was 15,2 %, in case of a bleeding of symptomatic ulcers - 43,1 %. The associated pathology was the main cause of death during the period specified. However, acute hemorrhage together with hemorrhagic shock caused death in 11 cases (3,3 %).
Conclusions: The application of the given technique for treatment of patients with ulcer bleedings has allowed to decrease the lethality from acute hemorrhage from 3,3 % to 0,73 % (and in 2007 and 2009 to 0 %), postsurgical lethality from 40 % (14 patients out of 35) to 25,9 % (7 patients out of 27), lethality of patients with a bleeding from chronic ulcers from 15,2 % to 3,4 %. Thus, the use of systems PSBR and SAPS II allows to find a reasonable approach to the problem of defining a treatment technique for patients with UGDB and improve results of treatment of patients with this pathology.

The role of abdominal compartment syndrome in patients with severe acute pancreatitis

ESC-ID: 985
Authors: Sotirovic V, Bajec A, Ilic N, Bajec D, Radenkovic D
Country: Serbia
University: University og Belgrade, Department: Clinic for Emergency Surgery

*Aim:*The development of intra-abdominal hypertension (IAH) and abdominal compartment syndrome (ACS) in patients with severe acute pancreatitis (SAP) have a strong influence on the course and outcome of the disease. The aim of this study was to determine the incidence of ACS, mortality of patients with ACS, and early predictors for the development of this complication in patients with SAP.
Material and Methods: In this retrospective study all patients with SAP in period of two years were included. Patients demographic data, etiology of acute pancreatitis, the development of systemic complications, mortality, the value of APACHE II score and Glasgow score were analyzed in patients with SAP. The value of SOFA score was analyzed in patients with ACS. Intra-abdominal pressure (IAP) was measured in all patients with suspected intra-abdominal hypertension.
Results: Forty four patients with SAP were divided into two groups, a group with ACS (n = 11) and a group without ACS (n = 33). Mean values of APACHE II score ($p < 0.001$), and Glasgow score ($p = 0.027$) were significantly different between two study groups. In the group of patients with ACS the average value of SOFA score was 9

points, while the mean value of IAP before the intervention was 20 ± 2.89 mmHg. Univariant logistic regression analysis showed that the value of APACHE II score and Glasgow score are predictors for the development of ACS, while multivariate analysis showed that the value of APACHE II score is the most important parameter for prediction of development of this complication. Mortality of patients with ACS was 72.7% and showed statistically significant different in comparison with mortality in the group of patients without this complication (24.2%).
Conclusion: Abdominal compartment syndrome is frequent complications in patients with SAP, with incidence rate of 25% in our study. Determination of Glasgow, and APACHE II score, especially in the early course of disease, are very useful predictors for development of ACS in patients with acute pancreatitis.

A study of 63 cases evaluating risk factors involved in the survival rate after resection of liver metastasis from colorectal adenocarcinoma

ESC-ID: 1027
Authors: Cozar O, Fustos T, Iorga O
Country: Romania
University: Iuliu Hatieganu University, Department: Surgery

The selection of patients for resection of liver metastasis after colorectal cancer is still a subject of debate and no specific criteria has been established. We wanted to assess the survival rate after a 2-year follow-up period after the metastasis resection and to identify the survival risk and prediction factors in those cases.
Methods and materials: We have included in our study 211 patients from which 63 were diagnosed and underwent hepatic resection for colorectal metastatic disease between 01.01.2002 and 31.12.2005. We have excluded from the study patients under palliative treatment as well as surgical treatment performed in a different surgical centre. After surgery was performed, patients were assessed regularly by ultrasonography at 3 months and by computer tomography imaging annually. We have noted as variables the age, gender, coexisting medical diseases, blood test results, maximal tumour diameter, tumour site and the case evolution before the last check-up and also the date of death if appropriate.
Results: The survival rate after a 2 year follow-up post-surgery was of 65.1%. An analysis of the variables recorded proved that age (<65 vs >=65 years, p=0.041), metastasis number (<3 vs >=3 tumours, p=0.049), maximal tumour dimension (<3 vs >=3 cm, p=0.047), aspartate aminotransferase (ASAT) preoperative level (<42 vs >=42 mg/dl, p=0.018) were significant factors correlated to median survival time. The prior mentioned factors did not present any independent prediction power in multivariate analysis.(Cox regression, p<0.05).
Conclusions: Our results demonstrate that the long term advantages of hepatic resections of colorectal cancer metastasis have in no way been altered by any of the risk factors taken into consideration by our study. Hence, we recommend that the metastasis resection should be performed whenever possible.

Amniotic membrane as a biological dressing in split thickness skin graft donor sites in burn patients: A within-patient controlled study

ESC-ID: 1118
Authors: Moaddab AH, Eskandarlou M, Azimee M, Rabiee S, Seifrabiei MA, Akbari M
Country: Iran
University: Hamedan University of Medical Sciences, Department: Surgery

Aim: Many different types of dressings are in use on the healing and management of skin graft donor sites. In this study, we compare the effectiveness of human amniotic membrane dressing in pain relief and movement improvement to standard mesh Vaseline gauze dressing in split thickness skin graft donor sites in burn patients.
Methods and Materials: In a within-patient controlled prospective clinical study, 32 burn patients were investigated in our hospital between March 2008 and January 2010. After graft harvest from 2 symmetric areas in upper or lower limbs each patient was treated with two dressing types. Pain intensity, promotion of limb movement, time of dressing sloughing and any evidence of infection were assessed at daily visits by trained observers. Student's t-test and Mann Whitney test were used to compare variables. All statistical analysis were done using SPSS software and significance was ascribed to a p-value <0.05.
Results: The mean value of the pain intensity scores revealed statistically significant differences in support of amnion group (p-value<0.05). Although these significant differences were not continued after the 6th days post operatively. The mean scores for the range of movement during the initial 5 days post operatively was significantly differed between two donor sites (p-value = 0.016) However, at days 6-21 range of movement had not significantly changed between two types of dressing (p-value >0.05). Dressing sloughing time was 8.15 ± 3.14 days (range, 3-18) for amnion dressing and 9.2 ± 3.17 days (range, 5-21) for standard mesh Vaseline gauze dressing. This difference was not statistically significant (p-value = 0.239). In two patients, donor sites covered by amnion dressing had clinical findings in favor to wound infection but risk of local infection was not statistically different between two groups.
Conclusion: The results of this study show the promise in relieving pain and promoting of early movement of the limb which split thickness skin graft was taken donor sites in burn patients. Although further work is necessary, human amniotic membrane remain a promising area of study for use in the management and healing of skin graft donor sites in burn patients especially in the setting of major burns.

Invastigation of Kv1.3 potassium channels as targets for immunosupression in rat limb allotransplantation

ESC-ID: 1142
Authors: Krapf C, Hautz T, Grahammer J, Hickethier T, Zelger B, Seger C, Pfisterer H, Brandacher G, Öllinger R, Lee WPA, Margreiter R, Pratschke J, Glossmann H, Schneeberger S
Country: Austria
University: Innsbruck Medical University , Department: Visceral, Transplant and Thoracic Surgery

Background: Skin rejection in reconstructive transplantation is primarily driven by a T-lymphocyte driven immune response towards the epidermis. Kv1.3 potassium channels on lymphocytes are critically involved in T cell activation. The effect of correolide C, a blocker of Kv1.3 was investigated in a rat limb transplant model.
Methods: After orthotopic rat hind limb allotransplantation (BN-LEW) animals received correolide C either i.p. (5mg/kg/day) or as intra-graft treatment (3mg/kg twice/week s.c. into the limb) in combination with tacrolimus, given i.p. for 30 days (0.3mg/kg/day) or 50 days (0.3mg/kg/day0-30 and 0.1mg/kg/day31-50). Untreated animals, placebo treated animals and animals receiving tacrolimus alone served as controls. Rejection was assessed by daily inspection and H and E-histology of skin biopsies. Grade III rejection was defined as endpoint. Tacrolimus 24h-trough blood levels were measured regularly after pod 30. WBC and RBC counts were recorded in native and correolide C (i.p. only) treated animals.
Results: Untreated and placebo treated controls rejected at day 8.83±0.98 and 9.00±2.83 (p=0.894). When given i.p., correolide C monotherapy resulted in slight but significant prolongation of allograft survival (10.50±1.38, p=0.037). Histology showed only a mild lymphocytic infiltrate and single vacuolized keratinocytes in the epidermis on pod 10 in 4/6 correolide C treated animals. RBC counts were decreased, whereas WBC counts were increased in correolide treated animals on pod 14, compared to native animals (RBC: 4.80 ± 1.07 vs. 8.44 ± 0.58, p = 0.00023; WBC: 30.74 ± 1.40 vs. 13.20 ± 3.27, p = 0.000097). After weaning tacrolimus on pod 30, limbs were rejected by pod 40.00±1.00 (grade III), and histology revealed necrosis of the epidermis. Additional treatment with local correolide C resulted in an insignificant prolongation of graft survival (pod 43.00±3.74; p = 0.24). 2/5 animals showed intact skin with a mild dermal infiltrate until day 45. Weaning tarcolimus on pod 50 resulted in rejection of the limb by day 55.00 ± 0.00 regardless of correolide therapy. Tacrolimus mean blood levels were 2.97 ± 0.98 ng/ml when tacrolimus was given at 0.3mg/kg/day and undetectable (<0.6 ng/ml) 5 days after weaning.
Conclusions: Systemic administration of a Kv1.3 blocker results in slight prolongation of graft survival after rat hind-limb allotransplantation while local administration into the skin has no effect under low dose tacrolimus therapy.

Surgical treatment of type A acute aortic dissection in Octogenarians

ESC-ID: 1222
Authors: Farina P, Glieca F, Possati GF
Country: Italy
University: Catholic University School of Medicine, Rome, Department: Cardiovascular Medicine - Cardiac Surgery

Background and aim: With the progressive aging of populations, an increasing number of elderly patients are referred to cardiac surgery. It is widely accepted that elective coronary artery bypass grafting and valve surgery can be performed safely in this group of patients. Instead, little is known about the results of emergency treatment of type A acute aortic dissection in octogenarians. Controversy exists as to whether the expenditure of health care resources on this group of patients represents a cost-effective approach to resource management. Avoiding surgery in patients with little chance of survival and poor quality of life in the post-operative period would spare unnecessary suffering, reduce operative mortality, and enhance the use of scarce resources.
Methods: We reviewed the records of 14 consecutive patients aged 80 years or older (mean age 8.35 years, range 80-86 years) who underwent operations for acute type A dissection from 2006 through 2010 in our institution. No patient with acute type A dissection was refused surgery because of age or concomitant disease. Eight patients were men. Preoperatively, none of the patients was moribund, although 57% had hemodynamic instability and 4 of them experienced cerebral ischemia. All patients had one or more associated pathologic conditions. A true statistical analysis was not performed, nonetheless we recorded the results of 73 younger (<80yrs) patients who underwent the same operations in the same period of time to allow some kind of comparisons.
Results: Overall hospital mortality was 71% (10 patients). Intraoperative mortality was 57% (8 patients). Almost all patients (13 out of 14) had one or more postoperative complications. Mean hospital stay was 34.6±23.7 days in the intensive care unit and 24.25±13.91 days in the floor. Only two of the 4 survivors discharged from the hospital were able to function independently. After 20.5±5.2 months of follow-up only three patients are still alive. Even without performing a statistical analysis, the variable age seems to be the most important risk factor associated with early and late mortality and morbidity.
Conclusions: Operations for acute type A dissection performed on octogenarians involve highly increased hospital mortality and morbidity. Short-term survival is highly unfavorable and is associated with a poor quality of life. Without additional studies to endorse the present findings, the use of age as a parameter to limit access of patients to expensive medical resources remains a questionable concept. Our small piece of evidence seems to support those who propose to deny surgical tratment to this group of patients. It shall be remembered, however, that such a decision bears complex ethical and legal implications, especially in some countries (such as Italy) where the public opinion makes huge efforts towards the preservation of human life, sometimes “at any cost”. There is a urgent need of evidence-based guidelines, specially intended for this subgroup of patients. This would help the team composed by the cardiac surgeon – anesthe-

siologist – cardiologist to propose the best available therapy to the patients and their families.

Paliative surgically treatment of unresectable pancreatic head cancer

ESC-ID: 1223
Authors: Dabetic I, Zivkovic I
Country: Serbia
University: Belgrade, Department: Faculty of Medicine

Introduction: Pancreatic cancer is one of the most aggressive malignant tumors, and fifth cause of cancer-related death. In two thirds pancreatic cancer is localized in the head of pancreas and in most cases it is adenocarcinoma. Majority of the patients in time of first presentation have incurable disease, owing to non-specific disease symptoms at the beginning, so palliative surgery is the only treatment solution.
Aim: The aims of this study are to present way of surgical treatment of obstructive jaundice, duodenal obstruction and pain, and to analyze survival after the operation. Material and methods: Retrospective study was done for 134 patients with unresectable pancreatic head cancer, treated at our clinic between 2000-2007. Data about surgical treatment, histo-pathological type of tumor, sex and age have taken patient's records, operative lists and definitive histo-pathology results. The data about patients death are taken from register of deaths from the place of living.
Results: There were 134 patients with unresectable pancreatic head carcinoma registered. We observed 105 of 134 patients. In this group of patients following surgical procedures were done: hepaticojejunostomy and gastroenterostomy, hepaticojejunostomy Roux-en-Y only, choledochoduodenostomy and cephalic duodenopancreatectomy. In two patients, that hepaticojejunostomy Roux-en-Y had been done earlier and then due to severe duodenal obstruction added gastroenterostomy was done later. In the group of 105 patients survival ranged from 3 to 26 months, median was 11 months.
Conclusions: Palliative surgical treatment of unresectable carcinoma of pancreatic head has the main aim to prolong survival and to improve health-related quality of life, which means the absence of jaundice, vomiting, body mass loss and pain.

The efficacy of intraoperative cell salvage during coronary artery bypass grafting

ESC-ID: 1242
Authors: Matkovic M, Vuksanovic M, Putnik S
Country: Serbia
University: Faculty of Medicine,University of Belgrade , Department: Faculty of Medicine

Introduction: Intraoperative and postoperative blood loss, like necessity for reintervention and multiple allogenic blood transfusions are an important factor in the outcome of cardiosurgical treatement. An intraoperative blood salvage system (cell saver-CS) can be used in cardiac surgery to reduce and avoid allogenic blood transfusions.
Aim: The aim of our study was to determine the effect of CS during the coronary artery bypass grafting (CABG) on pre and post operative haematological parameters, frequency and number of transfusions, clinical complications and mortality. Material and metods: Our study included 60 patients aged between 39 and 79 years subjected to CABG who were randomised into two equal groups, according to the usage or absence of CS. All patients with verified haematologic disorders, patients with previous cardiac or thoracic surgery, patients with myocardial infarction within 30 days and patients with concomitant valvular or aortic disease were excluded from the study. We analised preoperative parameters (comorbidity, preoperative haematological parameters, left ventricular ejection fraction, type of coronary disease), intraoperative parameters (procedure duration, number of bypass grafts, extracorporeal circulation duration, cross clamping time) and postoperative parameters (haematological parameters, postoperative drainage, number of transfusions, clinical complications and mortality).
Results: The use of CS significantly reduced allogeneic transfusion requirements ($p<0.05$). Five patients in CS group have not received any alogenic blood transfusin postoperatively, and all patients in control group received at least one transfusion during postoperative course. There was no statistically significant difference in pre and post operative haematological parameters between the compared groups ($p>0.05$). Surgery outcome, presented as a number of complications and mortality was not statistically significant ($p>0.05$), although there were less clinical complicatons within the CS group.
Conclusion: Usage of CS during CABG reduces allogenic transfusion requirements and increases the number of patients without the need for blood transfusion postoeratively. On the other hand, the effects of CS on important outcomes such as postoperative clinical complications and mortality remain unproven which indicates the need for further studies on a larger number of patients.

Surgical treatment, prognostic factors and survival in patients with extrahepatic bile duct tumors

ESC-ID: 1257
Authors: Zivkovic I, Dabetic I.
Country: Serbia
University: University in Belgrade , Department: Faculty of Medicine

Aim: Aims of this study are to present the ways of surgical treatment of the extrahepatic bile ducts tumors, survival after procedures, examine correlation between survival and prognostic factors, as well as correlation between observed factors.
Methods and Materials: There were 33 male and 13 female registered patients (mean age 65,2) with extrahepatic bile ducts tumors (excluding tumors of the gallbladder and papilla Vateri), that were surgically treated from January 1997 to December 2006. Data about surgical procedure, histological type and grade, gender, age, tumor localization, bilirubin and alkaline phosphatase value, duration of postoperative hospitalization and survival, were taken from medical records and register of deaths. Statistic analysis was done by methods of descriptive statistics and Spearman's correlation test. We used Kaplan-Meier analysis and Cox-regression model to examine correlation between survival and prognostic factors.
Results: In 56.5% of patients age range was 50-70 years.

56.5% of tumors had proximal (proximal to cystic duct), 13.0% middle (cystic duct to pancreas) and 30.5% distal localization (retro pancreatic and intrapancreatic). Adenocarcinomas (93.4%), leiomyosarcoma (2.2%), neuroendocrine tumor (2.2%) and granular cell myoblastoma-Abrikossof (2.2%) were confirmed. Granular cell myoblastoma is very rare benign tumor. Total resection, which is done, is definite treatment. This patient is still alive; it passed 132 months from the operation. Common bile duct resection and hepaticojejunoanastomosis (HJA) was performed in 18 cases, common bile duct resection with liver resection and HJA T-L in 4 cases, common bile duct resection with caudate lobe resection and HJA T-L in 1 case, cephalic duodenopancreatectomy in 6, palliative procedures (HJA L-T and gastroenteroanastomosis and intraoperative intubations) in 16 cases and explorative laparotomy was performed in 1 case. Median survival was 25 months (it ranged between 3 and 121 months). Difference between median survival after potential curative resection (29 months) and palliative surgical procedures (4.5 months) is statistically high significant ($p=0.0001$). In a group of patients with potentional curative procedures, mean survival for proximal tumors was 29 months, for medial 25 months and 23.3 months for distal tumors. The difference in survival depending on localization was not significant ($p>0.05$). There is statistically high significant positive correlation between preoperative bilirubin value and postoperative hospitalization duration ($p=0.002$). Age is significant survival predictor ($p=0.022$), as well as tumor grade ($p=0.037$). Bilirubin and alkaline phosphatase value are not significant survival predictors ($p>0.05$).
Conclusion: This study confirmed adenocarcinomas are the most common histological type among extrahepatic bile ducts tumors. Preoperative bilirubin value significantly affects postoperative hospital stay. Common bile duct resection and HJA with caudate lobe resection or adequate liver resection is performed for proximal tumor localization, common bile duct resection and HJA for middle tumor localization and cephalic duodenopancreatectomy is performed for distal tumors. Potential curative surgical procedures prolong survival compared to palliative procedures. Older patients and patients with higher grade of tumor have worse survival.

The role of endothelial nitric oxide synthase in ischemia reperfusion injury in a murine pancreas transplantation model

ESC-ID: 1275
Authors: Cardini B, Oberhuber R, Watschinger K, Hermann M, Obrist P, Werner-Felmayer G, Pratschke J, Brandacher G, Werner ER, Maglione M
Country: Austria
University: Medical University Innsbruck , Department: Daniel Swarovski Research Laboratory

Background: Ischemia-reperfusion-injury (IRI) - related graft pancreatitis is a severe complication following pancreas transplantation, affecting short- and long-term graft survival. Tetrahydrobiopterin (H4B), an essential co-factor of the endothelial nitric oxide synthase (eNOS) and potent antioxidant, was shown to significantly protect from graft pancreatitis in a murine pancreas transplantation model. Since the underlying mechanism is still controversially discussed, the aim of this study was to investigate whether the eNOS enzyme is the main target of H4B using eNOS-/- mice.
Methods and materials: Male syngeneic C57Bl6 (h-2b) mice were used as recipients, and C57Bl6-based eNOS-/- as well as eNOS wild type mice served as donors. Pancreatic grafts were retrieved in a modified no-touch technique, subjected to a 16 h prolonged cold and 45 min warm ischemia time, and transplanted heterotopically into the cervical region via cuff-techinque. Donors were either pre-treated with a single dose 50mg/kg b.w. H4B i.m. or were untreated. Non-transplanted animals of both genotypes - either untreated or treated - served as controls. Microcirculation was analyzed by intravital fluorescence microscopy and quantified by means of functional capillary density. H&E-stained tissue was histologically evaluated by applying the Schmidt pancreatitis score. Intragraft peroxynitrite formation was assessed by nitrotyrosine-immunohistochemistry. Intragraft H4B levels were determined by HPLC. Finally, since IRI of the pancreatic graft in this model was found to be lethal, different groups were tested for recipient survival.
Results: Prolonged cold ischemia time resulted in a pronounced breakdown of the microcirculation compared to non-transplanted controls. Independently of their genotype, H4B treated grafts reperfused for 2h displayed markedly improved functional capillary density compared to the corresponding untreated animals ($p=0.09$). In both genotypes, IRI-induced parenchymal edema of the graft, acinar necroses, hemorrhage and fat necroses were decreased following H4B pre-treatment, reaching however only statistical significance in wild type grafts ($p<0.04$). Similarly, nitrotyrosine formation was decreased in both treated groups, reaching statistically significant differences only in wild type organs ($p<0.01$). Compared to non-treated controls, application of H4B significantly enhanced its intragraft levels in all treated groups ($p<0.02$). Finally, a significantly prolonged pancreas recipient survival was observed if H4B was administered, indipendently of the grafts genotype ($p<0.001$).
Conclusion: Comparable recipients survival in both genotypes suggests that the eNOS is not the major target of H4B in this IRI-model. However, considering the more prominent decrease of histopathological and immunohistochemical scores in the wild type grafts 2h following reperfusion, eNOS can not be excluded as an additional target for H4B protective effects during early graft reperfusion.

GRP78 activity in prostate cancer is associated with HSP70 client proteins and upregulated in castrate-resistant, AR expressing tumours

ESC-ID: 1291
Authors: Tan SSY, Benett HL, Ahmad I, Singh L, Nixon C, Orange C, Seywright M, Edwards J, Leung HY
Country: United Kingdom
University: University of Glasgow , Department: Faculty of Medicine

Introduction: Despite the use of toxic taxane-based chemotherapy regimes, the median survival of patients with castrate resistant prostate cancer (CRPC) typically falls short of 36 months. GRP78/BiP is a key molecular chaperone, assisting in protein folding and assembly. Induced by endoplasmic reticulum stress, GRP78 expres-

sion is up-regulated and contributes to carcinogenesis in a number of tumour types. GRP78 is also a part of the HSP70 family, which has contributed to cancer cell survival via multiple anti-apoptotic functions.
Aim: The aim of our study is to assess the role of GRP78 in prostatic cancer. We wish to evaluate the effect of androgen-receptor (AR) activation on GRP78 expression in prostate carcinogenesis, investigating its association with clinico-pathologic parameters and development of castrate-resistance.
Methods: The relationship between activation of androgen receptor (AR) and GRP78 expression was examined in LNCaP and its hormone independent derived subline LNCaP-AI cells. Expression of GRP78 in clinical prostatic tissue was studied in tissue microarrays (TMAs) consisting of 164 cases of prostate cancer (PC) along with 23 cases of benign prostatic hyperplasia (BPH). We also performed immunohistochemistry on 2 client proteins of the HSP70 family, HER2 and HER3. To test the significance of GRP78 expression in development of castrate resistant disease, a matched tissue microarray consisting of 36 matched pairs of hormone naive and castrate resistant samples was studied for GRP78 expression. In vitro GRP78 expression was determined by Western blotting and in vivo GRP78 expression in clinical materials was assessed using the weighted histoscore method. Statistical analyses were performed using SPSS 17.0. Results : AR activation in LNCaP cells promoted GRP78 expression. GRP78 expression was significantly greater in malignant epithelium when compared to BPH ($P < 0.001$). Upregulation of GRP78 was associated with corresponding upregulation of the HSP70 client proteins HER2 and HER3. This was seen in both cytoplasmic (HER2: cc=0.227, $P = 0.004$; HER3: cc=0.234, $P = 0.003$) and membranous staining intensities (HER2: cc = 0.311, $P < 0.0001$; HER 3: cc = 0.214, $P = 0.006$). GRP78 expression in AR positive tumours was at significantly higher levels than in AR negative tumours, their median histoscores being 180 (IQR 115-210) and 125 (IQR 75-200) respectively ($P = 0.01$). Among AR positive tumours, GRP78 expression was associated with shorter survival; median survival times of 4.5 years (IQR 1.9-7.1) and 8.0 (IQR 4.1-11.9) for high and low GRP78 expressing tumours, respectively ($P = 0.049$). Similar to the parental line, the androgen independent LNCaP-AI cells also showed evidence of AR-mediated GRP78 expression. Furthermore, for the first time, using a TMA consisting of matched hormone naive and CRPC from individual patients, enhanced GRP78 expression was observed in CRPC tissue ($P=0.028$).
Conclusions: GRP78 activity is associated with HSP70 proteins. AR activation leads to up-regulated GRP78 expression in both hormone dependent and castrate resistant prostate cancer, which may facilitate prostate carcinogenesis.

Session: Surgery 2

Integra versus matriderm in burn reconstruction: consecutive analysis of a single surgeon's experience

ESC-ID: 498
Authors: Ravishankar Aa, Wong V, Ravishankar Ai, Hemington-Gorse S, Dziewulski P
Country: United Kingdom
University: King's College London , Department: School of Medicine

Introduction and Aim: Burn reconstruction plays a vital role in aiding the recovery of burn survivors, particularly after burn injuries have been sustained to the neck. Restoration of the injured areas with respect to functionality, comfort and appearance is essential in order to ease the rehabilitation of the patient. Dermal regeneration templates such as Integra and Matriderm are used to ameliorate the condition of the reconstructed region. Integra, a cross-linked collagen/glycosaminoglycan matrix, is more commonly used than Matriderm, a more recently developed collagen/elastin matrix alternative. Integra application is a two-stage procedure while Matriderm offers the opportunity of carrying out a single-stage reconstruction. Despite being widely used in burn reconstruction, there are few direct comparative studies of the two. This project aims to compare the two types of dermal template with regards to post-burn neck reconstruction in the hope of ascertaining which is clinically superior.
Materials and Methods: Using operating theatre log books and the surgeon's operating diaries from 2004 to 2009, consecutive patients who underwent burn reconstruction to the neck, using either Integra or Matriderm were selected. Clinical outcome in terms of duration of operation, number of operations, complications, recurrence, re-operations, hospital stay, quantity of dressing used and graft take were compared between the two groups along with the cost. The Mann-Whitney U test and Pearson's Chi-Squared test were used to analyse the collected data. A P-value of less than 0.05 was regarded as significant.
Results: Eighteen patients were included in this study (10 males and 8 females). There were eleven patients in the Integra group (5 males, 6 females, age 25.1 ± 17.1 years, TBSA 42.1 ± 16.9%) and seven in the Matriderm group (5 males, 2 females, age 37.1 ±15.4 years, TBSA 44.75 ± 19.2%). This amounted to a total of twenty-one cases in which Intergra was used in thirteen of these cases and Matriderm in eight. Most patients had vacuum assisted closure (VAC) dressing (92.3% of Integra group and 100% of Matriderm group). The differences in operation cost, hospital cost, duration of operation, number of operations and graft take between the two groups did not reach statistical significance. However, the dressing cost, quantity of dressing used and hospital stay were significantly lower in the Matriderm group ($p<0.05$). In particular, there was a reduction of more than 50% in terms of the quantity of dressing used and dressing cost in the Matriderm group. Interestingly, the rate of complications, recurrence and re-operation was similar in both groups.
Conclusion: This study indicated that Integra and Matriderm are analogous with respect to clinical outcome. Nevertheless, Matriderm use was associated with a lower

total cost due to significant reductions in dressing cost, quantity of dressing used and hospital stay. The possibility of carrying out a single stage procedure is also a major advantage. In conclusion, the dermal template Matriderm achieves results similar to Integra whilst being economically more practical to use.

Breast cancer surgery - evaluation of minimal invasive procedures in lymphatic staging

ESC-ID: 565
Authors: Sadowska A, Klasa L, Mieszkowski M, Budynko L, Mysiorski M, Drucis K
Country: Poland
University: Medical University of Gdansk , Department: Surgical Oncology Dept.

Aim: the aim of our study was to estimate accuracy and safety of Sentinel Lymph Node Dissection (SLND) in breast cancer patients as an alternative to axillary lyphadenectomy.
Material and Methods: Our research is based on 256 cases of women with breast cancer, who had been operated with SLND since 2001. Sentinel Lymph Node (SLN) was identified with blue-dye or combined technique in 224 cases (87,5%).The average age of patients was 55,7 (range 30-83). In 61 out of 256 metastases were diagnosed, from whom 48 were SLN positive. In 11 patients with identified tumor-free SLN other LN was metastatic, 10 of them would have received adjuvant chemotherapy and/or antihormonal treatment due to: lymphatic or vascular invasion, T feature, pre-menopausal age. One with false negative SLN identification wouldn`t have had adjuvant treatment- revealed metastatic focus in non-SLN was 0,4mm in diameter.
Results: We revealed correlation of metastatic SLN with lymphatic invasion ($p<0.001$), vascular invasion ($p=<0.001$), tumor burden ($p=0.04$). Lymphatic and vascular embolism were discovered respectively in 41 and 15 cases. Metastases in lymph nodes were found among 14 patients with vascular (93,3%) and 24 with lymphatic infiltration (58,5%). We hadn't confirmed that histological type of tumor or age are the risk factors for dissemination. Sensitivity of SLN biopsy was 96% but in this group only 1 patient would have been undertreated. Negative predictive value was 94%.
Conclusions: The sentinel lymph node dissection is accurate and safe method, which gives patients opportunity to avoid extensive and painful surgical procedure of axillary lymphadenectomy. Only 1 of 256 investigated (<0,005%) wouldn't have received appropriate adjuvant treatment if based on SLND only.

The proliferation behaviour of human vascular umbilical cord cells for cardiovascular tissue engineering under static and dynamic conditions

ESC-ID: 673
Authors: Döhnert N, Lueders C, Hetzer R
Country: Germany
University: Charité Universitätsmedizin Berlin , Department: Human Medicine

Background: A crucial factor for the tissue engineering of heart valves is to establish the optimal conditions for cell culture. In our laboratory, we are trying to improve the proliferation of human vascular umbilical cord cells, the myofibroblasts. This is very important for the planning of follow-up studies and ultimately for the construction of a heart valve from these cells. In this study we compared the possibillity of dynamic cultivation with the common static cultivation method. Further, we tested whether the static cell culture could be improved by modifying the culture medium.
Materials und Methods: To compare the static and dynamic cell culture methods the adherent myofibroblasts were seeded onto micro beads in a rotating bioreactor (RCCS-D, Synthecon) and cells were counted at defined intervals. In parallel a static culture from the same cell source was seeded and counted. In a further analysis the cells were seeded in culture flasks for three passages with five different concentrations of ascorbic acid as additive to the culture medium (from 0.1 to 5 mmol/L); one flask remained without the additive. Every passage (n=6) was tested using a WST assay, which showed the cell proliferation as an absorbtion difference calculated by an ELISA reader. The procedure was carried out during four consecutive days for every passage.
Results: The results showed that the dynamic cell culture did not improve the cell proliferation. The myofibroblasts were not suited to this method of cultivation. We also found a significant difference in cell proliferation between the myofibroblasts with and without ascorbic acid in the medium in static culture. A concentration of 0.1 mmol/l proved to be the best possible concentration out of the five, although every result in proliferation was better with ascorbic acid than in its absence.
Conclusion: We found that myofibroblasts do not proliferate in an adequate way when seeded onto micro beads in a rotating bioreactor. The use of ascorbic acid is important for further studies to improve the cell proliferation in vitro, which would upgrade the process and reduce the time required for the fabrication of heart valves. In addition these results can be taken into account in protocols for future experiments, thus improving the handling of myofibroblasts from the umbilical cord in tissue engineering.

The pteridines ABH4/BH4 modulate cellular responses to stress

ESC-ID: 809
Authors: Santer P, Ratschiller T, Hermann M, Maglione M, Drasche A, Burtscher T, Sucher R, Werner-Felmayer G, Werner ER, Brandacher G, Margreiter R
Country: Austria
University: Innsbruck Medical University , Department: Daniel Swarovski Research Laboratory

Both, tetrahydrobiopterin (BH4), an essential cofactor of several enzyme systems, including nitric oxide synthases (NOS), and its structural analogue and competitive inhibitor 4-aminotetrahydrobiopterin (ABH4) have been shown in the past to improve organ survival and performance during solid organ transplantation. The underlying mechanisms are poorly defined and may be independent of NOS as demonstrated previously. Since intracellular signaling pathways are vital for controlling cellular responses in this setting, we analyzed the effects of ABH4/BH4 for two conditions: cellular stress resulting from the transformation with the RAF oncogene and stress caused by hypoxia/reoxygenation (HR) as an in vitro model for ischemia (I) and reperfusion (R) as it occurs during transplantation. Using this approach we were able to show that (i) continuous presence of ABH4 or BH4 blocked cell proliferation while only ABH4 caused significant cell death in various cell models; (ii) short time pre-treatment with ABH4 but not BH4 inhibited two major mitogenic and anti-apoptotic pathways leading to the activation of ERK and AKT, as well as of the stress kinase JNK; (iii) prolonged incubation with either pteridine resulted in a concentration-dependent activation of ERK, JNK and p38 with more potent effects in the case of BH4; (iv) hypoxia and reoxygenation showed pronounced activation of all three kinase families at early reperfusion as observed previously; (v) the presence of BH4 and to a lesser extent of ABH4 during HR lead to an increase in p38 and JNK activity in HUVEC cells and HL-1 cardiomyocytes; while ERK activation was not affected; (vi) finally, reduced mitochondrial ROS production was seen in the presence of BH4 and ABH4 in HL-1 cells undergoing HR. In summary we see pronounced and complex effects of pteridines on intracellular signaling, which may lead to anti-oncogenic effects in transformed cells. A protective effect of A/BH4 during IR could result from the antioxidant signaling by these compounds.

The analysis of factors which affects therapeutical options in treatment of femoropopliteal occlusive disease

ESC-ID: 843
Authors: Mitrovic G, Ilic D
Country: Serbia
University: University of Novi Sad , Department: Deparment of Vascular Surgery

Introduction: Peripheral arterial occlusive disease (PAOD) is a progressive atherosclerotic condition which affects millions of people around the world. There are a lot of controversies about risk factors and surgical options for this disease.Goal: To analyze the influence of risk factors in patients with femoropopliteal PAOD and to analyze the results of surgical treatment of these patients.
Material and methods: Material contained retrospective analysis of angiography treated patients with femoropopliteal PAOD in one-year period. Patients with concomitant aortoiliacal disease were excluded from further analysis. The rest of the patients were divided in two groups: non-operated and operated patients. Group of operated patients was divided in two subgroups: patients with indication for amputation and patients where some of revascularization procedures were indicated. Group with indication for revascularization procedure was divided in two additional groups: patients with thrombendarteriectomy and autovenous bypass and patients with Dacron bypass procedure.
Results: In the period from 1.1.2008 until 31.12. 2008. there were 150 angiography treated patients with femoropopliteal PAOD. 120 patients were male, with statistically significant earlier appearance of PAOD symptoms (62,5 years). The analysis of risk factors did not show significant difference between non-operated and operated patients. In the group of 79 operated patients, we had difference between patients with amputation and revascularization. Even 45 patients were treated with Dacron bypass procedure. There was not statistically significant difference between non-diabetic and diabetic patients.
Conclusion: Male patients are more often and earlier affected with PAOD symptoms. Dacron bypass procedure is the method of choice in treatment of PAOD.

Evaluation of clinical efficacy of endoscopic treatment of upper gastrointestinal bleeding

ESC-ID: 1075
Authors: Sabela J, Dudek J, Jurczak M, Mrowczynski M
Country: Poland
University: Poznan University of Medical Sciences , Department: Medicine

Introduction: In the last few years a new diagnostic and therapeutic method of treatment for bleeding areas in the gastrointestinal tract -the injection therapy- was introduced.
Purpose of research: Evaluation of the effectiveness of this method.
Materials: Patients treated in the years 2006-2009. There were 288 patients presenting the upper gastrointestinal bleeding. Gastric and duodenal peptic ulcers were injected with the diluted Adrenaline. Moreover, oesophageal varices were injected with a solution of 1% Aethosclerol. Following diagnoses were established: 72(25%) cases of bleeding from the duodenum bulb; 71(24,7%) cases of gastritis or duodenitis; 67(23,3%) cases of bleeding from gastric peptic ulcers; 36(12,5%) cases of bleeding from oesophagal vertices; 13(4,5%) cases of Mallory-Weiss syndrome and 29(10,1%) others oesophagitis, oesophageal carcinoma, gastric carcinoma, varices of cardia, polyps and unknown sources of bleeding)
Method: Retrospective study of case records and descriptions of gastroscopies.
Results: Sclerotherapy was performed in 55(76,4%) cases of duodenal ulcers - in 50(91%) cases a long-term hemostasis was achieved, 5(9%) patients died. Injection therapy of 39(58,2%) patients with gastric ulcers brought long-term hemostasis in every case 38(97,4%). However, 5 deaths were reported before an obliteration was imple-

mented. In the group of 27(75,0%) patients with oesophageal varices who underwent obliteration, a complete (100%) long-term hemostasis was achieved. Among 9(25%) patients who did not undergo sclerotherapy 6 deaths occured. In cases of Mallory-Weiss syndrome ,where injection therapy was performed, long-term hemostasis was achieved.
Conclusions: Endoscopy with subsequent sclerotherapy is an effective method of treatment of peptic ulcers and oesophageal varices as well there is no significant difference in efficacy between those two groups.

Videomicrosurgery versus conventional microsurgery - A comparative study

ESC-ID: 1093
Authors: Ilie R, Thakur N, Preunca B, Parikh H, Mosteoru S, Bobilca V, Alexandru B
Country: Romania
University: Victor Babes University of Medicine and Pharmacy, Department: Surgery Clinic 1

Aim: To evaluate an endoscopic system as an alternative magnifying solution for microsurgical procedures and compare it to table-top microscopes on technical and surgical aspects.
Material and Method: Sprague - Dawley rats weighting between 250-300 grams were previously prepared by qualified instructors up to the aortic suture placement point. A number of 6 medical students (5 clinical and 1 preclinical), without previous microsurgical experience, performed each 12 end-to-end anastomoses on the rat aorta, alternating both of the systems. All the anastomoses were performed using the triangulation suturing technique. Parameters like total and single suture time, suture spacing, vessel bite, vessel overlapping and wall penetration were evaluated and graded. A different quantification process was used for each parameter.
Results: A total of 72 anastomoses were completed. The average single suture time using the microscope was 5591.65 seconds compared to 6899.9 seconds using the video endoscopic system. All the anastomoses underwent quality review.
Conclusions: Although differences exist in overall anastomoses, the learning curves are similar on the two systems and no major differences were noted in the overall anastomosis quality. Video-assisted microsurgery has the potential of becoming a useful instrument in the clinical practice.

A single institutional experience of factors affecting successful evaluation of sentinel lymph nodes in breast cancer patients

ESC-ID: 1127
Authors: Erban N, Erban T, Midi A, Yener N, Deveci U, Manukyan M
Country: Turkey

University: Maltepe university , Department: medicine
Introduction: The role of sentinel lymph node (SLN) biopsy in breast cancer has increased over the last few years. SLNs can predict the status of all axillary lymph nodes precisely and select patients with negative nodes for whom axillary dissection is unnecessary. The techniques for intraoperative evaluation of SLNs vary. The most common methods include frozen section, imprint cytology/touch preparation cytology and scrape cytology. In this study, we aimed to compare and discuss the results in our series of SLN biopsies with the relevant literature.
Material-Methods: From 2007 to 2010, 56 patients with primary operable breast cancer were included in our study. SLN biopsies were attempted by using blue dye method and pathologic examination was done using a combination of frozen section, imprint cytology/ touch preparation and scrape cytology methods. Permenant sections of the entire paraffin blocks were prepared and examined.
Results: Mean age of totally 56 patients was found as 52 (range between 28-81). One hundred and thirty eight SLNs were succesfully identified, for an identification rate of 98%. For each patient, 2.46 SLNs were identified. Sixteen patients (28%) had positive SLNs. Based on the total number of SLNs, the positivity was 15%. Positivity in one SLN rate was found as 13 among the 16 positive SLNs (81%). False negativity was 2/138 (1.44%) both of them occurred in SLNs with micrometastases.
Conclusion: The results suggest the need to examine SLN at multiple levels and to use additional cytologic methods besides frozen section. Triple technique consisting of frozen section, imprint cytology/touch preparation cytology and scrape cytology would result in improved staging and an increase in the proportion of node positive disease. The literature rates for SLN positivity are 81% and 22% for macro- and micrometastasis, respectively. Our results appear to be higher in terms of SLN positivity which is probably related to our using of combined techniques.

New minimally invasive surgical technique in varicose disease - endovenous laser therapy

ESC-ID: 1139
Authors: Bengulescu I, Pantea S, Pantea C, Sargan I, Stanciu P, Papurica M
Country: Romania
University: The Victor Babes University of Medicine and Pharmacy Timisoara , Department: Discipline of surgery II

The varicose disease has become a real health care problem, with a rate of 30-40% around the world. In 1999 Boné reports the first endovenous laser use.
Aim: To evaluate the results and benefits of the endovascular laser therapy technique (EVLT) in the varicose disease, in the past 5 years in our clinic.
Material and Methods: Retrospective 5 years study (01.07.2005-31.05.2010) on a number of 252 patients. We performed 364 procedures. Post-op evaluation was done under Echo Doppler control at 1, 3, 6, 12, 24, 36 months.
Results: The clinical outcome was favorable for 93,84% of the patients. Minor complications such as incision complications, echymosis, hyperpigmentation, paresthesia, skin burns were present but in comparable percents to the literature data. One major complication occurred (one patient suffered deep venous thrombosis).
Conclusions: EVLT is a suitable alternative for the classic treatment. It can be performed in ambulatory, and it has immediate professional reintegration.

Evaluation of forearm X-ray radiography as a useful method to determine arterial calcification before arteriovenous fistula creation

ESC-ID: 1274
Authors: Ganji M, Shirvani A, Zarei M, Rikhtehgar M
Country: Iran
University: Iran University of Medical Sciences , Department: medicine

*Introduction:*Best long-term hemodialysis vascular access for end stage renal disease (ESRD) patients is native AVF (arteriovenous fistula) that requires the fewest interventions and associates with the lowest morbidity and mortality in comparison with other types of access. Presence of arterial disease such as atherosclerosis can prevent the development of an adequate AVF. In atherosclerosis disease, anastomosis between the calcified artery and venous is difficult and these calcification causes low blood flow for development of fistula. It is useful for a surgeon to receive data from artery in non invasive method to decide about surgery and location of fistula before AVF creation. Moreover some studies report arterial calcification in forearm X-ray radiography in uremic patients. Therefore we aimed to determine incidence of arterial calcification in forearm X-ray for ESRD patients and also its relation to atherosclerosis risk factors. We hope it could help surgeons for AVF creation.
Methods and materials: In this cross-sectional study, all patients with ESRD who candidated for AVF creation from April 2008 to March 2009 in Hasheminejad hospital were included in our study by convenient sampling. Before surgery, forearm X-ray radiography (AP and lateral projection) was taken from all patients and calcified artery in radiographies was reported by a radiologist. Diabetic History, Hypertension, vascular disease, heart disease and smoking condition of each person were determined. Some blood testing such as calcium, phosphor, blood urea nitrogen (BUN), creatinine, fast blood sugar (FBS), triglyceride, low-density lipoprotein (LDL), high-density lipoprotein (HDL) and cholesterol of patients were measured. During the surgery, findings of surgeon about calcification of radial artery were noted. Data analysis was assessed using SPSS v.16 via Chi-square, Kappa and Independent-samples T-test.
Result: 174 patients were included with the mean age of (mean±SD:56±16.1) years, 58.6% male and 41.4% female. Eighteen percent of patients (n=34) had arterial calcification in their forearm X-ray radiographies. A moderate agreement in diagnosis of calcified artery was observed between surgeon and radiologist (k=0.56, P=0.000).diabetic patients had significantly more calcified artery in forearm X-ray rather than other patients (P=0.000). In blood tests, only FBS was significantly higher in patients with calcified artery in forearm X-ray (P=0.000). Based on the found calcified artery in forearm X-ray, the age of the patients were significantly different (P=0.000). The higher mean of age was in the patients with calcified artery in radiographies (mean±SD:64±12). And the lower one was in the patients without calcified artery in radiographies (mean±SD:54±16).
Conclusion: This study showed that simple forearm X-ray was helpful to the surgeon as a noninvasive method before AVF creation to know about calcified pattern of artery, especially in diabetic and elderly patients. These high-risk patients, who had calcified artery in forearm x-ray, were at risk of AVF failure and uremia complications.

Cardiac surgery with extracorporeal circulation in paediatric population- another factor of the gallbladder oedema?

ESC-ID: 1318
Authors: Czeczko K, Paczkowski K, Kosiak W, Chojnicki M, Haponiuk I
Country: Poland
University: Medical University of Gdansk , Department: Students' Scientific Ultrasonography Gr

Introduction: Gallbladder wall oedema is common sonography finding in many different clinical situations like circulatory insufficiency, shock, nephrotic syndrome, renal insufficiency, infectious diseases and many others. However, it is also ultrasonographic criteria of acute acalculous cholecystitis (ACC), an insidious complication of prolonged fasting, sedation and mechanical ventilation. So there is need to take suspicion of ACC in early stage and differentiate it with the other similar clinical conditions.
Aim of study: The purpose of this study was to assess ultrasound image of the gallbladder after cardiac surgery with extracorporeal circulation in paediatric population.
Materials and methods: Thirty-tree patients of the Department of Paediatric Cardiac Surgery in Gdansk (age range: 5 days - 6 years; average: 13,7 months), who were qualified to cardiac surgery with extracorporeal circulation from September 2009 to February 2010, underwent sonography of the gallbladder three times, a day before surgery, in the first and the second day after surgery. The correlation between ultrasound image of the gallbladder, aortic cross-clamp time, inflammatory factors like CRP and WBC were assessed using Pearson r test.
Results: No abnormalities were observed in ultrasound image of the gallbladder before cardiac surgery. Thickening of the gallbladder wall (thickness range: 4-20mm; average: 7,9mm) had 28 of the 33 patients in the first day after surgery. In the second day after surgery, the thickening decreased of 0,2-6,7 mm (average: 1,74 mm) in 10 of 28 patient with thickened gallbladder wall in the first day, however, it was still higher then reference range (<3 mm). The normal gallbladder wall thickness had 18 of the 28 patients in the second day. In two cases there were increase in the thickness, from 8,5 mm to 10 mm and form 5,7 mm to 6,2 mm. No statistically significant correlation was found among thickness of the gallbladder wall, inflammatory factors and aortic cross-clamp time.
Conclusions: A state after cardiac surgery with extracorporeal circulation is another clinical condition, which has to be taken into consideration in differential diagnosis of the thickening of the gallbladder wall.

Session: Surgery – Poster

Ascending aortic aneurysm, surgical indication and technique - timisoara heart center experience

ESC-ID: 487
Authors: Mosteoru S, Parikh H, Thakur N, Preunca B, Bobilca V, Ilie R, Gaspar M, Dumitrasciuc G
Country: Romania
University: "Victor Babes" University of Medicine and Pharmacy, Timisoara , Department: IInd Cardiovascular Surgery Department

Introduction: Ascending aortic aneurysm is a serious condition prone to rupture, dissection or death once it reaches a certain size. It is closely associated with idiopathic cystic medial degeneration, atherosclerosis and bicuspid aortic valve. Fifty percent of patients who experience the rupture of a thoracic aortic aneurysm die before reaching the hospital. Furthermore, surgical repair of a ruptured thoracic aneurysm carries a 25-50% mortality rate as opposed to a 5-8% mortality when these patients undergo elective repair on a non emergency basis.
Aim: The purpose of this study is to analyze the surgically treated cases at our clinic over the period of two years (January 2008- December 2009).
Materials and methods: We have conducted a study on 25 patients with the mean age of 50 years. All were symptomatic (main symptoms included dyspnea or chest pain) and were diagnosed with ascending aortic aneurysm either by echocardiography (19) or by angio-CT multislice(6). Most of the patients carried risk factors: hypertension (48%), dyslipidemias (36%), obesity (52%) and diabetes mellitus (4%).
Results: Emergency operations had to be performed in 16% of the cases. The surgical technique choices were to replace the dilated aorta with a Dacron graft in 4 patients (16%), while for 21 patients (84%) the Bentall procedure (replacement of the aortic valve and ascending aorta) was carried out due to associated valvular pathology. Postoperative morbidity included atrial fibrilation (16%), complete atrioventricular block (8%), acute myocardial infraction (4%), bronchopneumonia (4%), secondary anemia (4%) and coma (8%). Perioperative mortality was 8%, the patients who died being operated on an emergency basis.
Conclusions: Aneurysmal degeneration of the aorta is a diagnosis that should be carefully considered for surgery given the huge implications it has on the patient's life, especially in symptomatic patients with associated high risk factors.

Usefulness of pyloromyotomy with THE in improving gastric emptying

ESC-ID: 504
Authors: Dashti A, Mahmudlou R, Badpa NM,Ghasemi-rad M, Mousavi M
Country: Iran
University: Urmia University of Medical Sciences, Department: Students Research Committee

Introduction: Pyloromyotomy is a pyloric drainage procedure routinely done during transhiatal esophagectomy (THE) to prevent delayed gastric emptying resulting from truncal vagotomy. The aim of this study was to determine the usefulness of pyloromyotomy in improving the post-operative gastric emptying time.
Patients and Methods: forty patients with esophageal cancer underwent THE. 20 patients underwent THE without pyloromyotomy (group A), while the other 20 patients (group B) underwent THE with pyloromyotomy. Gastric scintigraphy was done for all the patients 6 months post-surgery to measure the gastric half emptying time (T50).
Results: in the liquid phase, the mean (T50) in the patients without pyloromytomy (group A) was 74.5 ± 56.71 minutes versus 62.85 ± 59.35 minutes in group B (P = 0.529), which is not significant. In the solid phase, the mean (T50) in patients of group A was 139.40 ± 94.156 minutes versus 141.15 ± 48.423 minutes in-group B (P value 0.941) which is also not significant.
Conclusion: No significant value on affecting the mean gastric emptying time compared to those underwent THE without pyloromyotomy.

EXIT to Separation of two sets of conjoined twins

ESC-ID: 521
Authors: Al-Hammad FA, Al-rabeeah A, El-Gammal M, Al-Jadaan S, Al-Namshan M ,Al-Zugaibi M,Al-Dahan D, Al- Zamakhshary M
Country: Saudi Arabia
University: King Saud University , Department: Surgery

Introduction: One of the most serious anomalies among monozygotic multiple gestations is conjoining of twins. The ongoing Improvements in prenatal imaging have allowed detection of the cases that need immediate separation after birth. However, special anesthetic and surgical considerations must be taken to ensure the survival of such cases.
Aim: To Report the successful experience of our center in dealing with emergency separation of conjoined twins.
Method: A retrospective review of two conjoined twins cases were diagnosed antenatally and underwent EXIT to separation strategy. Pre-,intra- and post-operative data were collected.
Results: Two cases were diagnosed antenatally and followed up in our center. In the first case ,One twin had anencephaly and congenital heart defects. In the other case, one twin had multiple brain and heart defects with lungs hypoplasia. Upon review of the literature and our own experience we were concerned that the anomalus twin would prematurely die after delivery compromising the survival of the normal co-twin. We hence elected to perform the ex utero intrapartum treatment (EXIT) procedure at term (38 weeks). The procedure was done successfully and the separation was performed immediately in the same setting. In both cases, the normal baby was discharged home after 3 weeks and remains well after the procedure.
Conclusion: Using EXIT-to-separation strategy for selected cases in addition to performing the surgery in advanced center by experienced surgical team lead to better survival chances for these complex cases.

Gallstone Ileus due to a jejunal gallstone inclavation - report of a case

ESC-ID: 610
Authors: Tirziu R, Mazilu, O, Iliescu D, Sima L, Hut F, Blidisel A, Nicolau M, Gaje P, Ragobete C, Cretu O
Country: Romania
University: University of medicine and pharmacy timisoara , Department: General medicine

Background: Gallstone ileus usually occurs in the elderly with a female predominance and is associated with a high mortality rate. The diagnosis is difficult; early diagnosis could reduce the mortality.
Case presentation: We report a cese of a 88-year-old woman who presented with a 3-day history of vomiting, distension, constipation, and abdominal pain. Laboratory tests showed elevated levels of blood urea and creatinine and leukocytosis. Plain abdominal x-ray film showed a dilated small intestine in the left upper quadrant. Exploratory laparotomy was performed and a calculus was extracted from the jejunum through a transverse enterotomy. The postoperative clinical course was uneventful and the patient was discharged 5 days after the operation.
Conclusion: Gallstone ileus is a rare cause of intestinal obstruction - usually in the terminal ileum, rare in jejunum and exceptionally rare in sigma. It must be considered in intestinal obstruction patients with a past history of gallstone, especially in elderly females.

Study on upper limb segment replantations - surgical treatment and assessment of morpho-functional results

ESC-ID: 613
Authors: Niagu RS, Chircu RN, Zamfirescu D
Country: Romania
University: University of Medicine and Pharmacy "Carol Davila" , Department: General Medicine

Background: Replantation surgery is the option for traumatic upper limb segments amputations. Immediate success rates vary, being determined by factors such as: ischaemia time, patient's age and the extension of tissue damage. Long term success rates depend on sensibility, range of motion obtained and functionality.
Methods and materials: Between July 2008 and May 2010 a total of 71 patients with upper limb segments amputations were treated at the Emergency Hospital in our city. The cases included: 2 (1,42%) upper arm amputations, 6 (4,26%) lower arm amputations, 28 (19,88%) hand (radio-carpal joint) amputations, 35 (24,85%) finger amputations. The surgical treatment included replantation, microsurgical revascularization and free flap coverage of remaining defects.
Results: Major replantations (upper arm, lower arm, hand) were successful but the patients needed secundary surgical interventions for aesthetic reasons. The production mechanism of finger amputations included cutting (59%), crushing (34%) and ring avulsion (3%). Immediate postoperative results were good in 77,47% of the cases. We also aimed postoperative follow-up and assessed morpho-functional results, aesthetic outcome and social reintegration.
Conclusions: Our data shows that replantation, microsurgical revascularization and free flap coverage of the defects represent successful treatement for upper limb segment amputation. However, in order to objectively evaluate the success rates; morpho-functional results, aesthetic outcome and social reintegration must be assessed.

Videothoracoscopic thymecyomy as a new way in surgical treatment of generalized myastenia gravis

ESC-ID: 766
Authors: Osadchinskiy A
Country: Russia
University:

Introduction: Thymectomy occupies one of the leading places in pathogenetic well-founded complex treatment of generalized myasthenia gravis. The majority of the domestic and foreign centres which are engaged in surgical treatment of myasthenia gravis, consider median sternotomy for thymectomy as the "gold" standard. However due to high trauma the given operation is not suitable for modern criteria of quality of the surgical help. New technologies have expanded possibilities of operative treatment and have changed sights of view in techniques of thymectomy.
Aim: To compare surgical results after videothoracoscopic thymectomy and thymectomy via median sternotomy.
Materials and methods: From January 2004 to December 2009 37 (50,7%) patients with generalized myasthenia gravis underwent videothoracoscopic thymectomy. The control group included 36 (49.3%) patients with generalized myasthenia gravis who underwent thymectomy via median sternotomy. Of the 73 patients, 57 were women (78,0%), 16 were men (22,0%). Mean age was 32±11,2 years. There was no significant difference between the two groups regarding preoperative data.
Results: Despite high clinical efficiency of operations in both groups, patients who underwent minimally invasive thymectomy had less risk of intraoperative and postoperative complications. The cosmetic effect was excellent in videothoracoscopic thymectomy group.
Conclusion: Videothoracoscopic thymectomy is methodologicaly proved and it is an option of choice in surgical treatment of generalized myasthenia gravis.

Early prediction of severity of acute pancreatitis using heamtocrit level on admission.

ESC-ID: 788
Authors: Bajec A, Nikola I, Darko B, Vuk S
Country: Serbia
University: University of Belgrade , Department: Faculty of Medicine

Introduction: The early prediction of the severity of an acute attack of acute pancreatitis (AP) has important implications for management and timely intervention. Besides diagnostic imaging procedures biochemical variables have gained increasing importance as an attractive approach to an easily available, fast, and accurate stratification of overall disease severity or specific complications in acute pancreatitis.

Objective: In the present study we aimed to investigate whether the hematocrit level on admission can be used as accurate parameter for prediction of severity of AP.
Methods: The study was done at the Clinic for Emergency Surgery (Clinical Center of Serbia) and it included 91 patients who were treated there. Two groups were formed: the first group was made of patients with severe acute pancreatitis (SAP) and the second of patients with mild acute pancreatitis (MAP). This classification for SAP was defined according to the Atlanta classification system. The following were determined: patients main characteristics curves (age, gender), level of hematocrit on admission, etiology and result of the treatment receiver operation characteristics (ROC) analysis determined cut-off value, sensitivity and specificity of hematocrit level as parameters for prediction of severity of AP.
Results: Group with mild AP consisted of 58 (64%) patients and group with SAP consisted of 33 (36%) patients. Average hematocrit level on admission was: 41% for MAP and 44% for SAP patients. For hematocrit cut-off level on admission (44%), sensitivity and specificity for prediction of severity of AP were 63,5% and 85,7% respectively.
Conclusion: Present study demonstrates that hematocrit level higher than 44 % on admission can be used as method of assessment for the severity of acute pancreatitis. The value of hematocrit on admission can be a useful and cost-effective marker which provides significant predictive power for clinical decision-making.

Follicular thyroid carcinoma with tracheal invasion:case report

ESC-ID: 867
Authors: Rondic M, Filipovic A
Country: Montenegro
University: Medical faculty of Podgorica , Department: General medicine

Introduction: Follicular carcinoma accounts for about 4 percents of all thyroid cancers, 20 percents of the patients are threatened by potential complications.Treacheal invasion by follicular carcinoma is the sign of an advanced process and a potentially high malignant tumour. Aim of the study was to present a cese report of a 65 year old female surgically treated for follicular thyroid carcinoma infiltrating front tracheal wall, left jugular vein and strap muscles.
Methods and materials: Data were obtained from anamnesis,clinical examination,laboratory analisys, ultrasonography examination,laringoscopy, chest X ray ,thyroid scintigraphy, CT csan, traheoscopy,surgical procedure,pathologist and histological report and follow up of the patients condition for three years.
Results: The patient came to the hospital with the presence of a growing thyroid nodule of the left lobe.The main symptoms were pain in the neck and growing tumour.Ultrasonic neck examination has shown a 8cm hypoechoic nodule in the left lobe.Thyroid scintigraphy showed a big cold nodule in the left lobe.CT scan has shown a tracheal infiltration without tracheal obstruction.Traheoscopy has shown 1cm wide space in the front part of the tracheal wall with malignant infiltration.An extended total thyroidectomy has been done,with left jugular vein,strap muscles and tracheal 2cm circular resection.The pathologist confirmed invasive follicular thyroid cancer. Follow up examinations include physical examination,thyroid hormones levels, chest X ray,cervical ultrasound and body scintiscan.After surgery the patient has been treated with radioiodine therapy once a year and permanent TSH suppressive therapy.Every six months the patient has been controlled .After more than three years the patient has no evidence of the reccurent disease.
Conclusion: Follicular invasive thyroid cancer with tracheal invasion is a rare malignant tumour.Early diagnosis and proper treatment remains a challenge.Radical resection of the tracheal infiltrating thyroid cancer with tracheal resection and termino-terminal anastomosis,followed by radioiodine therapy was a good choice of therapy for this patient.

A comparison of pedicle TRAM flap breast reconstruction using Laser Doppler with a common operation technique

ESC-ID: 1040
Authors: Pajeda A, Astrauskas T
Country: Lithuania
University: Kannas University of Medicine, Department: Plastic and reconstructive surgery

Aim: To introduce and evaluate a new technique in pedicle TRAM flap reconstruction using a Laser Doppler (LD) to achieve the maximal volume preservation of tissues. Tasks of the study were to reassure that: 1. the offered technique does not increase the risk of complications in postoperative period; 2. LD could provide a bigger volume of tissues in comparison with a common operation technique; 3. a new technique is easily applied.
Materials and Methods: During the year 2009 - 2010 there were 15 pedicle TRAM flap breast reconstructions performed in our clinic. All patients had a risk for complications of the first or the second degree according to Hartrampf's classification. 8 patients had undergone breast reconstruction based on the common technique (control group) and the rest 7 had undergone breast reconstruction using the LD (LD group). Complications in the early postoperative period related to the flap blood supply were evaluated in both groups. The volumes of the transplanted tissues and the tissues that could be transplanted without LD were compared in the LD group. The operating times in both groups were calculated and compared.
Results: There were no complications in the LD group in the early postoperative period while there was one marginal necrosis in the control group (12,5%); p=0,18. In all 7 cases in the LD group the volume of the transplanted tissues was greater than the volume that could be transplanted without LD. The operation took 200.71 (SD 45.86) minutes on average in the LD group and 169.37 (SD 25.41) minutes on average in the control group the difference of 31.34 minutes was not statistically significant. After a short instruction LD could be easily applied and the results could be clearly interpreted by a student.
Conclusions: 1. The offered technique does not increase the risk of postoperative complications when comparing with a common technique. 2. LD provides a possibility to preserve a bigger volume of tissues. 3. LD is easily applied and does not increase the duration of operation significantly.

Sleeve Gastrectomy as a new and safety bariatric operation for morbid obese patients: A retrospective study.

ESC-ID: 1070
Authors: Kayan OE, Tel C
Country: Turkey
University: Istanbul University , Department: Cerrahpasa Medical Faculty

Introduction: Sleeve gastectomy(SG) for treatment of morbid obesity is increasingly being used as a first-stage procedure of gastric bypass, and even more as an alternative to other restrictive procedures such as gastric banding. Recent studies have shown encouraging results during the first year with low morbidity and good quality of life.
Aim: In this study, we aimed to show that sleeve gastrectomy can be performed safely with a low rate complications.
Material and Methods: A retrospective review of collected data from two surgeons series for 2 years at Istanbul University Cerrahpasa Medical Faculty General Surgery Department.
Results: A total of 72 patients were treated with sleeve gastrectomy (SG) over a two-year period. 64 of 72 patients were treated with laparoscopic sleeve gastrectomy (LSG). 8 patients were treated with open surgery, 4 of 8 patients had gastric band operations history, the bands removed due to erosion development, other 4 patients had pyloroplasty history due to gastric ulcer. The mean preoperative body mass index (BMI) was 44.04±5, 72 kg/m2 . There were no incisional hernias, no port site hernias, no wound infections. In one patient, fistula developed, he treated with conservative treatment and hospitalized 31 days ..The average operating time was 58 min (45-90 min) and the mean hospital length of stay was 4.7 days (3-31 days). There were no deaths and no reoperations. Mean follow-up time was 11 months, at the end of 11 months the patients BMIs 35.64 ±3.76 kg/m2 . As an additional procedure; in 4 patients the gastric bands removed, in 2 patients incisional hernias operated and in one patient cholecystectomy performed.
Conclusion: Laparoscopic sleeve gastrectomy can be performed safely and with excellent weight loss. More long term follow up is required.

The effect of ischemic and chemical preconditioning on ischemic-reperfusion injury of small intestine

ESC-ID: 1089
Authors: Gajdos J, Bujdos M, Maretta M, Pomfy M, Varga J, Stasko P
Country: Slovakia
University: University of Pavol Jozef _afarik , Department: department of histology end embryology

Introduction and aim: Ischemic-reperfusion injury (IRI) of small intestine is a frequent complication of various diseases and some specific surgical interventions, e.g. intestinal transplantation. The extensive injury could reach multi organ failure witch is life-dangerous situation for patients and could be lethal. The aim of this experiment was to find out the impact of ischemic and chemical preconditioning on injury of small intestine caused by ischemia followed by reperfusion injury.
Methods and materials: Male Wistar rats (n=40) were divided in to 3 groups. In the first group was performed ischemic preconditioning (IPC, n=15). In the second group was performed chemical preconditioning, we applied i.v. glutamine (ChPC, n=15). The 1 hour ischemic attack followed by 30 minutes of preconditioning in both groups was carried out. Samples of jejunum were taken in time 1, 4, 8, 12 and 24 hour of reperfusion (T1, T4, T8, T12, T24). IRI without preconditioning was performed in control group (K, n=10). The histopathological injury was scored by Park/Chiu histological scoring scale. The changes in population of Paneth cells, goblet cells, EC-cells and intestinal stem cells were studied by the routine histological (H and E), histochemical (Alcian blue and Phloxine-Tartrazine technique) and immunohistochemical (Antiserotonine and Anti-Ki67 antibodies) methods.
Results: Results of our experimental work suggest that ischemic preconditioning could have positive impact to small intestine ischemic-reperfusion injury. The positive effect of i.v. glutamine application was revealed. The glutamine application form showed higher protection and proliferation capacity than ischemic preconditioning, particularly in earlier periods of reperfusion.
Conclusion: Both types of preconditionings decreased the damage of small intestine during ischemic-reperfusion injury. Their effects come up in different time. Their combination can be appropriate for application in clinical use. This work was supported by the grants APVV-0252-07 and VEGA 1/0369/09.

Aorto-bifemoral bypass- particulair situation

ESC-ID: 1148
Authors: Toma C, Marc E, Mreuta O.
Country: Romania
University: University of Medicine and Pharmacy Tirgu-Mures, Department: General Medicine

Introduction: Continuous science's development has allowed the aorto-bifemural bypass to become a challenge for vascular surgeons, especially if by overcoming the classic operative patterns the extraanatomic bypass can be avoided.
Method: We present four cases of patients operated in 2008 in the Surgical Clinic 1, Tirgu Mures, hospitalized throughout appointment. Three cases had complete Leriche syndrome (confirmed by examination of peripheral arteriography) and one case presented a history of obstructed aortobifemural bypass (preformed three years ago). The lack of associated organ disorder (hypotension, which could become a contraindication of performing the intervention) leaded at the decision of performing the aortobifemural bypass, at the expense of axilofemural. Will describe the technique of the intervention.
Results: The postoperative evaluation of patients was favorable, without early and late complications, patients being discharged 10 days postoperatively.
Conclusion: The peculiarity of the 4 cases is represented by successfully performing the aorto-bifemural bypass in modified from the classic pattern conditions (preparation of the aorta above the celiac trunk, its clipping for 12 minutes, cutting diaphragm's pillars, passage of the graft through retropancreatic tunnel) and last, but not least,

favorable evolution of patients with their discharge 10 days postoperatively.

Medical case of localization of melanoma in a parotid gland

ESC-ID: 1224
Authors: Vlasenko YE, Grygorov S, Rak A, Dontsova D
Country: Ukraine
University: Kharkiv National Medical University , Department: Department of Oral and Maxillofacial Surgery

Melanoma is a tumour composed of chromogenic cells. According to the data of Health Ministry of Ukraine it presents 2-2,5% in the structure of cancerous diseases. Cutaneous coverings of head and neck are affected by that in 30-50% of cases. Therefore this problem is a subject of intent studies by allied specialists: oncologists, ophthalmologists, otorhinolaryngologists, also including maxillofacial surgeons. This type of tumour is characterized by expressed aggressiveness of growth, tendency to early metastasizing, mainly to parotid, jugular, submandibular, and occipital lymph nodes. Single instances of parotid gland melanomas, which are described in domestic literature, present the subject for discussion concerning their origin. N.N. Petrov (1952) thinks that chromogenic tumours of such localization occur rare, exceptionally as metastases or as a result of infiltration of skin by primary tumour. Whereas in the foreign literature there are detailed descriptions of primary parotid gland melanomas. Green and Berner (1961) consider it to be quite explicable, because melanoblasts are the permanent element of oral cavity lining. Therefore during embryonal development pigment cells can become the component of gland parenchyma. The aim was to demonstrate our observation, which is necessary because the tumour is notable for aggressive growth, and only early diagnostics and corresponding treatment can ensure positive result.

Methods and materials: Study of melanoma of parotid gland by a patient, female, aged 46, was carried out. Patient's medical history was examined. Close study of various parts of melanoma was made after subtotal resection of parotid gland. Histological study was held. Scientific literature concerning the given problem was analyzed.

Results: Patient, female, aged 46, appealed to the clinic of maxillofacial surgery of Kharkiv National Medical University with complaints about occurrence of painful swelling in the left parotid-masticatory region, and abnormality of configuration of face. From anamnesis: the swelling appeared approximately 4 months ago, it was slowly increasing; subjective sensations in this anatomical region were absent. From life history: 2 years ago the patient was operated for melanoma of the left superior eyelid; 5,5 years ago - for melanoma of lumbar region. During clinical-laboratory examination there was detected a neoplasm of the left parotid gland sized 633 cm with hypoechoic heterogeneous structure and sharp contours. By puncture biopsy lymphohistiocytic complexes in the punctate were detected. Subtotal resection of parotid gland was held; the branches of facial nerve were not preserved because they were involved to the tumour node. The tumour tissue was black on the incision; intraoperatively made diagnosis: melanoma. Histological report: melanoblastoma of parotid gland. Postoperative period took its normal course. During 3 years examination no relapse was detected.

Conclusion: The given observation is of interest from several points of view. Firstly, this is the three-fold occurrence of melanoma in various body areas, which cannot be considered as relapse or metastasis. Secondly, localization of the neoplasm in parotid gland deserves attention – it can be observed as a primary tumour process, or as a metastasis of lymphogenous origin.

Author Index

ESCID	Name, Firstname	Page
659	Abdolkarimi, Amir	61
681	Abdulrasool, Mahmood	106
1388	Abrishami, Yalda	148
1120	Adams, Claire	155
1067	Adepoju, Paul	200
751	Aghazadeh, Samaneh	36
834	Agrawal, Mridul	86
801	Ahmadashrafi, Saeb	179
1060	Ahmed, Bilawal	118
1434	Ahsan, Fadhil	93
1263	Akhavan, Homa	73
678	Alaali, Ali	105
1176	Alagboso, Chibuike	92
1097	Alai, Arefeh a.c.	38
1479	Alanazi, Ohud	171
668	Albulescu, Vlad ioan	82
494	Alekseenko, Taras	94
521	Al-hammad, Fatimah	230
916	Alizadeh, Fatemeh	25
884	Aminolsharieh najafi, Soroosh	25
743	Amkhanitskaya, Liubov	146
1413	Anand, Tanmay	120
1116	Anashkina. Ecatherina	12
1092	Andjelkovic, Marija	41
893	Andrijasevic, Vuk	6
820	Andriychuk, Denys	169
1273	Anosovs, Ivans	57
1348	Antikchi, Mahnaz	171
826	Assefi, Melika	62
1254	Atamanyuk, Vasyl	17
1387	Azizi, Ehsan	96
1172	Bains, Rasneer	176
1186	Baitsova, Natallia	119
788	Bajec, Andrej	231
1324	Ballachanda subbaiah, Taaran cariappa	103
526	Baltabayev, Alidzhon	59
658	Barati, Vahid	110
1296	Barbati, Mohammad esmaeil	126
876	Bargiela, David	128
1465	Barnard, Jandri	196
1181	Bartakova, Jana	68
940	Bazvand, Fatemeh	169
829	Beckett, Kirsty	50
670	Bedekovics, Judit	94
994	Behmagham, Elmira	67
664	Bejinariu, Alexandru gabriel	178
1416	Beleva, Elina	97
1048	Belic, Jelena	16
1139	Bengulescu, Iustinian-michael	228
791	Berchtold, Christina	101
1485	Bergholz, Robert	79
1190	Bezna, Maria cristina	7
1131	Biletska, Polina	147
778	Bilgin, Huseyin	100
805	Blecharczyk, Bernadetta	168
1042	Bobic, Vanja	160
1159	Bobilca, Vladiana romina	31
1342	Bogicevic, Aleksandar	140
699	Böhrsch, Verena	10
1472	Bojovic, Ognjen	8
1147	Bolkheir, Alireza	109
1437	Booij, Harmen	88
614	Branisteanu, Stefana catalina	152
1365	Brazauskas, Paulius	202
1292	Brisan, Cosmin-stefan	74
485	Brohet, Kartika	54
514	Budyńko, Łukasz	54
497	Bügel, Victor	70
1350	Buja, Andrei	28
676	Burganova, Guzel	61
1287	Buszman, Piotr	22
1332	Capo, Ivan	161
1275	Cardini, Benno	224
1111	Cardoso, Ana	56
1457	Castro ferreira, Ricardo	24
704	Cerbin, Magdalena	179
912	Chiniforush, Nasim	37
593	Chubukova, Tatsiana	70
1463	Ciocanea, Cristina ioana	78
896	Ciudin, Tatiana	111
1179	Colic, Jelena	34
746	Coric, Vesna	122
1079	Cosgarea, Ioana	51
761	Cosma, Mihaela laura	94
1027	Cozar, Octavian	221
656	Crisan, Diana	40
481	Curle, Jennifer	84
1460	Cvetinovic, Natasa	126
1260	Cvijovic, Andrijana	218
1318	Czeczko, Katarzyna	229
1192	Dabbas, Dina	113
1223	Dabetic, Ivan	223
1012	Daftaribesheli, Laleh	2
504	Dashti, Ali	230
1358	David, Alexandra	4
519	Davidyan, Liana	79
1189	Demian, Alecsandra Iulia	124
804	Dumic, Igor	110
1229	Dikic, Marija	81
639	Dimitrijevic, Sanja	40
601	Djordjevic, Ivana	74
642	Djurovic, Svetlana	116

ESCID	Name, Firstname	Page
1403	Dobosz, Lukasz	97
673	Döhnert, Nora	226
1423	Donada, Marisa	157
962	Dormandy, Letitia	72
671	Dörr, Jan rafael	85
1432	Dos santos rocha, André alexandre	88
1154	Dreischarf, Marcel	150
1204	Duda, Dominika	21
901	Duicu, Oana	184
1256	Dýkyol, Murvet	170
1009	Eajazi, Alireza	149
828	Egervari, Gabor	86
1234	Eisenlöffel, Christian	176
1431	Ellwood, Alison	77
927	El-shaarawy, Omar	62
1369	Erlangga, Zulrahman	93
1128	Erþan, Tezcan	138
1127	Erþan, Nurcan	228
1078	Eyvaz ziaee, Ayda	37
480	Fabera, Petr	136
841	Fakhri, Mohammad	209
964	Fallah, Nazanin	112
1136	Fallahian, Faranak	13
733	Fallahzadeh abarghouei, Mohammad kazem	122
1285	Fandler, Martin	201
1222	Farina, Piero	222
544	Farkashdi, Shandor	35
1470	Fidut, Joanna	151
871	Figueiredo pinto, Duarte gabriel	184
1385	Filonenko, Kateryna	208
785	Flor de Lima, Barbara	110
770	Foersch, Sebastian	65
1164	Foerstera, Benjamin	130
939	Foroozia, Maryam	37
1233	Francuz, Pawel	21
1135	Fróis, Mariana	119
1001	Fustos, Tiberiu	67
929	Gachechiladze, Mariam	159
1089	Gajdoš, Juraj	233
776	Gajic, Ivana	158
1328	Gajzlerska, Wanda	58
486	Galasso, Marco	152
1274	Ganji, Morsaleh	229
1438	Garg, Alok	115
1476	Garic, Natalija	53
1447	Georgievska, Bisera	98
708	Gerhardt, Anne	85
1440	Ghasemi-rad, Mohammad	78
1278	Ghourchian, Shadi	211
882	Gjeorgjievski, Mihajlo	55
735	Gluhovic, Milan	2
1183	Göhrig, Andreas	47
1146	Golabchi, Allahyar	33
1443	Golabchi, Khodayar	140
1219	Gorbachova,Elena vladimirovna	147
660	Goudarzi, Arash	164
889	Govinden, Kughan	180
993	Govorukha, Mariia	195
655	Grabowski, Katja	189
692	Gradil, Oksana	75
585	Grandi, Giovanni	74
1382	Gudlavalleti, Aashrai sai venkat	192
1424	Gulo, Greta selfani	98
537	Gusic, Nina	209
1359	Gyero, Reka	161
1110	Halak, Tomasz	33
1168	Halyna, Arych	218
1481	Hamashima, Yuri	197
502	Hasan, Zeeshaan	104
1361	Hassani, Reza	69
780	Hedesan, Oana-cristina	154
817	Heinz, Cilly	90
734	Hetze, Susann	128
1333	Hinic, Natasa	182
1035	Hlozan, Vanja	15
640	Hoang, Ha thi	127
1464	Hoffmann, Andrea	148
1235	Hossein shahi, Davood	200
806	Hulali, Malaka	61
648	Hussain, Muhammad	193
1325	Ibrahimi, Pranvera	23
1326	Ilic, Jelena	192
1093	Ilie, Roxana zoe	228
1305	Ion, Ioana	92
1007	Iorga, Otilia	62
505	Ivan, Cristina	121
1478	Ivanisevic, Ivana	171
1169	Ivetic, Olga	191
1028	Ivkovic, Ivan	14
583	Jablonska, Dorota	30
905	Jafari, Naser	180
515	Jancic, Nina	44
1469	Janikowska, Karolina	151
1480	Janjic, Tijana	83
1245	Jayasekera, Menaka	150
1185	Jelic, Jasmina	155
646	Jelonek, Michal	19
1341	Jokovic, Zorica	212
568	Jonovic, Sanja	29
477	Joodi, Golsa	136
986	Jovanovic, Milan	6
1023	Jovanovic, Tijana	56
570	Jovanovic, Aneta	157
1433	Jovicic, Milica	135
1420	Jurca, Maja	58
1075	Jurczak, Maciej	227
1279	Kaadan, M. ihsan	201
559	Kaczmarska, Dorota	55

ESCID	Name, Firstname	Page
1008	Kalar, Musleh uddin	195
1024	Kalashnikov, Aleksey	77
1132	Kálmán, Sára	191
564	Kalman jr, Janos	188
1412	Kapoor, Rachit	73
944	Karaca, Irmak	129
1248	Karamalakova, Yanka	181
1366	Kaur, Gurmeen	29
1070	Kayan, Ozcan ekin	233
1373	Kazemitabrizi, Negar	120
1155	Kedzierawska, Sylwia	3
796	Kelderman, Sander	101
740	Ketabi, Damon	198
752	Khaja roman, Shariff	65
543	Khaliqdina, Salman ali jehangir	1
895	Khammarnia, Mohammad	199
1422	Khare, Amitesh	121
1038	Kharlamov, Alexandr	124
856	Khawaja, Saleem	55
1371	Khazanehdari, Shahab	42
758	Kholodnova, Mariya	204
654	Klaus, Pascal	100
976	Klein, Ines	165
488	Klockmeier, Konrad	59
1271	Knegt, Yas	82
1397	Kocsi, Szilvia	4
914	Köhler, Lasse	103
1334	Kollár, Szonja	167
1138	Koltsova, Larisa	108
689	Kombaka, Alwyn ombaka	141
1315	Konkolewska, Magda	28
1461	Kooraki, Soheil	213
712	Kopani, Martin	158
1061	Kovacevich, Fedja	3
1203	Kowalik, Agata	114
701	Kozlovskyi, Vadim	173
1142	Krapf, Christoph	222
587	Krasnov, Maksym	105
744	Kratzsch, Tobias	142
1368	Krejci, Jakub	162
617	Kriks, Aleksandra	44
522	Kristev, Sergei	172
1000	Kristóf, Endre károly	11
1030	Krokosh, Inna	154
890	Krotkova, Olga	102
722	Kryeziu, Manushaqe	117
1250	Kryvetskyi, Igor	7
1319	Kuncaite, Giedre	202
561	Kurgyis, Zsuzsanna	40
777	Kuritsyna, Maria	36
811	Kusic, Jovana	107
754	Kuzmanovic, Ana	137
1141	Lalosevic, Jovan	42
690	Latoch, Eryk	164
1103	Liang, Zhen chang	51
1182	Liountmila, Astasidi	6
636	Lojek, Magdalena	84
1173	Luculescu, Maria-daniela	16
1144	Lyko, Dorota	53
965	Maduka, Ishara	194
1351	Mahboobi, Nastaran	167
1196	Mahdanian, Abolfazl	133
923	Mahdavi anari, Ali akbar	210
961	Maina, Patrick	32
682	Majcan, Maja	5
1322	Majewski, Marcin	145
489	Maksimovic, Ivana	24
1090	Manzar, Nabeel	147
1087	Manzar, Bushra	170
827	Marchuk, Volodymyr	5
807	Mardani, Samira	137
1313	Marinas, Andreea-elena	170
1316	Marinas , Marius-cristian	83
628	Markovic, Danica	10
685	Maroldt, Julia	89
621	Martinkevich, Olga	71
846	Marusyk, Halyna	111
1314	Masoomi ,Reza	182
1418	Mathur, Rahul	135
1242	Matkovic, Milos	223
1011	Mavija, Srdjan	63
920	Mazuch, Jeannine	103
607	Mazur, Danuta	60
702	Mcguire, Ryan	193
1284	Mendonça, Luís	188
576	Mendoza udin, Alexandr	220
968	Meshkat razavi, Gity	210
1215	Meskar, Hossein	139
1384	Mihaylova, Stiliana	145
847	Mikhaliev, Kyrylo	25
1209	Milicev, Milena	138
612	Miljevic, Jovana	13
476	Miljkovic, Dejan	157
1401	Milosevic, Branislav	97
574	Milovanova, Ekaterina	220
618	Minić, Ivan	49
739	Misic, Jovan	154
1175	Mitica, Simona lavinia	13
1262	Mitrovic, Aleksandar	81
843	Mitrovic, Goran	227
596	Mladenovic, Ivan	49
1121	Moaddab, Mehrnaz	196
1118	Moaddab, Amir hossein	221
1448	Moein aghtaei, Parisa	136
493	Mohamadi, Zahra	116
1050	Moheimani, Hamid reza	27
1162	Mohor, Simona	160
1389	Mojtahed, Mohammad	52

ESCID	Name, Firstname	Page
1429	Mojtahed, Ali	151
683	Moreira, Sónia	216
1002	Morgan, William	129
1225	Moric, Anja	139
783	Mortazavi, Seyede salehe	198
487	Mosteoru, Svetlana liliana	230
1015	Mozafarpour, Sarah	166
1232	Mraz, Milos	48
1272	Munish, Kanika	69
1205	Mygovych, Vira	207
1345	Nair, Vineet	23
604	Nakov, Radislav	64
1025	Namiranian, Parva	169
1210	Nazarbeiki, Saeed	138
1086	Nebesna, Tetiana	174
956	Nechipai, Zhanna	45
959	Necula, Adrian	14
1400	Nedelcut, Dan-sebastian	64
1094	Nedeljkovic, Sanja	53
717	Neupane, Maniraj	190
1406	Neves, Joao sergio	177
634	Nia, Amir m.	19
613	Niagu, Stefania ruxandra	231
984	Nikitenko, Natalia	87
1053	Nikolic, Nada	12
772	Nikolic, Zeljka	107
1293	Nikolic, Ana	48
705	Nikolic, Maja	50
1354	Nitu scaueru, Stefan grigore	156
693	Nobahari, Sina	189
721	Nouriankafshgari, Saeed	30
902	Novakovic, Marko	118
839	Novotny, Tomas	158
1258	Obradovic, Jovana	114
971	Ohri, Shreya	80
1320	Oláh, Orsolya	17
1073	Oleszak, Tomasz	32
1335	Oliveira-pinto, José	18
911	Omipidan, Suleiman	123
1446	Onofrei, Alexandra	73
1088	Onutu, Ramona	200
795	Oren, Beyza	199
1276	Orlik, Bartlomiej	22
819	Orthmann, Andrea	174
766	Osadchinskiy, Alexandr	231
1191	Osain Welcome, Menizibeya	133
874	Ostojic, Milica	66
1045	Ozgan, Ayse yasemin	91
1321	Paczkowski, Konrad	166
1040	Pajeda, Andrius	232
1307	Panahipour, Saman	148
967	Parhizgar, Seyed ehsan	190
510	Parvu, Daniela Adriana	146
1049	Paschke, Lukasz	186
887	Patyey, Peter	107
992	Peckauskas, Aurimas	26
1473	Persson, Linn	141
931	Petkeviciute, Zivile	180
518	Petrovic, Hristina	64
1218	Petrovitch, Olga	57
973	Petrusaite, Augusta	211
970	Petrut, Mihail-cosmin	123
883	Pfisterer, Katharina	90
725	Pinto, Manuel	184
957	Pirbodaghi, Tohid	20
687	Pirvu, Tatiana	149
600	Pjevac, Sandra	52
1156	Pjevalica, Jelena	175
1458	Pobedonna, Tetiana	208
1526	Pohland, Martin	141
763	Pojskic, Mirza	142
1161	Polchow, Bianca	20
1194	Popov, Deyan	187
1149	Pouli, Dimitra	91
1034	Powell, Matthew	130
803	Preunca, Bogdan mircea	217
1171	Prica, Marko	68
1170	Prysyazhnyk, Vasyl	46
1310	Przybek, Joanna	134
479	Radakovic, Darko	69
1355	Radakovic, Dejan	182
1336	Radeka, Tatjana	134
1217	Radon, Anja-maria	144
603	Raducan, Andreea	183
669	Rai, Balwant	53
1467	Rancic, Ivan	163
616	Randjelovic, Marina	9
802	Ranosz, Pawel	31
1148	Ratiu, Roxana	233
498	Ravishankar, Aarthi	225
550	Raz, Yotam	99
546	Raza, Sajjad	44
1041	Reichardt, Anne	26
1286	Reiffurth, Clemens	131
975	Remesovãj, Tereza	76
1174	Ribeiro, Sofia	91
680	Ribeiro, Ana	215
960	Riyahi alam, Mohammad sadjjad	210
1375	Roach, Emir charles	58
867	Rondic, Mirela	232
1033	Ryba, Agnieszka	206
850	Rykhlitska, Kateryna	204
873	Saadipoor, Afshin	209
1509	Sabahi Mohammadi, Zahra	115
506	Sabel, Bastian	1
1228	Saberinejad, Aliakbar	125
1267	Sachdeva, Manish	81
565	Sadowska, Alicja	226

ESCID	Name, Firstname	Page
1124	Safizadeh, Fatemeh	181
1399	Sajjad, Hassan	203
750	Salehi, Maryam	194
784	Sana, Maria elena	71
809	Santer, Peter	227
774	Saritas, Turgay	122
1417	Sattwika, Prenali Dwisthi	7
1452	Sayahpour, Sahar	52
870	Schlemm, Ludwig	72
492	Schmid, Felicitas	43
638	Schreiner, Simon	127
1004	Selmeczi, Anna	87
1072	Ser, Ozgur selim	16
738	Shah, Syed mohsin mahmood	198
861	Shala, Kushtrim	87
1207	Shapoval, Oksana	47
1059	Shastry, Soudhamini	160
562	Shchuchko, Anatoli	163
1115	Shestopalov, Maxim	38
1020	Shikhzadeh, Abdolsamad	76
897	Sipovac, Dragana	112
711	Sisovsky, Vladimir	75
592	Skakic, Aleksandar	60
768	Sklenarova, Zuzana	14
800	Skowronek, Jacek	19
1051	Smiljanic, Milena	3
1080	Smoczyńska-marczak, Marta	38
779	Smorodchenko, Anna	216
633	Sobiech, Matylda	178
524	Sokal, Andrei	99
1202	Sokolowski, Lukasz	218
1502	Soltanpour, Narges	5
985	Sotirovic, Vuk	220
1114	Sousa, David	167
767	Spasic, Svetolik	143
1475	Sri-ganeshan, Muhuntha	121
623	Stachowicz, Teresa	164
1047	Stanic, Dragana	130
866	Stankovic, Petar	50
810	Stankovic, Iva	132
718	Stankovic, Jelena	153
1106	Stevanovic, Ana	42
1054	Stojanov, Aleksandar	51
602	Stojanovic, Milos	9
875	Stojanovic, Milovan	45
597	Stojiljkovic, Milan	8
860	Stojkovic, Tijana	71
1180	Stojkovic, Milica	211
979	Stulic, Milos	66
1198	Sturza, Adrian	187
1098	Sumirat, Ratih nurdiany	33
1016	Surani, Arif Anwer	205
1018	Surani, Asif	206
1386	Suresh, Marian	104
1360	Svehlik, Vojtech	162
1239	Swoboda, Ryszard	125
1065	Szabo, Pavol	41
1201	Sztylc, Jacek	114
1346	Tabatabaei, Seyed vahid	63
1381	Taheri nejad, Mohammadreza	18
1291	Tan, Shaun shi yan	224
540	Tarasik, Alexandr	219
881	Tataryan, Karine	132
1246	Tatic, Milan	156
1123	Teimoori shaban, Mojtaba	113
1226	Tengryd, Christoffer	139
963	Teteloshvili, Nato	217
786	Thaiss, Wolfgang	101
793	Thakur, Nikhil	31
491	Tham, Manuela	215
523	Thurkkaram, Iyampillay	39
1491	Timbrell, Simon	208
610	Tirziu, Razvan	231
831	Tishko, Dmytro	90
955	Todoriko, Liliia	205
1125	Toldi, Gergely	77
983	Tomasevic, Tina	185
731	Tomic, Marko	11
1289	Tóth, Vivien	212
1091	Totorean, Alin-florin	27
1126	Tran, Luc	67
560	Traykova, Martina	126
586	Trofor, Letitia	203
1459	Trofymets, Dmytro	43
1167	Tschirner, Anika	28
1199	Ukleja, Natalia	206
649	Ullah, Ehsan	80
1101	Ullah, Faizan	119
483	Ullah, Hamid	172
1295	Urbanski, Bartlomiej	144
554	Usturoi, Igor	2
1200	V. Pereverzeva, Elena	192
1066	Valliani, Arif	32
1026	Varentsov, Vyacheslav	186
808	Varughese, Jobin k.	143
484	Vasilic, Zoran	214
1297	Vasques-nóvoa, Francisco	18
1377	Veldhuijzen van zanten, Sophie	95
1057	Verhoeven, Sarah	108
1455	Vesela, Romana	98
1427	Vinatu, Vlad-florin	35
1224	Vlasenko, Yevgeniya	234
998	Voloshin, Andrey	174
674	Vorderwülbecke, Bernd	183
1428	Vostinic, Vukasin	39
924	Vujanic, Tijana	80
1240	Vuksanovic, Milena	134
588	Wakabi, Kevin	105

ESCID	Name, Firstname	Page
972	Waseem, Hafiz muhammad	181
1337	Weiss, Gunter	219
818	Wendt, Sabrina	11
1356	Wibowo, Mochammad Fadjar	202
1441	Woloszyn, Maria	145
707	Wowra, Bogumil	173
913	Wright, Thomas	185
688	Wulf, Marie-Angela	153
474	Yeo, Yee hui	89
1044	Zabar, Kristina	132
864	Zabolotna, Iryna	159
631	Zagorodnyy, Maksym	30
756	Zahid, Sohaib	204
1352	Zaidan, Hind	177
1252	Zakharchenko, Ekaterina	177
1238	Zarei, Mina	95
581	Zaric, Nenad	131
1037	Zarkovic, Boris	190
538	Zavgorodnia, Nataliia	168
478	Zdraljevic, Natasa	214
694	Zeeshan, Ali	193
667	Zeeshan, Yousuf	197
1468	Zekovic, Ana	83
1046	Zemleduch, Tomasz	46
1257	Zivkovic, Ivana	223
977	Zschiegner, Marcus	165
1390	Zupan, Anja	96