

Abstracts of the 24th Annual Scientific Meeting of Indonesian Heart Association 2015 (24th ASMIHA) Jakarta, Indonesia, April 10th – 12th, 2015

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I. Young Investigator Awards Finalists

YIA 1. Association between Myeloperoxidase Level and Vulnerable Plaque Marked with Napkin Ring Sign in Stable Angina Pectoris

Ade Widyastuti, Manoefris Kasim A, Sony Hilal Wicaksono, Anwar Santoso, and Amiliana Mardiani Soesanto

National Cardiovascular Centre Harapan Kita, Jakarta, Indonesia

Abstract

Background: Coronary Heart Disease (CHD) is still the major health problem in worldwide.

Atherosclerosis is a chronic inflammatory process where oxidative damage play a role in atherosclerosis. Overexpression of Reactive Oxygen Species (ROS) could be detrimental and weaken the plaque. This type of plaque is often referred to as a vulnerable plaque. Reactive oxygen or nitrogen species, and HOCL (hypochlorous acid) are responsible for plaque vulnerability which leads to Acute Coronary Syndrome (ACS). HOCL is a substrat of Myeloperoxidase (MPO). MPO is a member of the heme peroxidase superfamily, which generates reactive oxidants and contributes to plaque vulnerability. Coronary Computed Tomography Angiography (CCTA) is a non invasive modality which able to identify morphology of vulnerable plaque. Napkin-Ring Sign (NRS) has been associated with high-risk plaques in several studies.

Methods: A cross sectional study in 41 patients stable angina pectoris was done. The subjects was taken blood sample and underwent CCTA to evaluate NRS in National Cardiovascular Center Harapan Kita from June to November 2014. Statistical analysis is done to explore the association between MPO and vulnerable plaque marked with NRS in stable angina pectoris.

Results: There was association between MPO level with vulnerable plaque marked with Napkin Ring Sign, p value 0,002, CI 95% 2.3, 0 - 39.9. Level of MPO is higher in positif NRS vs non NRS (nmol) 124,371 + 15,324 vs 105,206 + 18,335. Logistic regression analysis showed level of MPO \geq 117,2 nmol (median), OR 9,6 (CI95% 2,3 -39) p value 0,002. After adjustment with confounding factors MPO level \geq 117,2 nmol (median), OR 20,3 (IK 95% 3,1-31,7), p value 0,002.

Conclusion: There was strong association between Myeloperoxidase level with vulnerable plaque marked with Napkin Ring Sign in stable angina pectoris.

Keywords: atherosclerosis, vulnerable plaque, myeloperoxidase, Napkin Ring Sign.

YIA 2. 279^{Val→Phe} Polymorphism of Lipoprotein-associated Phospholipase A₂ Resulted in Changes of Folding Kinetics and Recognition to Substrate

Ainun Nizar Masbuchin, Mohammad Saifur Rohman, Miryanti Cahyaningtyas, Jayarani Fatimah Putri, Nashi Widodo

Departement of Cardiology and Vascular Medicine, Brawijaya University, Malang, Indonesia.

Abstract

Background: Lipoprotein-associated phospholipase A₂ (Lp-PLA₂), encoded by *PLA2G7*, is an enzyme involved in generation of pro-inflammatory products in atherosclerotic plaques. It has been consistently associated with increased risk for coronary artery disease (CAD) in Asian population. 279^{Val→Phe} variant was reported to have a protective role against CAD due to, in part, secretion defect or loss of enzymatic function. We therefore investigate folding kinetics and substrate recognition pattern in 279^{Val→Phe}.

Methods: Polymorphisms were detected by genotyping among 111 acute myocardial infarction patients and 40 controls. Folding simulation of Lp-PLA₂ was performed using GROMACS software by assessing helicity, hydrogen bond formation and stability, and hydrophobicity. The interactions of Lp-PLA₂ and substrate were simulated using Autodock 4.0-based Pyrx software followed by enzyme stability analysis using molecular dynamics with YASARA software.

Result: Polymorphism of 279^{Val→Phe} was represented by the change of nucleotide from G to T of 994th *PLA2G7* gene. The folding simulation suggested a decreased percentage of α -helix, hydrogen bond formation, hydrogen bond stability and hydrophobicity in 279^{Val→Phe}. 279^{Val→Phe} recognized the acetate group instead of phosphocholine as observed in 279 valine. Molecular dynamics simulations also indicated that 279^{Val→Phe} Polymorphism resulted in unstable binding to the substrate and decrease the enzymatic activity. These molecular dynamic results supported a protected effect of 279^{Val→Phe} Polymorphism showed by the odd ratio for AMI of 0.34 (CI 95% 1.75–0.065) in this study.

Conclusion: 279^{Val→Phe} Polymorphism of Lp-PLA₂ may lead to decrease the enzymatic activity via changes of folding kinetics and recognition to its substrate.

Keywords: Lp-PLA₂, Polymorphism, enzymatic activity, folding kinetic.

YIA 3. Hypoxic Preconditioning Effects on Cultured Bone Marrow-Derived Mesenchymal Stem Cells to the Expression of CD31+, Vascular Endothelial Growth Factor-A and Stromal-Derived Factor-1 Alpha

Akhtar F. Muzakkir and I Gde R. Suryawan

Departement of Cardiology and Vascular Medicine, Soetomo General Hospital, Airlangga University, Surabaya, Indonesia

Abstract

Background: Angiogenic potential plays a key role in myocardial regeneration process through paracrine effects. However, lethal hypoxia such as in ischemic heart disease will diminish these effects. Hypoxic preconditioning is a strategy to optimize the benefit of this therapy in severe hypoxia.

Methods: This is an in vitro true experimental post-test only study with control group design. The BMSCs were isolated from Wistar strain rats and were cultured in -MEM until passage 3. Then, the BMSCs samples were put into control group with O₂ 21% and hypoxic group with O₂ 1% and were cultured in 48 hours.

Flowcytometry was performed to identify the expression of CD105⁺ and CD34⁺. The CD31⁺ and VEGF-A expression was observed by immunocytochemistry whereas the VEGF-A and SDF-1 α concentration was evaluated by ELISA.

Results: BMSCs identification revealed expression of CD105⁺ and CD34⁺ in both groups. The results from FITC staining showed negative expression of CD31 whereas the VEGF-A expression showed that the hypoxic group significantly expressed VEGF-A compared to control group. The ELISA for VEGF-A and SDF-1 α demonstrated a significant increase in mean concentration in hypoxic group compare to control group (182.6911.09 pg/ml vs 145.877.15 pg/ml, $p < 0.0001$ in VEGF-A; 9.6941.638 pg/ml vs 4.5290.313 pg/ml, $p < 0.0001$ in SDF-1 α).

Conclusion: Stimulation of HPC in BMSCs increases the angiogenic and cell migration potential. This study demonstrate negative expression of CD31 which showed the ability of BMSCs to maintain its undifferentiated state and pluripotency. Keywords: hypoxic preconditioning, angiogenesis, CD31, VEGF, SDF-1 α .

YIA 4. Pre Operative Endothelin-1 level Correlates with Systolic Pulmonary Artery Pressure after Mitral Valve Surgery in Patients with Mitral Stenosis

Dyna Evalina Syahlul, Amiliana Mardiani Soesanto, Suko Adiarto

*Department of Cardiology and Vascular Medicine,
Faculty of Medicine, University of Indonesia*

National Cardiovascular Centre Harapan Kita, Jakarta, Indonesia

Abstract

Background: Pulmonary hypertension (PH) is a frequent complication of Mitral Stenosis (MS). It can occur due to passive transmission of elevated pulmonary vein pressure or reactive vasoconstriction process of pulmonary vascular bed which leads to PH out of proportion or reactive PH. Endothelial dysfunction plays a significant role in reactive PH through the production of vasoactive mediators such as Endothelin-1 (ET-1). After mitral surgery, some patients with reactive PH do not experience instant reduction of pulmonary artery pressure (PAP). This study would like to evaluate whether pre-operative ET-1 correlates with post surgical PAP after mitral valve surgery in patient with MS.

Methods: Thirty two patients with severe MS and at least moderate PH who underwent successful mitral valve surgery in National Cardiovascular Center Harapan Kita from April to November 2014 were enrolled in the study. Correlation between pre-operative ET-1 derived from pulmonary vein blood and post surgical systolic PAP is evaluated.

Results: There was correlation between pre-operative ET-1 with post surgical systolic PAP after surgery (r 0.387; p 0.029). Linear regression analysis of pre surgery ET-1 with post surgical systolic PAP adjusted to age, sex, hypertension, diabetes mellitus, dyslipidemia atrial, fibrillation, aortic cross clamp time and cardio-pulmonary bypass time confirm the correlation between those two variables with β coefficient 11,4 (95% CI 2.9-19.9 ; p 0.011)

Conclusion: Pre-operative ET-1 is correlated with post surgical systolic PAP after mitral valve surgery in MS

Keywords: mitral stenosis, pulmonary hypertension, endothelin-1.

YIA 5. Comparison of Apolipoprotein B Serum Level TO Coronary Collateral Circulation in Male with Coronary Artery Disease

Firman Leksmono, Melani Karina, Idar Mappangara, Peter Kabo

*Department of Cardiology and Vascular Medicine,
Hasanuddin University, Makassar, Indonesia*

Abstract

Background: Coronary collateral circulation plays an important role in protecting myocardium from ischemia and reducing cardiovascular events. High apolipoprotein B serum level is a strong risk factor for coronary artery disease (CAD) and is associated with poor cardiovascular outcome. It was recently reported to be associated with poor coronary collateral development.

Objectives: We investigated comparison apolipoprotein B serum level to coronary collateral circulation degree in male patients with CAD.

Methods: We evaluated 57 consecutive male patients undergoing coronary angiography were finally analyzed. The collateral scoring system developed by Cohen and Rentrop was used to classify patient groups as those with poor or good collaterals. Apolipoprotein B serum level was used to classify patient groups as those with normal and increased level.

Results: There was significant difference in apolipoprotein B serum level between good and poor collaterals ($p=0.000$). The patients with increased of apolipoprotein B serum level had poor coronary collateral circulation ($p=0.006$; OR=0.198; CI 95% 0.062-0.627). Multivariate analysis showed only apolipoprotein B serum level (OR=0.952; $p=0.000$) was a significant predictor of poor collateral development.

Conclusions: The patients with increased of apolipoprotein B serum level had poor coronary collateral circulation. Apolipoprotein B serum level was the most powerful predictor of coronary collateral circulation degree in patients with CAD.

Keywords: Apolipoprotein B serum, Coronary artery disease, Coronary collateral circulation.

YIA 6. VAMP-8 Gene Variant is Associated with Myocardial Infarction Among Smoker Patients

Rina Y¹, M. Saifur R¹, Widodo², Agil W²,
Andi W¹, Miryanti C¹, Yanna I¹

¹ *Department of Cardiology and Vascular Medicine, Faculty of Medicine,
University of Brawijaya/ Saiful Anwar Hospital, Malang, Indonesia*

² *Biology Departement, Faculty of Mathematics and Science,
University of Brawijaya, Malang, Indonesia*

Abstract

Background: Synaptobrevins/Vesicle-associated membrane protein (VAMP)-8 encodes a vesicle docking protein required for platelet-dense granule secretion and contributes to sustained platelet aggregation and clot formation, the process contributes to myocardial infarction. This study aimed to investigate whether gene polymorphism of VAMP-8 associated with acute myocardial infarction (AMI)

Methods: One hundred and fifty male myocardial infarction and 40 male littermate controls were recruited in this study. Patients presented with septic condition, diabetes mellitus, chronic kidney disease, on simvastatin treatment were excluded. Polymerase chain reaction-restriction fragment length polymorphism (PCR-RFLP) was used to detect the 3'untranslated region single nucleotide polymorphism (SNP) of VAMP-8 gene

Results: In AMI patient, polymorphism of the 3'untranslated region VAMP-8 gene was observed with the combination of AA, AG and GG genotypes 30.4, 42.9% and 26.8 %, respectively. In control group, AA, AG and GG genotypes were observed in 42.5%, 45.0% and 12.5 % patient, respectively. No difference was observed among allele variant in the clinical outcome. Interestingly, among smoker the frequency of AG/AA allele was statistically higher with odds ratio of 1.24 (CI 95%: 1.08-1.43). These results supported a role for the 3'untranslated region VAMP-8 gene variation in the risk for myocardial infarction events, likely due to differences in platelet degranulation

Conclusions: A allele of the 3'untranslated region VAMP-8 was associated with MI among male smoker Indonesian

Keywords: myocardial infarction, VAMP-8, gene polymorphism, risk factor.

YIA 7. Association between Extracellular Heat Shock Protein 70 (HSP70) Level s and Heart Failure, Mortality, and, Rehospitalization in Patients with Acute Coronary Syndrome

NGP Sri Andayani, and J. Nugroho Eko Putranto

*Departement of Cardiology and Vascular Medicine,
Soetomo General Hospital, Surabaya, Indonesia*

Abstract

Background: Acute coronary syndrome (ACS) often lead to a poor prognosis and high risk for heart failure, mortality, or rehospitalization. Extracellular HSP70 as a "danger signal" initiates the inflammatory response and higher HSP70 levels associated with a higher risk and severity of ACS

Objective: to prove the association between extracellular HSP70 level with heart failure, mortality, and rehospitalization at 6-months follow-up in patients with ACS.

Methods: This is an analytic observational study using prospective cohort design. Sixty subjects of ACS patients were analysed and followed-up for 6 months since admission to end point (heart failure, mortality, and rehospitalization). Serum sample of extracellular HSP70 was obtained when the initial admission. Chi-square, Fisher's exact, or logistic regression test were used to examine the association between two variables and obtained relative risk (RR). A value of $p < 0.05$ was considered statistically significant.

Results: The incidence of heart failure was higher in high HSP70 group (>0.147 ng/mL) 86,7% than low HSP70 group (<0.147 ng/mL) 23.3%. Extracellular HS70 levels were significantly associated with heart failure ($p=0,000$; $RR=3,714$; CI 95% 1,913-7,213), but not significantly associated with mortality and rehospitalization ($p=0,107$; $RR=3,000$; CI 95% 0,899-10,007) and $p=0,052$; $RR=1,200$; CI 95% 1,022-1,408). Analysis of composite events showed that extracellular HSP70 levels were significantly associated with composite end point ($p=0,000$; $RR=3,250$; CI 95% 1,766 - 5,980).

Conclusion: Extracellular HSP70 levels were associated with heart failure and composite end point that may be early predictor of cardiovascular events especially heart failure.

Keywords: HSP70, acute coronary syndrome, heart failure, mortality, rehospitalization.

YIA 8. Mutation Identification of ABCA1 Gene in Subjects with Low Level of High Density Lipoprotein

Udin Bahrudin^{1,2}, Hesty Wahyuningsih², Isna Rahmia Fara², M Ali Sobirin¹, Sodiqur Rifqi¹, Sultana MH Faradz²

¹ *Departement of Cardiology and Vascular Medicine*

² *Center of Biomedical Research; Faculty of Medicine, Diponegoro University, Semarang, Indonesia*

Abstract

Background: The crucial part of high density lipoprotein cholesterol (HDL-C) metabolism for protection against development of atherosclerosis is attributed to its role in reverse cholesterol transport, and ABCA1 gene is a key element in this process.

Mutation in ABCA1 is the most common among genes involved in the HDL-C metabolism. Purpose of this study was to identify predicted pathogenic mutation of ABCA1 genes in subject with low level of HDL-C.

Methods: Blood samples were taken from 42 subjects with low HDL-C level (<40 mg/dl). Identification of gene variant was done by using high resolution melting (HRM) technique. The aberant samples were confirmed by DNA sequencing. Alamut software was used to predic pathogenic mutation.

Results: Subjects were consisted of 24 (57.1%) males and 18 (42.9) females. Nine polymorphisms of ABCA1 gene were identified. One variant found in 5'UTR was c.-76dup. Three variants were identified in intron, i.e., c.+378G>C, c.814-14dup, and c.1892+24T>A. Four variants found as synonymous substitutions were c.936C>T, c.948G>A, c.2040C>A, and c.5586G>A. A variant c.2311G>A was predicted deleterious. The c.5586G>A was a novel variant, while the rest have been reported in the SNP database.

Conclusion: This study identified a novel variant c.5586G>A as well as 8 reported variants c.-76dup, c.+378G>C, c.814-14dup, c.1892+24T>A, c.936C>T, c.948G>A, c.2040C>A, and c.5586G>A. The c.2311G>A was predicted pathogenic.

II. Cardiovascular Research Forum

RF 1. The Role of Hypomagnesaemia in Non-valvular Paroxysmal Atrial Fibrillation Patients due to Thyroid Dysfunction

Sugiri¹, Manurung ERR², and Udin Bahrudin¹

¹ *Departement of Cardiology and Vascular Medicine*

² *Department of Internal Medicine, Faculty of Medicine, Diponegoro University, Dr. Kariadi Hospital, Semarang, Indonesia*

Abstract

Background: Atrial fibrillation (AF) is the most prevalent tachyarrhythmia's which is not only decreases cardiac output, but also increases risk of cerebro vascular event. Purpose of this study was to know the profile of plasma electrolyte in patients with AF.

Methods and results: This is a cross sectional, retrospective observation study in the Intensive Care Unit, Dr. Kariadi Hospital Semarang. Sixty patients with non-valvular paroxysmal AF with mean of age 60.9 ± 12.7 years old were enrolled in this study. A thyroid function examination showed that 34 (53.4%) of subjects had low T3 syndrome. Plasma electrolyte examination in the low T3 syndrome patients showed that 17 (53.12%) subjects had a magnesium level imbalance. The level of plasma magnesium was correlated significantly ($p < 0.05$) with fT4 level in patients with low T3 syndrome, but not with T3 ($P > 0.05$).

Conclusion: A plasma magnesium level is correlated significantly with fT4 level in patients with low T3 syndrome atrial fibrillation. It seems that the event of atrial fibrillation at that moment was induced by low T3 syndrome itself and not potentiated by magnesium deficiency.

RF 2. The Role of Mangosteen Peel (GarciniaMangostana L.) in Reducing the Expression of iNOS,VCAM-1 and H2O2 Level and in Increasing the Expression of eNOS in Atherosclerotic Process Inhibition

Djangan Sargowo

Department of Cardiology and Vascular Medicine, Faculty of Medicine, University of Brawijaya, Dr Saiful Anwar General Hospital, Malang

Abstract

Background: The risk factor of atherosclerosis, like genetics, smoking, and high-fat diet, increase the formation of free radical and pro-inflammation. The extract of mangosteen peel (*Garciniamangostana* L.) is known for its antioxidative and antiinflammatory activity, that can suppress the atherosclerotic process by decreasing the expression of iNOS, VCAM-1, H2O2 level and increasing eNOS expression.

Methods: 20 *Rattusnovergicusmiceis* divided into 5 groups (n=4): negative control with normal diet, positive control with high-fat diet for 3 months, and other 3 groups with high-fat diet for the first month and mangosteen peel extract for the next 2 months 200, 400, and 800 mg/kg body weight/day. H2O2 level is measured using Colorimetric Hydrogen Peroxide Kit and ELISA reader in 570 nm wave length. The expression of iNOS, eNOS and VCAM-1 is analyzed using Confocal Laser Scanning Microscope and quantified using Olympusfluoview 1.7A software. One-way ANOVA shows significant decrease in iNOS expression and increase in eNOS expression (p=0,000). Pearson correlation test show a strong negative correlation in the relationship of mangosteen peel extract dosages and the level of H2O2 (r = -0.707), not with VCAM-1 expression (p = -0.347).

Results: This study shows decreased iNOS expression using 400 mg/kg body weight/day mangosteen peel extract, decreased H2O2 level using 200 mg/kg body weight/day dosage, decreased VCAM-1 expression using 200mg/kg body weight/day dose and increased eNOS expression using 800 mg/kg body weight dose.

Conclusion: Mangosteen peel extract can inhibit atherosclerosis by decreasing the expression of iNOS, VCAM-1, H2O2 level and increasing the expression of eNOS

Keywords: Atherosclerosis, iNOS, eNOS, H2O2, VCAM-1, high-fat diet, mangosteen peel extract.

RF 3. LDL-C Target Achievement Remains Low among Treated Stable CHD Patients: The Dyslipidemia International Study (DYSIS) II Indonesia Results

Muhammad Munawar¹, B. Hartono¹, Sodikur Rifqi²,
P. Ardianto, T. Winata³, A. Gitt⁴, M. Horack⁴,
V. Ashton⁵, P. Brudi⁵, HP Balaji⁶, B. Ambegaonkar⁵

¹ Binawaluya Cardiac Center, Jakarta, Indonesia

² Dr. Kariadi Hospital, Semarang, Indonesia

³ MSD, Jakarta, Indonesia

⁴ Stiftung Institut für Herzinfarktforschung,
Ludwigshafen am Rhein, Germany

⁵ Merck & Co., Inc., Whitehouse Station, USA

⁶ MSD International GmbH, Singapore

Abstract

Background: Coronary heart disease (CHD) patients remain at very high risk of future cardiovascular events. Providing effective treatments for key risk factors, such as lipid abnormalities, hypertension and diabetes is critical to reduce future complications. We aimed to identify the prevalence of lipid abnormalities and unmet needs among stable CHD patients in Indonesia currently treated with lipid lowering therapy (LLT).

Methods: DYSIS II is a multicenter, observational cross-sectional study conducted from December 2013-April 2014 in 2 outpatient care centers in Indonesia. Eligible adult patients had a history of CHD (past ACS events must be >3 months before enrollment), full lipid profile available 0-12 months prior to enrollment, on LLT for ≥3 months or not treated at all, and not participating in randomized clinical trials during enrollment. Patient characteristics, risk factors, treatment patterns, and laboratory values were collected. Lipid

target achievement for LDL-C was assessed based on 2011 ESC/EAS guidelines.

Results: Among 200 stable CHD patients (85% male, age 58±9 years), 74% led a sedentary lifestyle, 64% hypercholesterolemia, 59% hypertension, 41% history of ACS, 38% metabolic syndrome, and 37% had type 2 diabetes. 177 patients were on LLT, with only 18% achieving LDL-C <70 mg/dl (mean LDL-C 98±32 mg/dl). Mean atorvastatin equivalent dose was 20±14 mg/day, with 88% receiving statin monotherapy, 7% ezetimibe plus statin, and 3% other non-statin plus statin.

Conclusion: Over 80% of LLT treated stable CHD patients in Indonesia did not achieve the recommended LDL-C target. Additional effective lipid lowering strategies are needed to achieve <70mg/dl LDL-C target.

RF 4. Bone Morphogenetic Protein-2: A Link between Hypertension and Coronary Calcification?

Antonia Anna Lukito¹, S. Bakri², A. Wijaya², and Peter Kabo²

¹ Pelita Harapan University, Siloam Hospital Lippo Village,
Tangerang, Indonesia

² Hasanuddin University, Makassar, Indonesia

Abstract

Background: Previous studies confirmed separately the relationships between obesity, insulin-resistance, hypertension and bone morphogenetic protein-2 (BMP-2) with coronary artery calcification, a parameter of subclinical atherosclerosis. It was also reported that BMPs may function as proinflammatory, prohypertensive and proatherogenic mediators. The study aimed to assess the correlation between systemic hypertension and BMP2 plasma concentration in central-obese non-diabetic men with evidence of coronary artery calcification.

Methods: This was a cross sectional study on 60 central-obese non-diabetic men at average age 55.2 year-old with evidence of coronary calcification who came for health check-up and met the inclusion criteria consecutively, defined by waist circumference >90cm and fasting blood glucose <126mg/dL. Coronary calcification was defined by coronary artery calcium (CAC) score ≥10 Agatston-unit using Dual Source 64 slice CT scan.

Results: There were 36(60%) hypertensive and 24(40%) normotensive subjects. Insulin-resistance was found in 29(48.3%) subjects. The study showed significant higher BMP-2 level in hypertension subjects (p=0.008). Spearman analysis showed a positive significant correlation between hypertension and BMP-2 (r=0.345, p=0.007), further age-stratification analysis showed stronger correlation between hypertension and BMP-2 (r=0.436, p=0.016) in younger subjects (<55 year-old). The correlation between hypertension and BMP-2 remained significant (r=0.374, p<0.05) as HOMA-IR being controlled. However, the correlation was stronger in subjects with insulin-resistance (r=0.404, p=0.027) using stratification analysis.

Conclusion: There is positive correlation between hypertension and BMP-2 in central-obese non-diabetic men with evidence of coronary artery calcification. BMP-2 plasma concentration is higher in the hypertension subjects. The correlation was stronger in younger (<55 year-old) and insulin-resistance subjects.

RF 5. Early Exercise is Safe and Beneficial for Patients After Cardiac Valve Surgery

Cholid Tri Tjahjono

Laboratory of Cardiology and Vascular Medicine,
Faculty of Medicine, Universitas Brawijaya
Malang, Indonesia

Abstract

Background: Phase 2 cardiac rehabilitation in patients undergoing valve surgery is important to recover condition especially for physical functional class, mental, and psychosocial aspects. We therefore conducted retrospective study to evaluate the effects of early exercise training in patients undergoing valve repair and/or replacement at National Cardiac Center Harapan Kita.

Methods: During January until December 2013 a total of 146 eligible patients enrolled in phase 2 cardiac rehabilitation after undergoing valve operations. Patients started to join supervised exercise program after 2 days of hospital discharge. Inclusion criteria were patients undergoing valve surgery not related to coronary artery disease.

Results: Baseline characteristic were as follow : 75 (51.6 %) male and 71 (38.6 %) female patients; mean ejection fractions was 55,40 ±13,76 %. Mean duration of exercise training was 20.42 +10 days. Type of valve surgery were MVR 26.7%, MVR and TVr 18%, AVR 15.3%, and DVR 12.7%. Mean of 6-MWD in the early and at the end of exercise training were 333.7 ± 76,1 meter, and 422.17 ± 55,5 meter (p < 0,01), respectively. Functional capacity of more than 5 Mets was achieved by 98.6 % of the participants. Multivariate analysis using logistic regression test result that gender affected 6-MWD (RR 0.667, CI 95% 0.229-1.939), p = 0.000.

Conclusion: Early exercise for patients after cardiac valve surgery is safe and beneficial.

RF 6. Association Between Diagonal Earlobe Crease and Coronary Heart Disease

Eka Mulyana, Muhammad Ridwan, and Adi Purnawarman

Department of Cardiology and Vascular Medicine, Syiah Kuala University,
Zainoel Abidin Hospital, Banda Aceh, Indonesia

Abstract

Background: Coronary heart disease (CHD) remains a major health problem. Its prevalence rapidly increasing across the world. Early detection of coronary heart disease has attracted scientists' attention recently. Diagonal earlobe crease (DEL) is hypothesized mainly due to atherosclerosis and thus, it may has diagnostic value of coronary heart disease. The aim of this study was to evaluate the association between diagonal earlobe crease and coronary heart disease.

Methods: This was an analytical cross sectional study involving 340 outpatients aged 30-60 years. Earlobes of subjects were photographed using camera and the diagnosis of coronary heart disease was derived from medical record. Data were analyzed using chi-square test.

Results: In 231 patients of CHD group, 210 patients have diagonal earlobe crease and in 109 patients of non-CHD group, 76 patients have this earlobe crease. Bilateral types of diagonal earlobe crease was dominantly found among the subjects. Chi-square test showed that the presence of diagonal earlobe crease is associated with coronary heart disease (p = 0.000; PR = 1.89; 95% CI 1.34-2.66).

Conclusion: The current study revealed a significant association between the diagonal earlobe crease and coronary heart disease.

Keywords: Diagonal Earlobe Crease, Coronary Heart Disease.

RF 7. The Association between Type D Personality and The Risk of Acute Coronary Syndrome

Eko Saputra, Raka Widhiana, and Wayan Wita

Department of Cardiology and Vascular Medicine, Faculty of Medicine,
Udayana University, Sanglah Hospital, Denpasar, Indonesia

Abstract

Objective: To determine the association between type D personality and the risk of acute coronary syndrome. The significant role of type D as a contributing factor to an increased risk of having a myocardial infarction has been extensively studied in the western world. However, there is no previous study to determine the role of type D personality as a contributing factor to acute coronary syndrome in the Indonesia.

Methods: This is a matched case-control study of patients with 122 respondents in total sample from June until August 2014. They all filled out the DS14, containing 7-item NA and SI subscales. The NA and SI scales were internally consistent (Cronbach α = 0.875). Using a cutoff of 10 (NA \geq 10 and SI \geq 10).

Results: Data were analyzed as frequency distribution tables and chi square. Results showed there was a significant relationship between type D and risk of acute coronary syndrome independently of other clinical factors hypertension, diabetes mellitus, dyslipidemia, smoking and obesitas (OR = 3,51, CI 95% =0,99 – 12,41, p = 0,05).
Conclusions : Type D personality was independently associated with risk of acute coronary syndrome

Keywords: Type D, Social Inhibition, Affectivity Negative, Acute Coronary Syndrome.

RF 8. STEMI Patients with High Serum Blood Glucose Level on Admission and Treated with Primary PCI were Associated with an Increased 1-year Mortality

Nanda Iryuza, Donny Setyawan, Novi Ariyanti, Renan Sukmawan,
Bambang Budi Siswanto, Surya Dharma

Department of Cardiology and Vascular Medicine,
Faculty of Medicine, University of Indonesia,
National Cardiovascular Center Harapan Kita, Jakarta, Indonesia

Abstract

Background: Many studies showed that high serum blood glucose level on admission is associated with an increased short-term mortality of ST-elevation myocardial infarction (STEMI) patients, but not the long-term mortality. We aimed to evaluate the long-term mortality of STEMI patients with high serum blood glucose level on admission and underwent primary percutaneous coronary intervention (PPCI).

Methods: Data was derived from the Jakarta Acute Coronary Syndrome registry database. A total of 1089 STEMI patients undergoing PPCI between 2008-2013 in National Cardiovascular Center Harapan Kita were retrospectively analyzed. Cox-regression analyses were applied to evaluate the relation between high serum blood glucose level and in-hospital mortality, as well as 1-year all-cause mortality.

Results: Patients with serum blood glucose level of \geq 160 mg/dL (N=484) as compared with lower blood glucose level (<160 mg/dL), had a significant higher in-hospital mortality [7.8% vs 3.5%; hazard ratio (HR) 2.31, 95% confidence interval (CI) 1.35 to 3.93, p=0.002], and higher 1-year mortality (13.2% vs 9.4%; HR 1.45, 95% CI 1.01 to 2.08, p=0.042). The proportions of patients who achieved post-procedural thrombolysis in myocardial infarction 3 flow were similar (94% vs 92%, p=NS).

Conclusion: STEMI patients with high serum blood glucose level on admission and treated with PPCI, were associated with higher

1-year mortality as compared with patients who had lower blood glucose level.

RF 9. Cardiac NT-PRO BNP Gene is Downregulated in Obese, Non-Heart Failure Patients

Suko Adiarto¹ and Gusti Rizky Teguh Ryanto²

¹ Department of Cardiology and Vascular Medicine, Faculty of Medicine University of Indonesia, National Cardiovascular Center Harapan Kita, Jakarta, Indonesia

² Faculty of Medicine, University of Indonesia, Jakarta, Indonesia

Abstract

Background: Many studies have mentioned the effect of obesity in lowering circulating and tissue NT-proBNP levels, especially in heart failure (HF) patients, where adipose tissue plays a role in downregulating its expression. The same cannot be said in non-HF patients, where NT-proBNP studies are not as established. In this study, we aim to compare the cardiac NT-proBNP gene expression in obese and non-obese patients with no HF condition.

Method: Right atrial appendage (RAA) samples were taken from twenty patients divided into two groups (10 overweight/obese (BMI>25 kg/m²) patients and 10 normal controls) during Coronary Artery Bypass Graft (CABG) surgery, with inclusion criteria of ejection fraction (EF) above 40% and no documented HF, LVH, or Chronic Kidney Disease (CKD). NT-proBNP gene (NPPB) expression from the samples was then examined using RT-PCR method. Mean NPPB expression levels between the two groups were then compared and analyzed statistically.

Result: From the two groups, no significant characteristic difference was found. After bivariate analysis, it was found that mean NPPB expression levels were found lower in overweight/obese patients (1.041±0.062) compared to normal controls (1.127±0.097) (p=0.03). After multivariate adjustment for confounding factors, the difference in NPPB expression levels was still significant (p=0.033).

Conclusion: NT-proBNP gene expression is downregulated in non-HF patients with overweight/obese condition. Further studies are required to evaluate the difference in NT-proBNP levels between the two populations.

Keywords: NT-proBNP, obese, overweight, non-heart failure.

RF 10. The Relationship Between Hemodialysis and Silent Myocardial Ischemia Event in End Stage Chronic Kidney Disease Patients at Gatot Subroto Central Army Hospital Ditkesad that Assessed Using Ecg Dispersion Mapping

Bogie P. Palinggi¹, Gustaf D. Sinaka¹, Bambang B. Siswanto¹, Budhi Setianto¹, Sugiarto², Dwi E. Wahono²

¹ Department of Cardiology and Vascular Medicine, Faculty of Medicine, University Indonesia

² Department of Internal Medicine, Gatot Subroto Central Army Hospital Ditkesad

Abstract

Background: Background: Hemodialysis is a method used to replace the damaged kidney function at the final stage of chronic kidney disease. Silent myocardial ischemia is often found in patients with end stage chronic kidney disease undergoing hemodialysis. Normal ECG examination is often found in these patients. ECG dispersion mapping method was developed to improve the sensitivity and specificity of ECG examination. The purpose of this

study was to determine the relationship between hemodialysis and silent myocardial ischemia event in patients with end stage chronic kidney disease.

Methods: The study design was a cross-sectional design. Data was taken on September 15th - October 15th, 2014 at hemodialysis units and outpatient clinics Gatot Subroto Central Army Hospital Ditkesad Jakarta. The statistical methods used were univariate, bivariate (chi square test and unpaired t test) and multivariate (logistic regression). Results: For 44 patients included, Hypertension (45.5%) were the most frequently causes of chronic kidney disease. The prevalence of silent myocardial ischemia in patients with end stage chronic kidney disease who underwent hemodialysis is 68.2% (OR 3.750; 95% CI 1.08 to 13.07, p <0.05) disease. The prevalence of silent myocardial ischemia in male patients with end stage chronic kidney disease who underwent hemodialysis is 80 % (OR 7,20, 95% CI 1,35-38,33, p<0,05).

Conclusion: End stage chronic kidney disease patients who undergo hemodialysis are 3,75 time's likelihood to experience silent myocardial ischemia compared to patients who do not undergo hemodialysis. Male patients who undergo hemodialysis are 7.2 times likelihood to experience silent myocardial ischemia compared to patients who do not undergo hemodialysis.

Keywords: Hemodialysis, end stage chronic kidney disease, silent myocardial ischemia.

III. Oral Presentation

OP 1.1 Difference of Interleukin-6 Plasma Level Between High and Low Chronic Air Pollution Exposure Employees

A. Gofur and M Aminuddin

Departement of Cardiology and Vascular Medicine, Airlangga University Medical School – dr. Soetomo General Hospital, Surabaya, Indonesia

Abstract

Background: Association between ambient air pollution exposure and cardiovascular morbidity and mortality, possibly via systemic inflammation, are well established. However, data on systemic inflammation caused by chemical plant air pollution exposure is still rare. This study was designed to investigate whether chemical plant employees (chronically high air pollution exposed group) have higher Interleukin-6 plasma level, compared to administrative staff (low air pollution exposed group).

Method: A cross-sectional study of 78 subjects (consisted of 39 production employees and 39 administrative staff) was performed in the chemical plant at east java province between October 2014 and Pebruary 2015. Mean age, working period, body mass index, diastolic blood pressure, lipid profile and body mass index were similar between two groups. But, systolic blood pressure was significantly higher in the exposed group. We compare the measurement of Interleukin-6 plasma level among them.

Result: Mann-Whitney U test of Interleukin-6 was found to be significantly higher in the production employees compared to administrative staff (1.87±1.5 vs 1.12±0.5 pg/mL; p < 0.05)

Conclusion: Result indicate that systemic inflammation become a response to high air pollution exposure, as seen in increased of Interleukin-6 plasma level. This might provide a link between air pollution exposure and adverse cardiovascular events.

Keywords: air pollution, Interleukin-6, Inflammation.

OP 1.2 Correlation between Pulmonary Vascular Resistance and Heart Rate Recovery during Exercise Test after Mitral

Valve Surgery in Mitral Stenosis Patient with Pulmonary Hypertension

Mochamad Hilal Nurdin, Andang H Joesoef,
Renan Sukmawan, and Amiliana Mardiani Soesanto

Department of Cardiology and Vascular Medicine,
Faculty of Medicine, Universitas Indonesia,
National Cardiovascular Center Harapan Kita, Jakarta

Abstract

Background: Pulmonary hypertension is one of the long-term complication of mitral stenosis, resulting increase of morbidity and mortality. Pulmonary vascular resistance (PVR) is increase in reactive phase of pulmonary hypertension due to mitral stenosis. There is impaired autonom regulation following pulmonary hypertension, affecting heart rate changes during exercise test. Heart rate recovery (HRR) is defined as the difference between heart rate at peak exercise and 1 minute of recovery phase. It is affected by reactivation of parasympathetic system after cessation of exercise, and has been known as a long-term mortality predictor.

Method: A study of 20 patients with significant mitral stenosis with pulmonary hypertension who underwent mitral valve surgery in National Cardiovascular Center Harapan Kita was done from August to November 2014. PVR data from echocardiography was measured before surgery and before the patients were discharged. HRR data was taken from the treadmill test at the end of phase 2 cardiac rehabilitation program. Statistical analysis is done to explore the correlation between pulmonary vascular resistance and heart rate recovery after exercise test.

Result: Mean heart rate recovery after exercise test is $11,5 + 5,9$ beat per minute, and changes of pulmonary vascular resistance after surgery is $1,55 + 2,1$ WU. There was a correlation between change of PVR and heart rate recovery ($r = 0,537$; $p = 0,015$). Linear regression analysis of the change of PVR and heart rate recovery (unadjusted analysis) showed β coefficient 1,52 with 95% confidence interval 0,338-2,706 and $p = 0,015$. Adjusted analysis to confounding variabel showed β coefficient 1,244 with 95% CI 0,032-2,457 and $p = 0,045$.

Conclusion: Changes of pulmonary vascular resistance after mitral valve surgery in mitral stenosis patient is positively correlated with heart rate recovery during exercise test

Keywords: mitral stenosis, pulmonary hypertension, pulmonary vascular resistance, heart rate recovery.

OP 1.3 The Correlation between Albuminuria and Echocardiographic Parameters in Non-Diabetic Hypertensive Male Subjects

Monique Rotty, Johan Winata, Kana Elka, Ardianto Kusumajaya,
Victor Rooroh, Ronaldi, Janry Pangemanan, and Agnes Lucia Panda

Department of Cardiology and Vascular Medicine, Faculty of Medicine
Sam Ratulangi University, Cardiovascular and Brain Center Prof. dr. R.D.
Kandou General Hospital Manado, North Sulawesi, Indonesia

Abstract

Background: Albuminuria is associated with systemic microvascular damage and increased cardiovascular morbidity and mortality. However, the relationship between albuminuria and echocardiographic parameters is still conflicting. The purpose of this study was to determine if echocardiographic parameters correlate with albuminuria in non-diabetic hypertensive male subjects.

Methods: The study population consisted of 40 consecutive asymptomatic non-diabetic hypertensive male, aged 40-60 years.

We performed complete echocardiography and measured urinary albumin-to-creatinine ratio (UACR). Albuminuria was defined as $UACR \geq 20$ mg/g. The correlations between echocardiographic parameters and UACR were analyzed.

Results: Albuminuria was found in 14 (35%) subjects. Albuminuria was associated with thicker interventricular septum diastolic diameter (IVSDD) ($r = 0,386$, $p = 0,007$), thicker posterior wall diastolic diameter (PWDD) ($r = 0,323$, $p = 0,021$), longer isovolumic relaxation time (IVRT) ($r = 0,382$, $p = 0,008$), lower peak early transmitral flow velocity (E) ($r = -0,330$, $p = 0,19$), lower early diastolic mitral annular velocity (E') ($r = -0,270$, $p = 0,046$), and lower late diastolic mitral annular velocity (A') ($r = -0,273$, $p = 0,44$).

Conclusion: Albuminuria is significantly associated with echocardiographic parameters IVSDD, PWDD, IVRT, E velocity, E' velocity, and A' velocity in non-diabetic hypertensive male subjects.
Keywords : echocardiographic, albuminuria, hypertension.

OP 1.4 Correlation of Arterial Stiffness and Left Ventricle Stiffness with Functional Capacity in Patient with Controlled Hypertension

Nanang R Utantyo and Budi S Pikir

Department of Cardiology and Vascular Medicine Department,
Soetomo General Hospital, Airlangga University, Surabaya, Indonesia

Abstract

Background: Combined stiffness of both heart and arteries increases in hypertension lead into various cardiovascular problems. By controlling blood pressure, these 'stiffness' expected can be reduced. The cardiovascular performance is the result of this 'stiffness'. It is still unclear whether well blood pressure maintenance in hypertensive patient will also increase their functional capacity.

Methods: Cross-sectional study of 40 patients referred for carotid ultrasound and echocardiography also stress test. Stress test was performed on treadmill using Bruce protocol. Assessment of arterial stiffness by ultrasound 2D image of common carotid artery then calculated with beta stiffness index and left ventricle stiffness as determined by 2D and doppler transthoracic echocardiography. We evaluated impaired exercise capacity using validated Borg scale among study subjects. Analyses were conducted to determine correlation of arterial stiffness and left ventricle stiffness with exercise capacity.

Results: Study subjects of 40 patient, 45% males and 55% females, mean age was $48,97 \pm 5,25$ years, with controlled hypertension without co-morbid condition were examined. Among patients, there were significant strong inverse correlation between arterial stiffness and exercise capacity was assessed by METs ($r = -0,686$; $p = 0,000$) and significant moderate inverse correlation between left ventricle stiffness and exercise capacity was assessed by METs ($r = -0,424$; $p = 0,006$).

Conclusion: Arterial stiffness and left ventricle stiffness were correlated with functional capacity in controlled hypertensive patient.

Keywords: arterial stiffness, left ventricle stiffness, functional capacity, controlled hypertension.

OP 1.5 Correlation between Vein Tissue Leukocyte Count and Great Saphenous Vein DUS Reflux Time in Coronary Artery Bypass Graft Patients

Danayu Sanni Prahasti, Ismoyo Sunu,
Sunarya Soerianata, and Amiliana Mardiani Soesanto

Department of Cardiology and Vascular Medicine, Faculty of Medicine,
University of Indonesia, National Cardiovascular Centre Harapan Kita, Jakarta

Abstract

Background: Venous function abnormality associated with inflammation and venous hypertension is the main pathophysiology of Chronic Venous Insufficiency (CVI). Proving the relationship between local inflammation factors in venous tissue and its function became an important point because the veins studied are used as a conduit for Coronary Artery Bypass Graft (CABG) procedure, and its patency evaluation will affect the mortality and morbidity rate in Coronary Artery Disease (CAD).

Methods: This is a cross-sectional study, evaluating 35 Great Saphenous Veins (GSV) tissues taken as conduit for CABG procedure from CAD patients that have been previously examined using Duplex Ultrasound (DUS) for GSV reflux time from September-November 2014 at National Cardiac Centre Harapan Kita. Vein tissue samples were stained with Hematoxylin-Eosin and the vein tissue leucocyte count were evaluated by an independent anatomical pathologist. Reflux time and vein tissue leucocyte count results were then grouped into 2 categories each and analysed with chi-square test to assess the relationship between the two variables.

Result: There was significant difference of elevated leukocyte count evaluated in patients with CVI according to DUS reflux time (52.63%) compared to normal ones (18.75%) ($p=0.039$). The risk for patients with elevated total leukocyte count to develop CVI was 4 times greater than those who have normal count (crude OR 4.81; 95% CI 1.02 to 22.57; $p=0.046$) and after adjusted for confounding factors, such as age, sex, and history of diabetes, hypertension, smoking, and dyslipidaemia, the risk was increased into 6 times (adjusted OR 6.66; 95% CI 1.16 to 38.31; $p=0.033$).

Conclusion: There is significant relationship between local inflammatory factors, evaluated using total leukocyte count, with venous functions, evaluated using DUS reflux time, in CVI patients.

Keywords: leukocyte trapping, venous hypertension, chronic venous insufficiency, coronary artery bypass surgery.

OP 1.6 Comparison of Framingham, SCORE and Jakarta Cardiovascular Score to Predict Coronary Atherosclerosis in Stable Angina Patients

Mailani Akhmad, Fawzia Arifin, Firman Leksmono, Muzakkir Amir

*Department of Cardiology and Vascular Medicine,
Hasanuddin University Makassar, Indonesia*

Abstract

Background: Cardiologists are often confronted with patients presenting with chest pain, in whom clinical risk profiling is required. Framingham risk score (FRS) is commonly used in American population while SCORE preferred in European society. In Indonesia we have Jakarta cardiovascular (JAKVAS) score which is made base on Indonesian population. We studied this three risk scores in their ability to predict for coronary artery disease (CAD) in patients presenting with stable angina.

Methods: The cross sectional study includes 122 patients with stable angina who underwent coronary angiography to assess CAD at Wahidin Sudirohusodo hospital during April-June 2014. FRS, SCORE and JAKVAS pre-test probability were calculated. The severity of CAD was defined into mild, intermediate and severe based on Gensini score. Receiver operating curve (ROC) were produced and area under curve (AUC) was reported for different risk categories.

Results: In ROC analysis for prediction significant CAD, the AUC for JAKVAS;0.70 (95%CI: 0.62-0.79) slightly higher than FRS;0.64 (95%CI: 0.54-0.74) and SCORE;0.65 (95%CI 0.55-0.74). Low JAKVAS category showed the lowest number of patients with significant CAD.

Conclusion: In stable angina population, the ability of JAKVAS is better compared to FRS and SCORE. The number of low risk patients showing significant CAD was lower using JAKVAS. Therefore risk categorization using JAKVAS score seems to be the safest to stratify stable angina patients prior to coronary angiography.

Keywords: Framingham risk score, SCORE, Jakarta cardiovascular score, Gensini score, CAD, stable angina.

OP 1.7 Acute Effect of Smoking Filtered Clove Cigarette on Brachial Artery Flow Mediated Dilation (FMD) in Young Adult Active Smokers

Abraham Avicenna, Sodikur Rifqi,
Susi Herminingsih, and Selamat Budijitno

*Department of Cardiology and Vascular Medicine, Faculty of Medicine
Diponegoro / Dr. Kariadi Hospital, Semarang, Indonesia*

Abstract

Background: Smoking is a major risk factor of atherosclerotic diseases. Smoking does not only give long term negative effects to the blood vessels (chronic effect), but also endothelial dysfunction immediately after smoking (acute effect). Indonesian clove cigarette has different composition compared to the regular cigarette and its effects to the blood vessel reactivity has not been widely studied.

Method: Our study is pre-post designed praexperimental study. All subjects are young adult chronic smokers and do not have other major coronary artery disease risk factors. Flow mediated dilation (FMD) measurement was performed to each subject before and 30 minutes after smoking 1 filtered clove cigarette.

Result: A total of 26 respondents were included in our study had mean age of 6.88 ± 6.37 years old, with mean smoking duration was 10.42 ± 4.81 years. This study shows that smoking 1 filtered clove cigarette shown to decrease of FMD 30 minutes after smoking ($p<0,0001$). Before smoking, FMD was $8,37 \pm 4,95\%$ and decreased to $3,76 \pm 2,31\%$ 30 minutes after smoking a filtered clove cigarette.

Conclusion: Smoking filtered clove cigarette has an acute effect of decreasing brachial artery FMD in young adult active smokers.

Keywords: flow mediated dilation, active smoker, clove cigarette.

OP 1.8 Association of Neutrophil-Lymphocyte Ratio, Hemoglobin, and Creatinin Plasma Levels with Length of Stay of Congestive Heart Failure Patients

A Thengker¹, H Lim^{1,2}, MW Hadi¹, K Marwali¹,
H Pratama¹, AA Lukito^{1,2}

¹*Siloam Hospital Lippo Village, Tangerang, Indonesia*

²*Pelita Harapan University, Tangerang, Indonesia*

Abstract

Background: Inflammation, anemia, and renal dysfunction may contribute to cardiac events as myocardial infarction, arrhythmia, and congestive heart failure. Physiologic immune respond to systemic inflammation includes increased of neutrophil and decreased of lymphocyte counts or increased of neutrophil-lymphocyte ratio (NLR). This retrospective study aims to know the association of neutrophil-lymphocyte ratio, hemoglobin and creatinin with the length of stay of patients with congestive heart failure (CHF).

Method: Neutrophil, lymphocyte, hemoglobin and creatinin plasma levels were collected retrospectively in the medical record department in thirty congestive heart failure patients, which had complete data needed and were consecutively hospitalized from

January to December 2014 in Siloam hospital.

Result: Data was analyzed by multivariate linear regression, and showed there were significant association between NLR ($p=0.029$), haemoglobin ($p=0.035$) and creatinin ($p=0.026$) plasma level with the length of stay of congestive heart failure patients.

Conclusion: This study showed the systemic inflammation, anemia and renal dysfunction which were represented by the neutrophil-lymphocyte ratio, hemoglobin and creatinin plasma levels altogether might affect the length of stay of congestive heart failure patients.

OP 1.9 Cardiac Cachexia and Its Impact on Survival in Heart Failure Patients

Aninka Saboe, B Tiksnadi, A Purnomowati, T Aprami

*Department of Cardiology and Vascular Medicine,
Padjadjaran University, Bandung, Indonesia*

Abstract

Background: Cardiac cachexia (CC) is a serious complication of heart failure. Unfortunately, its existence is often overlooked by many cardiologists, this is further complicated by small number of study concerning CC, and the controversial issues they encompasses. **Methods:** The aim of this study are to compare the survival in heart failure patients with and without cachexia. A retrospective cohort study was conducted on the data (which was taken consecutively from a convenience sampling data) from Hasan Sadikin General Hospital Heart Failure registry from March 2013 – August 2014. The inclusion criteria was heart failure patients above 18 years of age with left ventricle ejection fraction (LVEF) below 40%. Exclusion criterias were valvular diseases as primary etiology of heart failure and chronic kidney disease more than stage III. Cardiac cachexia was diagnosed in patents fulfilling the criteria from international cachexia consensus.

Results: There were 39 patients, most of them were female (61.5%), with mean LVEF 28.5% (+6.7). Cardiac cachexia was diagnosed in 6 (15.3%) patients. At 6 months of follow-up after initial enrollment, the cumulative rate of death from cardiovascular cause was 83% among cachectic as compared 37.5% among noncachectic patients $p=0.001$ Adjusted HR(95%CI)=8.05(2.40–27.04). There were no association between mortality with LVEF ($p=0.061$), comorbid condition (hypertension $p=0.237$, diabetes mellitus $p=0.163$).

Conclusions: We conclude that patients with cardiac cachexia have worse prognosis and warrants a special consideration in the management of heart failure patients.

OP 1.10 Factors Associated with Left Ventricular Ejection Fraction Improvement During Hospitalization in Indonesian National Cardiovascular Centre

Bambang Budi Siswanto¹, Oryza Gryagus Prabu², Bayushi Eka Putra², Eka Adip Pradipta², Gusti Rizky Teguh Ryanto², Edwin Chandra²

¹ *Department Cardiology and Vascular Medicine Faculty of Medicine, University of Indonesia, National Cardiovascular Center Harapan Kita*

² *Medical Research Unit, Faculty of Medicine University of Indonesia*

Abstract

Background: Left ventricular ejection fraction (LVEF) is an important prognostic factor in heart failure patient. Previous studies showed that the risk of mortality was inversely related with LVEF. Therefore, improving LVEF is one of the main of heart failure treatment goals.

Aim: To determine factors that associated with LVEF improvement during hospitalization.

Method: We retrieved all patients data ($n=814$) who were hospitalized from the heart failure patients registry between January 2012 and December 2013 in National Cardiovascular Centre Harapan Kita, Jakarta, Indonesia. Patients who had echocardiography data both prior to admission and discharge were included. We determined factors that were associated with LVEF improvement by comparing patients' characteristic between LVEF improvement and no LVEF improvement group retrospectively using univariate analysis.

Result: We compared patients with LVEF improvement ($n=160$) and non-LVEF improvement ($n=654$). LVEF improved with overall mean 8.69% (35.35% to 44.05%) from the baseline during 7.63 mean days of hospitalization. Both groups were given similar medications such as angiotensin converting enzyme inhibitor, beta blocker, diuretic, calcium channel blocker, antiplatelet, anticoagulant, statin, and aldosterone antagonist ($p>0.05$). Patients in New York Heart Association (NYHA) class II-III was significantly higher in LVEF improved group compared to non LVEF improved group (78.1% vs 68.1%; $p=0.015$). Patients with improved LVEF also had lower blood urea nitrogen (BUN) and urea level compared to non-improved patients (22.34 vs 27.7 mg/dl; $p=0.001$ & 44.63 vs 56.32 mg/dL; $p<0.001$). On the other hand, patients with non-improved LVEF had higher proportion of hyperkalemia and hypotension (5% vs 1.3%; $p=0.046$ & 4,9% vs 0,6%; $p=0,014$).

Conclusion: Lower level of BUN and urea is related to improved LVEF meanwhile hypotension and hyperkalemia is related to non-improved LVEF.

Keywords: hospitalized, improvement, LVEF.

OP 1.11 Pregnancy Complicated with Heart Failure: Analysis of Risk Factors in A Tertiary Hospital in Indonesia

Ardhia Kusuma Putri¹, Adly Nanda Al Fattah², Raditiyo Prakoso¹, Rima Irwinda², Noroyono Wibowo²

¹ *Department of Cardiology & Vascular Medicine University of Indonesia, National Cardiovascular Center Jakarta, Indonesia*

² *Department of Obstetrics and Gynecology, Faculty of Medicine, University of Indonesia-Cipto Mangunkusumo National General Hospital, Jakarta, Indonesia*

Abstract

Background: Pregnancy with heart failure (HF) is an important issue because it accounts for 35% of female cardiovascular mortality. It will lead to the high rate of maternal and perinatal morbidity and mortality, especially in the low-resources settings without advance facilities. A number of studies have shown various incidence of HF during pregnancy. This study aim to find the incidence of HF during pregnancy and its risk factors in a Indonesian tertiary hospital.

Methods: This retrospective evaluation was performed during January to December 2013 at Cipto Mangunkusumo Hospital, Jakarta-Indonesia, a tertiary-care hospital. The data was obtained from singleton deliveries database including patients with HF and normal patients. Bivariate and multivariate analysis were carried out finding at the risk factors of HF.

Results: Seventeen out of 2192 the subjects had HF (7.7/1000). Of these, the median age of maternal was 31 years (range 19-41), 7 subjects (41.2%) were primigravida, 5 subjects (29%) had severe preeclampsia. Most patients (52.9%) were in NYHA functional class II. After adjusting with age and parity, anemia during labor (adjusted OR 2.86, 95%CI 1.028-7.98), asthma during pregnancy (adjusted OR 1.89, 95%CI 1.54-7.75), superimposed preeclampsia (adjusted OR 246.05, 95%CI 35.173-1721.3) and chronic hypertension

(adjusted OR 60.376, 95% CI 4.99-729.1) were found as risk factors of HF during pregnancy. However severe preeclampsia was not associated with HF.

Conclusion: Anemia during labor, asthma, superimposed preeclampsia and chronic hypertension were the risk factors of HF during pregnancy.

Keywords: heart failure, pregnancy, risk factors.

OP 1.12 Ceplukan Leaf's Methanolic Extract (*Physalis minima* L.) Attenuates Ventricular TNF- α Level and Fibrosis in Ovariectomized Wistar Rats

Bayu Lestari^{1,2}, Nur Permatasari², and Mohammad Saifur Rohman³

¹ Magister of Biomedical Research, Faculty of Medicine, University of Brawijaya Malang, Indonesia

² Department of Pharmacology, Faculty of Medicine, University of Brawijaya, Malang, Indonesia

³ Department of Cardiovascular Disease, Saiful Anwar General Hospital, Malang, Indonesia.

Abstract

Background: The increase prevalence of heart failure in menopause women supposed correlate with decreased estrogen level. The aimed of this study was investigated the effects of ceplukan leaf (*Physalis minima* L), which contain phytoestrogen physalin and withanolides, toward ventricular TNF- α level and fibrosis in ovariectomized rats.

Methods: Wistar rats divided into five groups (K1: normal; K2: 5 weeks ovariectomy (OVX) without treatment ; K3, K4, and K5: 5 weeks OVX + 4 weeks ceplukan leaf's methanolic extract dose 500, 1500, and 2500 mg/kgBW, respectively). TNF- α level measured with ELISA method. Fibrosis measured as blue color percentage in Masson's Trichrome staining.

Results: This study showed that ceplukan leaf treatment resulted in a decreased of ventricular fibrosis and TNF- α level in dose dependent manner compared with those of without treatment group ($p < 0.05$). Furthermore, the TNF- α level normalized in rat treated with 2500 mg/kgBW *Physalis minima* L ($p < 0.05$). Reduction of fibrosis positively correlated with TNF- α level ($p < 0.05$, $r = 0.873$). **Conclusion:** Methanolic extract of ceplukan leaf decrease ventricular fibrosis through inhibition of ventricular TNF- α in ovariectomized rats.

Keywords: *Physalis minima* L, ventricular TNF- α level, fibrosis.

OP 2.1 Comparison of Diagnostic Value Between Heart-Type Fatty Acid-Binding Protein (h-FABP) and Troponin T (TnT) in Diagnosis of Acute Myocardial Infarction (AMI) Within 6 Hours of Onset of Chest Pain in the Emergency Department

Jamaluddin¹, U Malik¹, Peter Kabo¹, Idar Mappangara¹, and N Sennang N²

¹ Department of Cardiology and Vascular Medicine, Faculty of Medicine Hasanuddin University, Makassar, Indonesia

² Department of Clinical Pathology, Faculty of Medicine Hasanuddin University, Makassar, Indonesia

Abstract

Introduction: Diagnosis of myocardial infarct at an early stage in the emergency department is often difficult. A recently proposed biomarker, h-FABP has been found to appear in the circulation superior to that of cardiac TnT in the early hours of AMI.

Objective: To compare the diagnostic value of h-FABP and TnT

in diagnosis of AMI within 6 hours of onset of chest pain in the emergency department.

Methods: Thirty nine patients with ACS were enrolled in the study. All patients presented symptoms within six hours of onset and suffered typical chest pain. Blood samples were obtained for rapid test h-FABP and TnT. The diagnostic indices (sensitivity, specificity, positive predictive value, negative predictive value, and accuracy) were analyzed for h-FABP and TnT.

Results: The h-FABP is more sensitive, has a higher NPV and accuracy than the TnT test during the first 6 h of onset of chest pain (75% vs 41.6%, 60% vs 38.5%, and 69.2% vs 64.1 %, respectively), but less specific and has lower PPV than TnT test (60% vs 100%, and 75% vs 100%, respectively).

Conclusion: The h-FABP test is more sensitive and has a better NPV than the troponin T test during the first 6 h of AMI. It may be used to rule out myocardial infarction during the early phase of ischemic chest pain.

Keywords: Acute myocardial infarction, h-FABP, Troponin T.

OP 2.2 New-onset atrial fibrillation occurred in acute coronary syndrome is an independent risk factor of in hospital mortality

Zul Efendi¹, Nana Maya Suryana¹, Yusak A Porotuo¹, Irmalita², Daniel PL Tobing², Dafisah A Juzar², Isman Firdaus², Siska S Danny², Dian Zamroni²

¹ Residents of Departement Cardiology, Faculty of Medicine, University of Indonesia, National Cardiovascular Centre Harapan Kita, Jakarta, Indonesia

² Department Cardiology, Faculty of Medicine, University of Indonesia, National Cardiovascular Centre Harapan Kita, Jakarta, Indonesia

Abstract

Background: Atrial fibrillation (AF), the most commonly encountered clinical arrhythmia, often occurs in the setting of myocardial infarction (MI). The presence of AF is associated with heart failure and mortality in MI patients. The aim of the study was to identify risk factor for the development of AF and in hospital mortality in the setting of acute coronary syndrome (ACS).

Methods: A Case control study of ACS patients with new onset AF from the Registry of Acute Intensive Cardiovascular Outcome (RAICOM) database between October, 2014 and January, 2015. Incomplete data was exclude from the study. Case group was ACS patient with New onset AF and control group was ACS with sinus rhythm. Risk factor for developed of new onset AF and in hospital mortality were analyzed with non parametric pearson chi-square and fischer's exact test.

Results: A number of 272 ACS patients, 225 mans (82.7%) and 47 women (17,3%) were analyzed. New onset AF was develop in 31 patients (11.4%), acute heart failure (AHF) was 145 patients (53.3%). Age > 70 years old is an independent risk factor increase new onset AF ($p < 0.001$, OR 4.18). Use of Nitrat ($p < 0.002$, OR 0.31), beta blocker ($p < 0.04$, OR 0.25) have protector effect for developed AF in ACS setting. Sixteen (5.9%) patient was died during hospitality. New onset AF was an independent risk factor for in hospital mortality in ACS patients ($p < 0.000$, OR 10.13). There was no significant association between AHF, age, and left ventricle ejection fraction with in hospital mortality.

Conclusion: Our case control study shows that age > 70 years old increase risk for AF developed in ACS patient. New onset AF was an independent risk for in hospital mortality in ACS setting. There was no significant association between AHF, age, and left ventricle ejection fraction with in hospital mortality.

OP 2.3 Characteristic of Patients Diagnosed with Acute Coronary Syndrome Performed Continuous Venovenous Hemodialysis in Intensive Cardiovascular Care at National Cardiac Centre Harapan Kita

Ardhestiro Harnindy Putro¹, Martua Silalahi¹, Isman Firdaus², Dafisah A. Juzar², Daniel P.L. Tobing², Dian Zamroni², Irmalita², Surya Dharma², Siska S.D²

¹ Residents of National Cardiovascular Centre Harapan Kita, Jakarta, Indonesia

² Cardiologist of National Cardiovascular Centre Harapan Kita, Jakarta, Indonesia

Abstract

Background: Acute Kidney Injury (AKI) is associated with high cardiovascular mortality. The prognostic importance of degrees of renal impairment in patients who have had Acute Coronary Syndrome (ACS) with Continuous Venovenous Hemodialysis (CVVH) is less well defined.

Objective: Knowing the characteristic patients diagnosed with ACS with AKI performed CVVH admitted to intensive cardiovascular care unit at National Cardiovascular Centre Harapan Kita (NCCHK) Method: We studied all patients data diagnosed with ACS and AKI performed CVVH, enrolled from Registry of Acute and Intensive Cardiac Outcome (RAICOM) at ICVCU NCCHK during 2014.

Result: From 681 samples patients who had performed CVVH was 12 patients. Samples from this study are 75% male and 25% female. The patients' age which below 60 years old are 41,6% with means 60,5 + 0,52. 16,6% patients diagnosed with established Chronic Kidney Disease. 8,3% with AKI dd CKD stage 2, 25% with AKI dd CKD stage 3, 25% with AKI dd CKD stage 4, and 41,7% with Aki dd CKD stage 5. Creatinine more than 1.2 mg/dl are 91,7% of samples. Hypertensive patients are 50% from samples, while 58,3% of the samples are diagnosed with diabetes mellitus. 33,3% patients diagnosed with STEMI, 33,3% with NSTEMI, 16,7% with cardiogenic shock, 8,3% with myocarditis, 8,3% with septic shock. All of NSTEMI patients had high risk GRACE score assessment, and TIMI risk score more than 5/14 for STEMI patients. 25% patients death during index hospitalization.

Conclusion: The characteristics suspected affecting the condition of patients diagnosed ACS with AKI who had performed CVVH during hospitalization are: age, sex, stage of CKD, diabetes mellitus, GRACE score, and TIMI risk score. Further researcher are needed to know more detail how much each risk factor affect outcomes

Keywords: Acute Coronary Syndrome, Acute Kidney Injury, Continous Venovenous Hemodialysis.

OP 2.4 Correlation Between The Length of Cardiopulmonary Bypass Time With The Change of HARUS Estimated Glomerular Filtration Rate in Coronary Artery Bypass Graft Patients

M. Reza Juniery Pasciolly¹, Erwinanto¹, Abdul Hadi Martakusumah², Januar Wibawa Martha¹, A. Fauzi Yahya¹, Tri Wahyu Murni Sulisetyowat³, Augustine Purnomowati¹, Toni M Aprami¹

¹ Hasan Sadikin Hospital, Cardiology and Vascular Medicine, Bandung, Indonesia

² Hasan Sadikin Hospital, Internal Medicine, Division of Nephrology and Hypertension, Bandung, Indonesia

³ Hasan Sadikin Hospital, General Surgery, Division of Thoracic and Cardiovascular, Bandung, Indonesia

Background: Cardiopulmonary Bypass Time has been known to increase inflammatory agents and to decrease renal function. Approximate quantification of renal function can be obtained using multiple estimated Glomerular Filtration Rate (eGFR) formulas, such as HARUS, to name one. Prior studies concern correlation between CPB time and eGFR had been inconsistent. Currently there is no Coronary Artery Bypass Graft (CABG) study using HARUS formula to calculate eGFR. This study aims to determine the correlation between the duration of CPB time with the decline in eGFR in CABG patients.

Methods: The design of this study was cross-sectional analysis using Spearman-Rank correlation with subsequent linear regression analysis. Study subjects were 35 eligible CABG patients in Hasan Sadikin Hospital within September 2014 – January 2015 period. The renal function was calculated using HARUS eGFR formula.

Results: The subjects in this study was mostly male (85.7%) with age range of 57 (± 7) years. Risk factors found were smoking (82,9%), hypertension (65,7%), dyslipidemia (65,7%), and diabetes mellitus (28,6%). The median of CPB time was 95 (51-342) minutes, with delta eGFR -11,28 (-47,16 – 3,93) ml/min. Analysis using Spearman-Rank correlation test showed a negative correlation between CPB time with delta eGFR ($r=-0,675$; $p=0,001$), and linear regression subanalysis showed that for every 1 minute increase of CPB time will further reduce eGFR by -0,130 ml/min ($p<0,001$).

Conclusion: We concluded that there were strong negative correlation between CPB time and HARUS eGFR in CABG patients with every 1 minute increase of CPB time will further reduce HARUS eGFR by -0,130 ml/min.

Keywords: Cardiopulmonary bypass time, Coronary artery bypass graft, Glomerular filtration rate.

OP 2.5 In Hospital Outcomes of ACUTE ST Elevation of Myocardial Infarction (STEMI): Arrhythmia, Cardiogenic Shock, and Mortality in Cardiology and Vascular Division of DR.M.Djamil Padang Hospital

Wiza Erlanda, M Syafri, C Wijaya, D Ramli, and Y Karani

Department of Cardiology and Vascular Medicine,
Faculty of Medicine, Andalas University
General Hospital of Dr. M. Djamil, Padang, Indonesia

Abstract

Background: The incidence of hospital admissions for acute STEMI increase every decade. Arrhythmia, shock cardiogenic, and mortality are frequent major adverse cardiac events (MACEs) can occur during hospitalization. Several factors influence, among them are the territorial of lesion and revascularization. The aim of this study is to describe in hospital outcomes of STEMI in Cardiology and Vascular division of Dr.M.Djamil Padang Hospital.

Methods: Data were collected between Januari 1,2014 – December 31,2014. We divided STEMI patients into three in hospital outcome categories: arrhythmia, cardiogenic shock, and mortality. Sub-analysis of territorial of lesions and revascularization was also performed.

Result: From 280 STEMI patients, Arrhythmia was found in 80 patients (28.5 %) which AV block (52,5%), AF (30%) and VT (17,5%) are main cases. Cardiogenic shock in 22 patients (7.9 %) and mortality in 32 patients (11.4 %). Based on Territorial of lesions, 88 % AV block in inferior and 12 % in anterior. 54.1% AF in anterior and 45.9 % in inferior. 57 % VT in anterior. 72.7% cardiogenic shock in anterior. 68,8% mortality in anterior. All outcomes more often in STEMI without revascularization: 75% in AF; 64.9 % in AV block; 85.8 % in VT; 91 % in cardiogenic shock; and 84.4 % in mortality.

Conclusion: The result of this study indicated that arrhythmia are frequent outcomes during hospitalization in STEMI, followed by mortality, and cardiogenic shock. Arrhythmia, in particular AV block are dominant in inferior. Cardiogenic shock and mortality are dominant in anterior. All outcomes are more often in without revascularization STEMI

Keywords: STEMI, in hospital outcomes, territorial of lesions, revascularization.

OP 2.6 In-hospital Mortality of STEMI Patients Undergoing Primary PCI during Off-hours and Regular Hours

Wahyu Aditya, Vienna Rossimarina, Fandi Ahmad, Bambang Widiantoro, Dian Zamroni, Isman Firdaus, Siska S. Danny, Dafsa A. Juzar, Daniel P.L. Tobing, Irmalita, Bambang B. Siswanto, and Surya Dharma

*Department of Cardiology and Vascular Medicine,
Faculty of Medicine, University of Indonesia,
National Cardiovascular Center Harapan Kita, Jakarta, Indonesia*

Abstract

Aim: Previous studies have shown contradictory outcomes in ST-segment elevation myocardial infarction (STEMI) patients who underwent primary percutaneous coronary intervention (PPCI) during off-hours versus regular working hours. We aimed to evaluate the relationship between timing of PPCI (off-hours versus working hours) and in-hospital mortality of STEMI admitted to an academic hospital.

Methods: Data was derived from the Jakarta Acute Coronary Syndrome Registry database which consist of 485 STEMI patients treated with PPCI in National Cardiovascular Center Harapan Kita during January to December 2014. Descriptive statistics and logistic regression analyses were applied to evaluate the relationship between treatment during off-hours (Monday to Friday, 4.00pm–07.30 am and public holidays) versus working hours (Monday to Friday 7.30am – 4.00pm) and the incidence of all-cause mortality during hospitalization period.

Results: A total of 274 patients (72%) were treated during off-hours. No major differences in baseline characteristics were observed between the two admissions time. The door-to-device time was shorter during off-hours than regular hours admission (105.57 + 52.12 minutes vs 124,60 + 58.47 minutes , $p < 0.001$). In-hospital mortality was similar in patients treated during off-hours and those treated during regular hours (3.27% vs 2.26%, odds ratio 1.45, 95% confidence interval 0.39 to 5.28; $p = 0.572$).

Conclusion: In STEMI patients who presented during off-hours to an academic hospital, PPCI during off-hours provides similar in-hospital mortality as compared with patients who were treated during regular hours.

Keywords: STEMI, off hours, primary percutaneous coronary intervention, in-hospital death.

OP 2.7 Serum Creatinine Level on Admission Predicts Early Mortality of ST-Elevation Myocardial Infarction Patients Undergoing Primary Percutaneous Coronary Intervention

Vienna Rossimarina, Fandi Ahmad, Wahyu Aditya, Bambang Widiantoro, Dian Zamroni, Isman Firdaus, Siska S. Danny, Dafsa A. Juzar, Daniel P.L. Tobing, Irmalita, Bambang B. Siswanto, and Surya Dharma

*Departement of Cardiology and Vascular Medicine, Faculty of Medicine,
University of Indonesia, National Cardiovascular Center Harapan Kita,
Jakarta, Indonesia*

Abstract

Background: Studies evaluating serum creatinine level on admission and its relation with early mortality of ST-elevation myocardial infarction (STEMI) patients undergoing primary percutaneous coronary intervention (PPCI) were relatively scarce. This study evaluated the relation between serum creatinine level on admission and in-hospital mortality of STEMI patients undergoing PPCI.

Methods: Data was derived from Jakarta Acute Coronary Syndrome Registry. A total of 471 STEMI patients undergoing PPCI in National Cardiovascular Center Harapan Kita from January 1st to December 31st 2014 were retrospectively analyzed. Serum creatinine level was measured in the emergency department prior to PPCI procedure.

Results: The mean age of the patient was 54.7 ± 9.57 years old and most of them were male (85.6%). Patients with serum creatinine level on admission ≥ 1.2 mg/dL ($n = 173$) had a significant higher in-hospital mortality compared to patients with serum creatinine level < 1.2 mg/dL (9.25% vs 1%; adjusted odds ratio 10.36, 95% confidence interval 2.97 to 36.21, $p < 0.001$).

Conclusion: Patients with serum creatinine level on admission ≥ 1.2 mg/dL had a significant higher early mortality than patients with lower serum creatinine level in STEMI patients treated with PPCI.

Keywords: serum creatinine, STEMI, primary PCI, in-hospital mortality.

OP 2.8 Door-in to Door-out time of STEMI Patients in The Primary Hospital: An Analysis from the Jakarta Cardiovascular Care Unit Network System

Fandi Ahmad, Wahyu Aditya, Vienna Rossimarina, Hananto Andriantoro, Iwan Dakota, Bambang B. Siswanto, Surya Dharma

*Department of Cardiology and Vascular Medicine, University of Indonesia,
National Cardiovascular Center Harapan Kita, Jakarta, Indonesia*

Abstract

Background: The Jakarta Cardiovascular Care Unit Network system was built to improve the system of care of acute myocardial infarction (AMI) in Jakarta. The system of care is now focusing the pre-hospital care of AMI patient. One of the program is evaluating the door-in to door-out time (DI-DO) of ST-elevation myocardial infarction (STEMI) patient. This study evaluated the DI-DO time of STEMI patients transferred for primary percutaneous coronary intervention (PPCI).

Methods: Data was collected from the Jakarta Acute Coronary Syndrome registry database which consist of 117 STEMI patients undergoing PPCI in National Cardiovascular Center Harapan Kita from October 1st to December 16th 2014. A descriptive analysis and logistic regression analysis were applied. This study is part of the performance measures for the regional system of care of AMI.

Results: The mean age of the patient was 55.60 ± 8.16 years and most of them had anterior wall MI (57%). Inter-hospital referral cases were found in 52 patients. The median DI-DO time was 180 minutes (interquartile range, 138-322 minutes). Most of the patients (98%) had a DI-DO time of > 60 minutes. The in-hospital mortality of the patient was 5.7% and DI-DO time was not related to increased mortality (odds ratio 1.76, 95% confidence interval 0.15 to 20.81, $p = 0.65$).

Conclusion: This study demonstrates that pre-hospital care for STEMI patients transferred for PPCI needs to be improved in order to optimize the care of STEMI patients in Jakarta as an integral part of the system of care of AMI in Jakarta. Further larger study is needed to observe the relation between DI-DO time and in-hospital mortality.

Keywords: STEMI, DI-DO time, pre-hospital care.

OP 2.9 The Reperfusion Strategies of ST-Elevation Myocardial Infarction (STEMI) Patients at Secondary as compared to Tertiary Health Care Facility in the West Jakarta iSTEMI Network

Dafsah A. Juzar¹, Isman Firdaus¹, Siska S. Danny¹, Dian Zamroni¹, Bambang Widyantoro¹, Surya Dharma¹, Daniel PL Tobing¹, Irmalita¹, Sunarya Soerianata¹, et. al.

¹ Department of Cardiology and Vascular Medicine, Faculty of Medicine, University of Indonesia, National Cardiovascular Center Harapan Kita, Jakarta, Indonesia

² Research assistant program iSTEMI

Abstract

Introduction: According to the STEMI management guidelines, timely reperfusion therapy either with Primary PCI or fibrinolysis is strongly recommended in order to reduce mortality and improve outcomes of STEMI patients presenting less than 12 hours from onset. iSTEMI (Indonesia STEMI) Network, a regional-based STEMI network collaborating with various types of health facility throughout its region. Therefore, we would like to report different reperfusion strategy used within the network.

Material and methods: We used a prospective study research design through July-December 2014 within the West Jakarta iSTEMI Network which consists of 8 government primary health care facilities, 4 private primary health care facilities, 7 secondary health care facilities (1 government 8 hours PCI-capable and 6 private including 4 PCI-capable hospitals) and 1 tertiary 24 hours PCI-capable health care facility (National Cardiovascular Center Harapan Kita). Data were analyzed with SPSS version 16.0 software and presented in percentage. Univariate analysis was performed using Chi Square test and p value < 0.05 was considered to indicate statistical significance.

Results: A total of 661 STEMI patients was enrolled, 73.4% admitted in tertiary facility, 25.4% in secondary facilities and 1.2% in the primary facilities that refused to be referred. Analysis showed that the use reperfusion method in secondary facility and tertiary facility was significantly different (p value < 0.0001). In the secondary facilities, 75 (44.7%) patients were reperfused, 68.9% with fibrinolysis and 31.1% with primary PCI. While in the tertiary facility capable of 24-h primary PCI, from 314 patients (64.8%) reperfused, 86.6% underwent primary PCI procedure, 8.0% fibrinolysis and 5.4 % had spontaneous reperfusion. There were also no significant difference between patient outcomes (in-hospital mortality) and reperfusion strategy used in the secondary and tertiary facility within the network (p value = 0.519).

Conclusion: In the secondary facilities which are mostly private hospitals, fibrinolysis is the mainstay reperfusion strategy. On the other hand, primary PCI is the preferred strategy at the tertiary facility. However, there were no significant difference in “in-hospital mortality” between secondary and tertiary facility.

OP 2.10 Comparison of Intraaortic Balloon Pump versus Medical Therapy in Cardiogenic Shock Secondary to Acute Myocardial Infarction

Novi Ariyanti¹, Fandi Ahmad¹, Nanda Iryuza¹, Isman Firdaus², Dafsah A. Juzar², Daniel P.L. Tobing², Dian Zamroni², Irmalita², Surya Dharma², and Siska S. Danny²

¹ Residents of National Cardiovascular Centre Harapan Kita, Jakarta, Indonesia

² Cardiologist of National Cardiovascular Centre Harapan Kita, Jakarta, Indonesia

Abstract

Background: Intraaortic balloon pump (IABP) counterpulsation is the most widely used mechanical support for the treatment of cardiogenic shock, because its hemodynamic effects. The balloon is inflated during cardiac and deflated during the isovolumetric phase of left ventricular contraction, thereby improving myocardial and peripheral perfusion and reducing afterload and myocardial oxygen consumption.

Aim: To compare IABP with optimal medical therapy in cardiogenic shock secondary to acute myocardial infarction and the end point was in-hospital mortality.

Methods: Data was collected from Registry of Acute and Intensive Cardiac Outcome (RAICOM) at Intensive Cardiovascular Care Unit (ICVCU) National Cardiovascular Center Harapan Kita between September 2014 and February 2015.

Results: Of the 51 patients acute myocardial infarction complicated by cardiogenic shock, IABP performed in 23 patients. 6 patients were lost to follow before discharge from hospital. Samples from this study were 76.5% male and 23.5% female. 72.5% patients diagnosed with ST elevation myocardial infarction (STEMI), 23.5% with non ST elevation myocardial infarction (NSTEMI) and 3.9% with unstable angina pectoris (UAP). 54.9% patients had diabetes mellitus. PCI was performed in 45% patients. Only 3.9% of patients underwent immediate bypass surgery. 5.8% patients were reperfused by fibrinolytic. There were no significant differences in hospital mortality between IABP and medical therapy (p = 0.34).

Conclusion: The use of intraaortic balloon pump did not significantly reduce in-hospital mortality in patients with cardiogenic shock secondary to acute myocardial infarction

Keywords: IABP, cardiogenic shock, in-hospital mortality.

OP 2.11 The Correlation Between Platelet to Lymphocyte Ratio and Severity of Coronary Artery Lesion

Michael S Kawilarang¹, Bambang Budiono², J Pangemanan¹, Reggy L Lefrandt¹, and Agnes Lucia Panda¹

¹ Departement of Cardiology and Vascular Medicine, Faculty of Medicine, University of Sam Ratulangi, Manado. Prof. R. D. Kandou Hospital Manado, Indonesia

² Heart and Vascular Center Awal Bros Hospital Makassar, Indonesia

Abstract

Background: Coronary Artery Disease (CAD) is a leading cause of mortality worldwide and inflammatory process is the vital element of CAD. Recent studies have shown that platelet to lymphocyte ratio (PLR) is associated with inflammatory process in several malignancies however there is not enough data in cardiovascular diseases. Therefore, the aim of this study is to explore the correlation between PLR and severity of atherosclerosis in CAD.

Methods: We retrospectively collected patients who underwent coronary angiography at Awal Bros Hospital between September to December 2013. The severity of CAD was calculated based on Modified Gensini Score. All patients also underwent hematology examination and calculated their PLR. The correlation between PLR and Modified Gensini Score was analysed using correlation analyses in SPSS v.21 software.

Result: In total 40 patients with mean age of 57.3 ± 11.3 years (85% male) were enrolled in this study. Mean modified gensini score was 6.7 ± 4.6 and mean PLR was 10852.3 ± 5658.8. From Spearman's correlation analysis, there was a strong positive correlation between PLR and Modified Gensini Score (r=0.685, p<0.0001). This result also confirmed by the finding from linear regression analysis which

also found a significant correlation ($R^2=0.290$, $p<0.0001$).

Conclusion: Our study suggest that platelet to lymphocyte ratio is a simple method that can be used to predict the severity of coronary artery disease. Further large-scale studies are needed to confirm the finding of this study.

OP.2.12 Effect of High Loading Dose of Atorvastatin in ST Elevation Myocardial Infarction Patients Undergoing Primary Percutaneous Coronary Intervention on Microvascular Perfusion Measured by Index of Microvascular Resistance

Suci Indriani, Doni Firman, Anwar Santoso, Amiliana Mardiani Soesanto

*Department of Cardiology and Vascular Medicine,
University of Indonesia, Jakarta, Indonesia*

OP 3.1 Association of Initial and Terminal Ventricular Activation Velocity Ratio on 12-leads ECG with Myocardial Scar Presence

Sulistiowati, Yoga Yuniadi, Manoeffris Kasim, and Amiliana M. Soesanto

*Department of Cardiology and Vascular Medicine, Faculty of Medicine,
University of Indonesia, Jakarta, Indonesia*

Abstract

Background: Fibrotic scar tissue post infarction may potentially lead to fatal arrhythmias, recurrent ischaemia, heart failure, and sudden cardiac death (SCD). Detecting myocardial scar will guide further treatment which has the most advantages for each patient. Cardiac magnetic resonance (CMR) is still a gold standard which cannot be applied to every patient. A 12-leads ECG might be an alternative. Initial and terminal ventricular activation velocity ratio on surface ECG is comparing electrical conduction at the beginning (v_i) and at the end (v_t) of the QRS complex. Myocardial scar tissue will have a different v_i/v_t than a normal tissue because ischaemia change cellular electrical activity and impulse propagation due to remodelling of intracellular ion channels and transport processes.

Methods: This is a cross-sectional study. A consecutive subjects who underwent CMR in National Cardiac Centre Harapan Kita during January 2013 and August 2014 were included. Myocardial scar were analyzed visually using late gadolinium enhancement CMR. V_i/V_t on 12-leads ECG were measured manually on each lead and mean of each contiguous leads were included into analysis.

Results: A total of 113 male subjects with average age of 55.7 ± 9.7 years old were enrolled. Myocardial scar were located in 1 territory or more in most of subjects and left anterior descending (LAD) territory as the most common territory. General analysis of v_i/v_t in each contiguous leads shows significantly smaller v_i/v_t value in myocardial scar presence with p value <0.001 in V_1-V_5 leads, $p=0.006$ in I, aVL, V_6 leads, and $p=0.004$ in II, III, aVF leads. Specific analysis of v_i/v_t in V_1-V_5 leads show significant difference of v_i/v_t in isolated and mixed scar in LAD territory, meanwhile v_i/v_t in I, aVL, V_6 and II, III, aVF leads show significant difference of v_i/v_t only in mixed scar in each territory according to contiguous leads. A cut-off value ≤ 1.35 mV of v_i/v_t in V_1-V_5 leads with 71.4% sensitivity and 75% specificity and a cut-off value ≤ 1.20 mV of v_i/v_t in II, III, aVF leads with 69.4% sensitivity and 66.7% specificity were obtained by ROC analysis.

Conclusion: V_i/V_t on 12-leads ECG associated with myocardial scar presence and location. A value of v_i/v_t 1.20-1.35 mV associated with myocardial scar presence in LAD territory and RCA territory with 69.4-71.4% sensitivity and 66.7-75% specificity.

Keywords: myocardial infarction, myocardial scar, initial and terminal ventricular activation velocity ratio (v_i/v_t).

OP 3.2 Predictors of mortality after mitral valve replacement surgery. Case study at dr. Kariadi General Hospital.

Agus Probo Suyono¹, Sodikur Rifqi¹, Sahal Fatah²,
M. Arif Nugroho¹, Hardian³

¹ *Departement of Cardiology and Vascular Medicine, Faculty of Medicine,
Diponegoro University, dr. Kariadi General Hospital, Semarang, Indonesia*

² *Cardiothoracic and Vascular Division, Department of Surgery,
Faculty of Medicine, Diponegoro University –
dr. Kariadi General Hospital, Semarang, Indonesia*

³ *Departement of Physiology, Faculty of Medicine,
Diponegoro University, Semarang, Indonesia*

Abstract

Background: Valvular heart disease still become one of the cause of morbidity and mortality in Indonesia. Mitral valve replacement surgery (MVR) is one of the intervention strategy in the management of mitral valve disease. Mortality report pafter MVR from many countries varies between 4-7%. Study on predictor of early and late mortality after MVR never been held at dr. Kariadi General Hospital. Aim of this study is to ondity preoperative, intraoperative, and postoperative factors on early and late mortality after MVR.

Methods: A retrospective cohort study was done in dr. Kariadi General Hospital in patients underwent MVR in the periode 2008-2013. Categories and variabels were taken from demographic, laboratory, echocardiography data, surgery report, and postoperative data from medical records. Statistical analysis was done using multivariate analysis using logistic regression method.

Result: There were 92 subjects fit the inclusion criteria, with 68 patients (73,9%) alive, 14 patients (15,2%) had early mortality, and 10 patients (10,8%) had late mortality. Factors identified as predictors of early mortality are functional class NYHA III, postoperative AKI, and postoperative sepsis. Factors identified as predictors of late mortality are functional class NYHA III. Calibration and discrimination test of prediction models shows good result.

Conclusion: Preoperative factor identified as predictor of early and late mortality after MVR is functional class NYHA III, whereas LVEF $<55\%$ is not a predictor of mortality. Intraoperative factor, that is, CPR duration 59,7 minutes in this study is not predictor of mortality after MVR. Postoperative factors indentified as predictor of early mortality after MVR are AKI and sepsis. These informations are expected to be helpful in deciding management strategy during hospitalization, intervention, and postdischarge.

Keywords: predictor, early mortality, late mortality, mitral valve replacemanet surgery.

OP 3.3 Correlation Between Diastolic Function Parameters and Optimal AV Delay Duration in Patient with Dual Chamber Pacemaker

D Yugo, Yoga Yuniadi, Ario Soeryo Kuncoro, and A Mardiani

*Department of Cardiology and Vascular Medicine Faculty of Medicine
University of Indonesia, Jakarta, Indonesia*

Abstract

Background: AV Delay Duration (AVD) in patient with dual chamber pacemaker defines atrioventricular synchrony. Optimazation of AVD could improve quality of life and hemodynamic parameters

compared to factory setting. Despite that, AVD optimization is a time consuming procedure and not cost effective. factors that influence the optimal AVD should be sought.

Methods: This is a cross sectional study on 35 total AV block patients that came to National Cardiovascular Center Harapan Kita from October to November 2014. Echocardiography on left ventricle diastolic indices was performed in factory setting AVD. The AVD that gives to the biggest LVOT VTI was set as the optimal AVD. Statistical analysis was done to correlate between diastolic indices and optimal AVD.

Results: Weak correlation was noted between diastolic indices (E/A ratio) and optimal AVD ($r: -0,356$; $p: 0,036$). Linear regression analysis showed a negative correlation between E/A ratio {coefficient -0.477 ; $p: 0,007$ (CI 95% - 84.4 to -14.1)} and medial e' {coefficient -0.390 ; $p: 0.026$ (CI 95% -16.3 to -1.1)} with optimal AVD (adjusted with age, ejection fraction, and factory setting AVD). Different E/A ratio showed a different optimal AVD mean, 173.46 ± 42.23 ms for $E/A \geq 1$ vs. 128.89 ± 42.5 ms for $E/A < 1$ ($p: 0.01$)

Conclusion: This paper shows a negative correlation between echocardiographic diastolic function indices (E/A ratio and medial e') with optimal AVD

Keywords: Optimal AV Delay Duration, diastolic indices, E/A ratio.

OP 3.4 Correlation between Modified Selvester QRS Score, QTc, T-peak to T-end with Functional Capacity in Stable Heart Failure Patients with History of Myocardial Infarction

M. Yolandi Sumadio, Budi S. Pikir

*Cardiology and Vascular Medicine Department,
Soetomo General Hospital, Airlangga University, Surabaya, Indonesia*

Abstract

Background: Functional capacity impairment in heart failure patients with history of previous myocardial infarction (MI) were influenced by both systolic and diastolic dysfunction. Electrocardiography (ECG) could provide valuable information regarding left ventricle systolic and diastolic dysfunction.

Aim: To assess the correlation between electrocardiographic parameters of either left ventricle systolic (Modified Selvester QRS Score) and diastolic function (QTc and T-peak to T-end) with functional capacity in stable heart failure patients with history of myocardial infarction.

Methods: The study design was a cross-sectional study on 33 consecutive stable heart failure patients with history of myocardial infarction visiting cardiology outpatient clinic of Dr. Soetomo Hospital, Surabaya. A resting electrocardiogram, echocardiogram were taken, followed by a treadmill stress test employing Naughton protocol. Electrocardiographic parameters taken were Modified Selvester QRS Score, QTc (using Bazett's formula) and T-peak to T-end (TpTe). Echocardiographic parameters taken were ejection fraction, E/A ratio and E/E'. Exercise capacity impairment was assessed with a validated Borg scale. Appropriate statistical analyses were used to determine the correlation of Modified Selvester QRS Score, QTc and (TpTe) with exercise capacity

Results: Study subjects were 69.7% males with age 58.45 ± 6.2 years old. All subjects were found to have both systolic dysfunction (EF by Teich $44.27 \pm 8.98\%$, EF by Biplane $40.55 \pm 8.26\%$) and diastolic dysfunction ($E/A 1.05 \pm 0.51$, $E/E' 6.24 \pm 1.32$). Exercise capacity was found at 3.69 ± 1.8 METs. We found a non-significant correlation between Modified Selvester QRS Score and functional capacity ($r -0.322$, $p 0.068$), modest correlation between QTc and functional capacity ($r -0.345$, $p 0.049$) and TpTe and functional capacity ($r -0.465$, $p 0.006$).

Conclusion: QTc, and TpTe were modestly correlated with functional capacity in stable heart failure patients with history of myocardial infarction.

Keywords: Modified Selvester QRS Score, QTc, TpTe, myocardial infarction, heart failure, functional capacity.

OP 3.5 Association Between Mean Platelet Volume and Spontaneous Echo Contrast in Patient with Valvular Atrial Fibrillation

AA Nursididiq, P Wulandari, S Indriani, H Arifianto,
N Purwaningtyas, and T Wasyanto

*Departement of Cardiology and Vascular Medicine, Universitas Sebelas
Maret/Dr Moewardi Hospital, Surakarta, Indonesia*

Abstract

Background: Mean platelet volume (MPV) was accurate for measuring platelet size, and considered as a marker of platelet function. Spontaneous echo contrast (SEC) is a risk factor for thrombus formation in left atrium (LA) and an indicator of systemic thromboembolic event. The purpose of our study was to determinate the association between MPV and SEC in valvular atrial fibrillation patients.

Methods: Retrospective study was conducted between February 2014 to January 2015 in patient who admitted to Dr. Moewardi General Hospital due to symptomatic valvular atrial fibrillation. Blood examination and transthoracic echocardiography were performed to all patient. They were divided into two groups according to presence of SEC in LA.

Results: 66 patients were included in this study, there were 32 patients (mean age 43.2 ± 11.7) in SEC (+) group and 34 patients (mean age 49.3 ± 12.9) in SEC (-) group. MPV was significantly higher in SEC (+) group (8.6 ± 0.7 fl vs 7.6 ± 0.6 fl, $p < 0.001$). MPV level was divided into two subgroups for bivariate analysis, more than 8.85 fl and below according to previous study. Higher level MPV was associated with presence of SEC, odds ratio (OR) 7.07, 95% confidence interval (CI) 1.78-28.08; $p = 0.003$. Multivariate analysis shown that higher MPV level is an independent risk factor of SEC formation, OR 8.29, 95% CI 1.83-37.61; $p = 0.006$.

Conclusion: These study show that higher level of MPV has association with presence of SEC and an independent risk factor of SEC formation in patient with valvular atrial fibrillation.

OP 3.6 Early experience of Mitraclips Procedure at National Cardiovascular Center Harapan Kita, Jakarta

Prima Almazini, Nani Hersunarti, Rarsari Soerarro,
Bambang Budi Siswanto, Doni Firman, and Amiliana M Soesanto

*Department of Cardiology and Vascular Medicine, Faculty of Medicine
University of Indonesia, National Cardiovascular Center Harapan Kita,
Jakarta, Indonesia*

Abstract

Background: Percutaneous mitral valve repair (PMVR) with Mitraclips is considered as an optional treatment for patients with significant MR who are high risk for having surgery. This novel therapy is less invasive, safe, and effective for MR reduction, and hence improve symptoms of heart failure, as well as reverse left ventricle remodeling. The purpose of this study was to report the early experience of Mitraclips procedure for treating significant MR at the National Cardiovascular Center Harapan Kita.

Methods: This retrospective study was conducted at National

Cardiovascular Center Harapan Kita Hospital, Jakarta. The data was retrieved from computerized database and medical records from February 2014 to January 2015, and then analyzed with SPSS.

Results: A total of 6 patients with age 51 - 75 years old, underwent Mitraclips procedure. Of all patients, the MR were severe in 5 patients and moderate in 1 patient. One was female and 5 were male. Among these patients, 2 were degenerative MR and 6 were functional MR. Two patients were treated with single Mitralclip and 4 patients required double Mitralclip. Post procedure, there was reduction of MR to mild was achieved in patients and to moderate in 4 patients. The left ventricular end diastolic dimension decreased from 66 ± 6.5 mm at baseline to 59 ± 7.3 mm ($p=0.04$) and end systolic dimensions decreased from 50 ± 10.6 mm at baseline to 48 ± 10.0 mm before discharge ($p=0.27$) as evaluated from predischage echocardiography. At one month after procedure, 2 patients were in New York Heart Association (NYHA) functional class I and 4 patients were in class II. In-hospital mortality was 0%. Only 1 patient was re-hospitalized after procedure due to heart failure.

Conclusion: From our early experience, Mitraclips was considered an effective and safe option for patients with functional and degenerative MR who are at high risk for open-heart surgery. Left ventricle dimension, NYHA functional class, MR reduction, and re-hospitalization rate were improved after procedure.

Keywords: mitral regurgitation, mitral clip, outcome.

OP 3.7 Prediction of Recovery of Left Ventricular Function After Revascularization in Patients with Coronary Artery Disease Measured by Myocardial Strain

Safir Sungkar, Udin Bahrudin, Arif Nugroho,
Susi Herminingsih, Yan Herry, and Sodikur Rifqi,

*Departement of Cardiology and Vascular Medicine, Faculty of Medicine,
Diponegoro University,
Dr. Kariadi Hospital, Semarang, Central Java, Indonesia*

Abstract

Background: Global left ventricular function is an important predictor of outcome and determines eligibility for interventions such as percutaneous coronary intervention (PCI). Myocardial strain measurement by using speckle tracking is a new technique for assessing myocardial function and provides more accurate and has less intra and interobserver variability than those of ejection fraction (EF) as well as wall motion score index. This study investigated the ability of myocardial strain to predict early recovery of LV function in patients with coronary artery disease (CAD) underwent PCI.

Methods: A total of 38 patients (age: 56.0 ± 7.7 y.o.) with CAD who underwent elective PCI were enrolled. Echocardiographic measurement of LV function by 2D speckle tracking to assess global longitudinal strain was performed in all patients pre and post (24 to 48 hours) PCI procedure. The LV global longitudinal peak strain average (GLPS-Avg) was calculated from 16 segments measurement.

Results: Mean GLPS-Avg pre and post PCI were $-12.41 \pm 4.82\%$ and $-13.41 \pm 4.94\%$, respectively. Mean EF pre and post PCI were $43.2 \pm 11.0\%$ and $45.6 \pm 11.7\%$, respectively. The improvement of LV function was statistically more significant when it was measured by GLPS-Avg ($p < 0.0001$) than that of EF ($p = 0.001$). The improvement of GLPS-Avg was correlated with target vessel revascularization ($p = 0.002$, coefficient correlation = 0.484).

Conclusions: Speckle tracking echocardiography derived global longitudinal strain may be able to predict early recovery of LV function after revascularization in patient with CAD. Improvement of GLPS-Avg was correlated moderately with target vessel revascularization.

OP 3.8 The Pulse Wave Velocity is Linearly Correlated with Resting Systolic and Diastolic Blood Pressure in Hypertensive Patients

K Elka, J Winata, M Rotty, DH Susanto, EC Tanoto,
HA Kuncoro, JA Pangemanan, and AL Panda.

*Department of Cardiology and Vascular Medicine, Faculty of Medicine
Sam Ratulangi University, Prof.Dr.R.D.Kandou Manado General Hospital*

Abstract

Background: Aortic stiffness is an independent predictor for cardiovascular event. If arteries lose their natural elasticity, systolic blood pressure become higher and diastolic blood pressure become lower. Method of evaluating arterial stiffness is aortic pulse wave velocity (PWV). The aim of this study is to investigate the correlation between PWV and systolic and diastolic blood pressure.

Methods: Male hypertensive patients, aged 40-60 years old who underwent Doppler echocardiography were included in this study. The measurement of carotid-femoral PWV is made by dividing the distance (from the carotid point to the femoral point) by the so-called transit time (the time of travel of the foot of the wave over the distance). Hence, $PWV = D$ (centimeters)/ Dt (miliseconds). The correlation between PWV and systolic and diastolic blood pressure were analysed using linear regression test.

Results: A total 40 patients were included in this study. Those were significant correlation between PWV and systolic ($R=0.473$, $p=0.002$) and diastolic ($R=0.454$, $p=0.003$) blood pressure.

Conclusion: increasing PWV is linearly associated with systolic and diastolic blood pressure.

Keywords: aortic stiffness, hypertension, pulse wave velocity
Conflict of interest: None.

OP 3.9 Relationship Between Physical Activity Levels With P Selectin Levels In Rheumatic Mitral Stenosis Patients 3 months After Percutaneous Transvenous Mitral Commissurotomy

Siska Yulianti, Yoga Yuniadi, Anna Ulfah Rahajoe,
and Amiliana Mardhiani Soesanto

*Department of Cardiology and Vascular Medicine, Faculty of Medicine
Universitas Indonesia, National Cardiovascular Center Harapan Kita,
Jakarta, Indonesia*

Abstract

Background: Mitral stenosis (MS) is an important health problem in Indonesia. P selectin level in MS increases due to endothelial dysfunction and platelet activation. Percutaneous transvenous mitral commissurotomy (PTMC) is one of the management for MS patients. Thus, the physical activity can improve and in turn affect the level of P selectin. There has been no study link the level of physical activity with the level of P Selectin 3 months after of PTMC.

Methods: This is a cross sectional study with 56 subjects who underwent PTMC from May 2013 to February 2014 at the Hospital of National Heart Centre Harapan Kita. Then, 35 samples met the inclusion criteria. Clinical and echocardiography data before and 3 months after PTMC were taken from medical records. Interviews were conducted 3 months after PTMC. Physical activity levels were divided into 2 groups: group 1 (1-4 METs) and group 2 (> 4 METs). Sample for P selectin was taken 3 months after PTMC. Further statistical analysis was done to determine the relationship between physical activity level with level of P Selectin 3 months after PTMC in rheumatic MS.

Result: Patients who will undergo PTMC have the mean age of

40.00 ± 11.58 years with a higher proportion of women than men (74.3%) and the proportion of sinus rhythm is higher than atrial rhythm (57.1%). T-test analysis result showed significant difference in the average levels of P selectin 3 months after PTMC on the level of physical activity 1-4 METs and > 4 METs. The average P selectin levels on the level of physical activity in group with > 4 METs was significantly lower compared with group 1-4 METs (p = 0.003). After multivariate analysis, the physical activity level still has an effect on the P selectin levels 3 months after PTMC (p = 0.001). The Mitral Valve Area (MVA) after PTMC also has an effect on P selectin levels (p = 0.018). However, the level of physical activity after PTMC has a greater effect than MVA.

Conclusion: There is a relationship between the level of physical activity with P selectin levels 3 months after PTMC. Group with higher activity level (> 4 METs) have lower level of P selectin (with the mean difference levels of P Selectin 10,489 ug/ml)

Keywords: Level of physical activity, PTMC, P Selectin, Rheumatic Mitral Stenosis.

OP 3.10 The Comparison of Acute Effects of Clove Cigarette with The White Cigarette Smoking on Right Ventricle Function

Victor Joseph, R.W.M Kaligis, Bambang Budi Siswanto

Departemen Kardiologi dan Kedokteran Vaskular, FK Universitas Indonesia/RS Jantung Nasional Harapan Kita, Jakarta

Abstract

Background: Smoking is one of the most modifiable risk factor in coronary heart disease. In Indonesia, 88% of cigarette smoked is clove cigarette. To the best of our knowledge, there were no studies published regarding this issue on right ventricular diastolic function. This study is to describe the acute effects of clove cigarette smoking on right ventricular function in young healthy participants and comparing the effects caused by clove cigarette to white cigarette.

Methods: This is an experimental study carried out in Department of Cardiology and Vascular Medicine Universitas Indonesia/ National Cardiavascular Center Harapan Kita in March - April 2013. Fifty participants were asked not to smoke for at least 2 hours prior to study. Echocardiography study was performed to each participants before, right after and 60 minutes after smoking. Participants were then asked to come back on the next day to perform the same procedure with another kind of cigarette.

Result: After smoking, there was a decreased E/A from baseline and increase 60 minutes after smoking. Deceleration time was longer right after smoking and got short 60 minutes after smoking, in white and clove cigarette smoking. Statistic calculation was made with comparing the clove with white cigarette to right ventricular function, right and one hour after smoking and found there is no significant value was found.

Conclusion: Clove and conventional cigarette smoking both have acute effects on right ventricular diastolic function where clove cigarette have no more significant diastolic function change of right ventricular compare to the white one.

Keywords: Clove cigarette, regular cigarette, right ventricular diastolic function, E/A, DT, MPAP, TAPSE.

OP 3.11 Correlation between Left Ventricle Strain and Strain Rate with Functional Capacity in Post-Myocardial Infarction Patients with Heart Failure

M Muqsith and Budi S Pikir

Department of Cardiology and Vascular Medicine Department, Soetomo General Hospital, Faculty of Medicine, Airlangga University, Surabaya, Indonesia

Abstract

Background: Myocardial infarction (MI) may alter left ventricular systolic function, which in turn may reflect on functional capacity. Objective systolic function assessment using 2D speckle-tracking echocardiography (2D-STE) is promising.

Methods: A cross-sectional study was done on 33 consecutive post-MI patients with class I-II NYHA heart failure visiting cardiology outpatient clinic of Soetomo General Hospital, Surabaya. The resting echocardiogram was taken, followed by a treadmill stress test employing Naughton protocol. Echocardiographic parameters taken were ejection fraction and apical views for offline 2D-STE analysis using automated function imaging (AFI). Exercise capacity impairment was assessed with a validated Borg scale. Appropriate statistical analyses were used to determine the correlation of systolic longitudinal strain and strain rate with exercise capacity

Results: Study subjects were 69.7% males with age 58.45±6.2 years old and BMI 24.07±3.2 kg/m². Proportion of hypertension was 60.6%, smoking 51.5%, diabetes mellitus 42.4% and dyslipidemia 42.4%. EF by Biplane was 40.55 ± 8.26%; with global peak longitudinal strain -12.23 ± 5.19%, and strain rate -0.67 ± 0.25s⁻¹; and peak exercise capacity 3.69 ± 1.8 METs. Using Pearson's test, there was a strong negative correlation of systolic longitudinal strain and strain rate with functional capacity (r = -0.577, r = -0.607 consecutively; p<0.05).

Conclusion: Left ventricle systolic longitudinal strain and strain rate were strongly correlated with functional capacity in post-MI patients with heart failure.

Keywords: longitudinal strain, strain rate, functional capacity, myocardial infarction, heart failure.

OP 3.12 Correlation between Arterial Stiffness with Left Ventricular Mass Index and Diastolic Function in Patients with Non Diabetic Chronic Kidney Disease Stage 3-4

Laksmi Pramushinta, Budi S Pikir, and Pranawa

Department of Cardiology and Vascular Medicine Department, Soetomo General Hospital - Medical Faculty, Airlangga University, Surabaya, Indonesia

Abstract

Background: Cardiovascular morbidity and mortality are greatly enhanced in patients with chronic kidney disease (CKD). Arterial stiffness has been recognized as an independent predictive value for cardiovascular events. Increased arterial stiffness is a marker of vasculopathy in CKD patients reflecting cardiovascular damage.

Methods: A cross-sectional study was done on 40 consecutive CKD stage 3-4 patients visiting nephrology outpatient-clinic of Soetomo General Hospital Surabaya. Carotid arterial stiffness (CAS) was measured by carotid ultrasound and calculated by β stiffness index formula. Diastolic function and LVMI were evaluated by echocardiography. Coronary artery disease, severe valvular heart disease, congenital heart disease, atrial fibrillation, history of cerebrovascular disease and diabetes mellitus, and active smoking were excluded from the study.

Results: Subjects' mean age were 51.2±9.62 years old, systolic and diastolic blood pressure (SBP and DBP) 139.07±25.99 and 87.35±16.74 mmHg. Proportion of hypertension was 62.5%. Mean CAS (β stiffness index), LVMI, E/A and E/E' were 9.29±2.86, 98.16±22.3 g/m², 0.82±0.27 and 8.15±1.3, respectively. CAS was significantly correlated with E/E' (r=0.517, p=0.001) and

LVMI ($r=0.396, p=0.011$). SBP was also correlated with LVMI ($r=0.491, p=0.001$). Linier regression analysis showed that SBP was a stronger determinant of LVMI ($p<0.001$), compared to CAS.

Conclusion: Arterial stiffness was correlated positively with diastolic function (E/E') and LVMI in patient with non diabetic chronic kidney disease stage 3-4.

Keywords: Arterial stiffness, diastolic function, left ventricular mass index, chronic kidney disease.

IV. Moderated Poster

MP 1.1. The Role of Carvedilol as Cardioselective Beta Blocker in Management of Peripartum Cardiomyopathy and Other Pregnancy-Associated Heart Failure by Improving Left Ventricular Function and Myocardium Perfusion

Michael Jonatan and Ricardo Adrian Nugraha

Faculty of Medicine, University of Airlangga, Surabaya, Indonesia

Abstract

Background: Peripartum cardiomyopathy (PPCM) is defined to the development of idiopathic left ventricular systolic dysfunction between last month of pregnancy until 5 months after partum in women without preexisting cardiac dysfunction. The incidence of PPCM in Indonesia is estimated to be 1 : 2000-4500 live births.

Methods: Systematic review. Trials were searched in computerized general databases (PUBMED, SCIEDIRECT, etc) by searching keywords or check bibliographies.

Results: Meta analysis from several experiments that had been done by multicenter project showed 89 PPCM mothers, 43 patients (48%) received standard therapy with loop diuretics, 46 patients (52%) were given loop diuretic plus carvedilol in ratio of 1:1 to carvedilol CR or immediate-release (IR) carvedilol. The objective was to compare the efficacy of carvedilol compared to placebo, with a reference arm of 5-20 mg/day of carvedilol IR. The primary outcome in hospitalization time is, carvedilol is more superior than control group (14,72 : 23,4). Carvedilol is also more superior in lowering blood-pressure (21,8mmHg : 14,9mmHg) and decreasing heart enzyme (Ck-MB, Cardiac Troponin, NT-proBNP). There is no report about severe adverse effect of these drugs.

Discussion: β -blockers may improve left ventricular function in PPCM. Selective β -blockers are considered safe during pregnancy, whereas there have been a case report of fetal bradycardia and growth retardation in consuming non-selective β -blocker. To reach cardiomyopathy-targeted therapy, carvedilol can be combined with IVIG, pentoxifylline, and bromocriptine.

Conclusion: Carvedilol shows promising result in small trials but requires further evaluation.

Keywords: Carvedilol, Peripartum Cardiomyopathy, Congestive Heart Failure, Selective β -Blocker.

MP1.2. Shock Index as a Predictor of Short-term Outcome in Acute Decompensated Heart Failure Patients: Data from Indonesian Heart Failure Registry

Bambang Budi Siswanto¹, Christian Rendy Chandra²,

Bayushi Eka Putra², Eka Adip Pradipta², Gusti Rizky Teguh Ryanto²,

Oryza Gryagus Prabu², Edwin Chandra²

¹Department of Cardiology and Vascular Medicine Faculty of Medicine University of Indonesia, National Cardiovascular Center Harapan Kita

²Medical Research Unit, Faculty of Medicine University of Indonesia

Abstract

Background: The usefulness of the shock index (SI) has been recognized for traumatic patients with poor outcomes. However, to our knowledge, no studies in heart failure populations have been carried out to establish whether there are any trends associated with SI, especially in Indonesia. This study was conducted to assess the utility of SI in predicting length of stay (LOS) as a short-term outcome.

Methods: We retrospectively analyzed hospitalized patients' data from Heart Failure Registry in National Cardiovascular Centre Harapan Kita Indonesia, based on European Society of Cardiology (ESC) Heart Failure Registry, from January to December 2012. The outcome measure was LOS (≥ 7 or < 7 days). SI and possible factors, including demographics, clinical conditions, and medication were categorized and analyzed using bivariate and multivariate analysis.

Results: 1014 data were included in analysis. Bivariate analysis showed that male patients, history of diabetes mellitus (DM), hyponatremia (≤ 135 mEq/L), heart failure reduced ejection fraction (HFrEF, $EF \leq 40\%$), tachycardia (> 100 x/minutes), hypertension ($\geq 140/90$ mmHg), diuretic and ACE inhibitor medication were more likely to have longer LOS ($p < 0.25$) with $SI \geq 1$ showing significant difference ($p < 0.001$). After multivariate analysis, $SI \geq 1$ was the strongest independent predictors for $LOS \geq 7$ days (OR 2.46; 95%CI 1.7-3.6; $p < 0.001$), followed by DM history (OR 1.4; 95% CI 1.1-1.9; $p = 0.005$), HFrEF (OR 1.3; 95%CI 1.0-1.3; $p = 0.03$), hyponatremia (OR 1.3; 95%CI 1.0-1.8; $p = 0.035$).

Conclusion: SI was found to be the strongest independent predictors of longer LOS among patients with decompensated heart failure.

Keywords: Shock index ;Length of stay ;Acute decompensated heart failure.

MP1.3. Predisposing Factors of Acute Kidney Injury in Acute Decompensated Heart Failure Patients Admitted in Cardiovascular Intensive Care Unit Sanglah Hospital: A Descriptive Study

Made Satria Yudha Dewangga, and IGN Putra Gunadhi

Department of Cardiology and Vascular Medicine Udayana University / Sanglah General Hospital Denpasar, Indonesia

Abstract

Background: Heart failure is progressively chronic disease that affected almost 6 millions people worldwide with 600000 new cases each year. Acute Kidney Injury (AKI) often occurred as comorbid disease that complicates patients with acutely decompensated heart failure (ADHF) in emergency department and cardiovascular intensive care unit (CICU). This condition have high burden of morbidity and mortality in ADHF patients. Known predisposing factors of AKI in ADHF is multifactorial but commonly consist of shock condition, hypertension, diabetes mellitus (DM) type 2, history of prior AKI, proteinuria, comorbid infections, consumption of nephrotoxic drugs, and anemia.

Purpose: Purpose of this study is to determine distribution and prevalence of predisposing factors of AKI in ADHF patients admitted in CICU Sanglah general hospital

Methods: Method of the study is survey to patients diagnosed with AKI and ADHF admitted in CICU Sanglah general hospital enrolled from April until July 2014. Data obtained with cross sectional method and presented in descriptive form. Samples of this study was obtained with consecutive sampling. Data is consist of age, gender, hemodynamic profiles of ADHF, etiology, prior DM type 2, hypertension, prior history of AKI, comorbid infections (pneumonia or urinary tract infections), prior history of nephrotoxic drug

consumption, hemoglobin level, random blood sugar, urine analysis, serum ureum and creatinin, and echocardiography results. Analysis was done with SPSS for Windows 18. Univariate analysis was done and description presented in table of distribution frequency, mean, deviation standard, maximal and minimal point.

Results: Total sample obtained was 49 ADHF with AKI patients. 48 samples (97.2%) have predisposing factors, and 1 sample (2.8%) does not have predisposing factor. Most common etiology is coronary artery disease (25 samples/51.7%), followed by hypertensive heart disease (7 samples/14.2%), rheumatic heart disease (7 samples/14.2%), dilated cardiomyopathy (7 samples/14.2%) and valvular heart disease non-rheumatic (3 samples/5.7%). The most common predisposing factor is proteinuria (22 samples/45%) and consumption of nephrotoxic drugs (22 samples/45%), then followed by prior history of AKI (15 samples/31.4%), pneumonia or UTI as comorbid infections (15 samples, 31.4%), hypertension (14 samples/28.5%), shock (13 samples/26%), DM type 2 (8 samples/17%), and least common is anemia (1 sample/2.8%). 35 samples (71.4%) have more than one predisposing factors with most common combination is proteinuria with consumption of nephrotoxic drugs (13 samples/26%).

Conclusion: Proteinuria and consumption of nephrotoxic drugs (in this study referred as untailed use of diuretics) is most prevalent predisposing factors of AKI in ADHF patients admitted in CICU Sanglah general hospital followed by others factors such as prior AKI, UTI and pneumonia, hypertension, shock, DM type 2, and anemia. Most of the patients have more than one predisposing factors which required comprehensive and multidisciplinary approach in the management and prevention of AKI in ADHF patients.

Keywords: Predisposing factors, acute kidney injury, acute decompensated heart failure.

MP1.4. Hypertension Profile Comparison Between Natives and Outsiders in Papua Province, District of Mamberamo Raya

Andy Sukmadja

*Department of Health of Mamberamo Raya District,
Papua Province, Indonesia*

Abstract

Background: Among U.S. adults, more than 40% of blacks have hypertension, compared with 25 % of white and Hispanics. In U.S. blacks, hypertension not only is more prevalent than in other racial and ethnic groups but also starts at a younger age and more severe. The present study was carried out in order to describe the hypertension profile difference between natives people of Papua and outsiders.

Method: The study is a descriptive prospective study. Data are taken from patients over 18 years old who came to the outpatient-clinic in Mamberamo Raya Moving Hospital from May 2014 to August 2014. Blood pressure will be classified according to JNC 7. Subjects were further classified as gender, age and stage of hypertension in each group (natives and outsiders).

Result: There were a total of 361 patients consisting of 253 (70.1%) natives and 108 (29.9%) outsiders. Hypertensive patients were 101 (39.9%) and 24 (23%) respectively. Out of 101 patients in natives' group, female were more numerous than male (64 (63.3%) and 37 (36.7%)). It is the opposite of outsiders' group where male were 15 (62.5%) and female were 9 (37.5%). Natives' group were found to have more hypertension stage 2 which was 34 (33.6%) than outsiders' group which was 5 (20.8%).

Conclusion: Hypertension seems to be more severe and prevalent among natives in comparison to outsiders, despite highly identical

diet and activities. This suggests the influence of ethnic and racial difference in the development of hypertension.

MP1.5. Correlation Between Carotid and Femoral Stiffness With Left Ventricle Diastolic Stiffness in Diabetes Mellitus Type II patients

Chandra R, Pikir BS, Wibisono S

*Cardiology and Vascular Medicine Department
Soetomo General Hospital – Medical Faculty, Airlangga University
Surabaya, Indonesia*

Background: Arterial stiffness increased due to age and exacerbated by many common disorders such as hypertension, diabetes mellitus or renal diseases. Arterial stiffness has been recognized as an independent predictive value for cardiovascular events. Moreover, information on the 'heart-vessel coupling disease', in which combined stiffness of both heart and arteries interact to limit cardiovascular performance and its possible implications in different clinical conditions, is still not well known.

Objectives: To Analyzed Correlation between arterial stiffness with left ventricle diastolic stiffness in in Diabetes Mellitus Type II patients.

Methods: Examination arterial stiffness in the common carotid artery and femoral artery communists, left ventricular diastolic stiffness with cardiac ultrasound in patients with diabetes mellitus type II. Patients with chronic kidney disease, a history of cerebrovascular disease and coronary heart disease were excluded from this study.

Results: Arterial stiffness measured in the common carotid artery has a highly significant correlation with left ventricular diastolic stiffness ($r = 0.37, p < 0.05$). Arterial stiffness measured in the femoral artery communists did not have a significant correlation ($r = 0.30; p > 0.05$). There are differences between the Carotid and Femoral stiffness and left ventricular diastolic stiffness in type II diabetic group with hypertension (CAS 3.58 ± 2.15 ; 4.65 ± 2.29 FAS; LVDS 1.73 ± 0.37) than in group DM type II without hypertension (CAS 3.27 ± 1.42 ; 4.88 ± 2.26 FAS; LVDS 1.88 ± 0.38 with $P > 0.05$). there is a difference between the Carotid and Femoral stiffness and left ventricular diastolic stiffness in diabetes group with controlled blood sugar levels (2.46 ± 0.97 CAS FAS 3.88 ± 1.77 and 1.51 ± 0.29 LVDS) than in group diabetes with uncontrolled blood sugar levels (CAS 4.24 ± 1.8 5.61 ± 2.34 LVDS FAS 2.10 ± 0.19 to $P < 0.001$ at CAS and LVDS and $P < 0.05$ at FAS).

Conclusion: Carotid stiffness will increase the occurrence of left ventricular diastolic stiffness. Presence or absence of hypertension did not show differences in arterial stiffness and LV Diastolic stiffness in a patient population with diabetes mellitus type II. that the blood sugar levels are not controlled in type II diabetes will increase arterial stiffness of the carotid and femoral ie stiffness and LV diastolic stiffness higher than in the group with controlled blood sugar levels. Further research is needed to prove this conclusion.

Keywords: Arterial stiffness, left ventricular diastolic stiffness, Diabetes Mellitus Type II.

MP1.6. Hospital Mortality in Acute Coronary Syndrome: Differences Related to Gender

Haikal, Nana M. Suryana, Dafsah A. Juzar, Isman Firdaus, Irmalita, Siska S. Danny, Surya Dharma, Daniel P.L Tobing

*Department of Cardiology and Vascular, National Cardiovascular Centre
Harapan Kita, Jakarta, Indonesia*

Abstract

Background: To identify differences among men and women with acute coronary syndrome (ACS) in terms of in-hospital mortality.

Methods: Observational study based on Registry of Acute and Intensive Cardiology outCOME (RAICCOM) data from Intensive Cardio-Vascular Care Unit National Cardiovascular Centre Harapan Kita (ICVCU-NCCHK). This encompassed all episodes of emergency hospital admissions (587 cases, including women and men) with a main diagnosis of either ST Elevation myocardial Infarction, Non-ST Elevation Myocardial Infarction or Unstable Angina Pectoris that sent to ICVCU-NCCHK from September 17th, 2014 until February 13th, 2015. The relationship between gender and mortality was examined for the population as a whole.

Results: During hospitalization, ACS mortality was 6,98% (41 cases out of 587). ST-Elevation Myocardial Infarction mortality was 27 patients (4.6%) and Non-ST Elevation Myocardial Infarction mortality was 14 patients (2.3%). Compare with gender, mortality was higher in men than women (34 vs 7 patients; 5.7% vs 1.2%).

Conclusion: ST elevation acute coronary syndromes carry a high risk of death in hospitalization period. Hospital mortality patient with ACS was higher in men than women.

Keywords: In-hospital mortality, Acute Coronary Syndrome, Gender.

MP1.7. Resting Heart Rate in Stable Coronary Artery Disease Patients: A Preliminary Study

Silvi Irawati, MY Finnike

Centre for Medicines Information and Pharmaceutical Care (CMIPC),
Surabaya, Indonesia

Abstract

Background: Serum fibrinogen level (SFL) is thought to be one of the risk factors for coronary artery disease (CAD). The purpose of this study was to measure the SFL in patients with acute coronary syndrome (ACS).

Methods: Consecutive sampling was performed in 56 patients with ACS, admitted in Haji Adam Malik General Hospital, Medan, from Desember 2014 to January 2015. These patients were divided into 3 groups: ST elevated myocardial infarction (STEMI), non-ST elevated myocardial infarction (NSTEMI), and Unstable Angina Pectoris (UAP). Twenty-four hours after admission, the SFL was measured using Clauss methods. The data were collected and analyzed.

Results: The mean SFL per mg/dl in 37 STEMI patients are 426.11, in 8 NSTEMI patients are 464.5, and 11 UAP patients are 334.09. Although the SFL in NSTEMI patients was higher than the other patients but it's not significantly different among 3 groups of ACS ($p=0.274$).

Conclusion: The results show that SFL wasn't significantly different among 3 groups of ACS patients.

Keywords: fibrinogen, acute coronary syndrome

MP1.8. Trends Changing Overtime of Heart Failure Patients in Indonesia

Bambang Budi Siswanto², Oryza Gryagus Prabu¹,

Eka Adip Pradipta¹, Gusti Rizky Teguh Ryanto¹, Bayushi Eka Putra¹,
Edwin Chandra¹, Christian Rendy Chandra¹

¹ Medical Research Unit, Faculty of Medicine Universitas Indonesia

² Department of Cardiology and Vascular Medicine,
Faculty of Medicine, University of Indonesia,

National Cardiovascular Center Harapan Kita, Indonesia

Abstract

Purpose: In this present study, we determined the trends changing overtime according to the characteristics of heart failure patients in Indonesia.

Methods: We retrieved all the heart failure (HF) patients' data in heart failure registry National Cardiovascular Center Harapan Kita, Jakarta, Indonesia. From which, we examined retrospectively and compared the characteristics of HF patients in 2012 ($n=1264$) and 2013 ($n=539$). The data were analyzed using bivariate methods such as chi square test and independent t-test.

Result: There was an increase in patients with rehospitalization of HF in 2012 (68%) than 2013 (89.3%); [$p<0.001$]. The length of stay was also increase from 6.32 days of hospitalization to 8.43 days of hospitalization ($p<0.001$). From patients' history, we found that history of percutaneous coronary intervention (16.4% vs 10%; $p<0.001$), history of chronic kidney disease (27.4% vs 18.8%; $p<0.001$), and history of myocardial infarction (61.8% vs 47.6%; $p<0.001$), hypertension (41.7% vs 34.1%; $p=0.003$), and diabetes mellitus (42.8% vs 34.9%; $p=0.002$) were found higher in 2012 than 2013. However, smoking habit (46.1% vs 53.4%; $p=0.005$) and decompensated HF (70.6% vs 78.5%; $p<0.001$) were higher in 2013. In addition, HF with new york heart association (NYHA) IV classification was found significantly increased from 2012 to 2013 (11.1% vs 79.1%; $p<0.001$). Meanwhile, no different of patients' mean age ($58.30 + 14.48$ vs $58.56 + 13.87$ years; $p=0.736$) and left ventricular ejection fraction (LVEF) [$38.20 + 18.92\%$ vs $38.56 + 18.98\%$; $p=0.763$] between those years.

Conclusion: Our study showed that there were some changing trends of heart failure patients' characteristics in Indonesia between 2012 and 2013.

Keywords: characteristics; heart failure; Indonesia; trends.

MP1.9. Medication Taking-related Problems in Stable Coronary Artery Disease from Patients' Perspective: A Qualitative Study

Silvi Irawati¹, B Presley¹, and FO Royani²

¹ Centre for Medicines Information and Pharmaceutical Care
(CMIPC), Surabaya, Indonesia

² Faculty of Pharmacy, Universitas Surabaya, Surabaya, Indonesia

Abstract

Background: Coronary artery disease continuously becomes the world leading cause of death and years life lost. Evidence-based secondary prevention medications has been recommended to reduce morbidity and mortality in stable coronary artery disease patients.

Objective: This study aimed to elicit medication taking-related problems in stable coronary artery disease patients in order to optimize reduction in global burden of coronary heart disease.

Methods: This was a qualitative, descriptive study. Study population was stable coronary artery disease patient admitted at least once during January – November 2014 to cardiology outpatient unit at "X" Private Hospital in Surabaya. Patients consented to participate were included. Data was collected by both audiotaped interview and medication observation. Transcripts of interview were analyzed using grounded theory approach by two coders.

Results: Seventeen patients participated in the study. Seven key themes about medication taking-related problems were identified

i.e. 1) effect of medication not optimal, 2) adverse drug reaction, 3) medication too costly, 4) lack of knowledge, 5) use of other medication without healthcare professionals knowledge, 6) off-label use of medication, and 7) non adherence to medication.

Conclusion: These findings demonstrate the needs for monitoring medication use in stable coronary artery disease patients and for further exploring factors related to patient's problems in taking medication.

Keywords: coronary artery disease, medication taking-related problems.

MP1.10. The Relationship between Platelet Indices and Severity Lesion in Acute Coronary Syndrome

Sheila, S Hendyanto, and Peter Kabo

*Department of Cardiology and Vascular Medicine,
Medical Faculty of Hasanuddin University,
Wahidin Sudirohusodo General Hospital, Makassar, Indonesia*

Abstract

Background: Platelets play a substantial role in atherothrombosis, development, and progression of cardiovascular disease leading to acute coronary syndrome (ACS) and death. Besides platelet adhesion and aggregation, one of the platelet process in ACS is platelet activation. The degree of platelet activation may be assessed by platelet indices such as platelet count, mean platelet volume (MPV), plateletcrit (PCT), and platelet distribution width (PDW).

Methods: Thirty-four consecutive patients with ACS whom underwent coronary angiography were included in this single-centre, cross-sectional, retrospective study. Blood samples were taken on admission. Coronary artery lesion severity was assessed using the Gensini score and calculated based on angiographic findings.

Results: Mean age was 53.09 ± 8.9 years, of whom 29 were male (85.3%). There was no significant difference between the two Gensini groups for platelet count, MPV, and PCT ($p=0.269$, $p=0.127$, $p=0.935$, respectively); but there was significant difference for PDW ($p=0.026$) also for hematocrit, triglycerida, and age ($p=0.022$, $p=0.004$, $p=0.003$, respectively). However, there was no significant correlation between Gensini scoring and triglycerida nor age in these patients. Correlation analysis with Gensini score shows a negative association and less significant for hematocrit (Pearson correlation, $r=-0.369$, $p=0.032$) than a positive association for PDW (Pearson correlation, $r=0.528$, $p=0.001$).

Conclusion: PDW shown relationship with the severity of the coronary artery lesions and a strong correlation with the Gensini score; unlike platelet count, MPV, and PCT were not related to the severity of lesions in ACS patients.

MP1.11. The Correlation Between Atherosclerotic Cardiovascular Disease Risk Score to the Ankle Brachial Index

Steven R Utomo¹, Benny M Setiadi¹, Bambang Budiono²,
Janry Pangemanan¹, A Lucia Panda¹

¹ *Department of Cardiology and Vascular Medicine Sam Ratulangi University, Manado, Indonesia*

² *Department of Cardiology and Vascular Medicine Awal Bros Hospital, Makassar, Indonesia*

Abstract

Background: Coronary artery disease and peripheral artery disease (PAD) share the same pathophysiologic mechanism; thus it can be

hypothesized that cardiovascular risk score can predict the existence of PAD. The aim of this study is to analyze correlation between Atherosclerotic Cardiovascular Disease (ASCVD) and EURO score to the Ankle Brachial Index (ABI).

Methods: This study include 65 patients with symptoms typical of angina and positive treadmill test. ABI was calculated in both side of extremities and the lowest value was used in this study. ASCVD score, EURO score and ASCVD score ratio (ratio between ASCVD score and the optimal ASCVD score based on age) were calculated. Statistical analyses were done to identify the relation between ASCVD risk score, EURO risk score and ASCVD score ratio to the ABI. Statistical analyses were done using SPSS 17.0. P value <0.05 was considered statistically significant.

Results: A total 65 patients were included. Majority was male (80%), with the mean age 57.54 ± 10.85 years old. The mean value of ABI, ASCVD risk score and EURO risk score were 1.02 ± 0.18 , 16.26 ± 13.07 and 6.46 ± 5.20 respectively. There are no significant correlations between ASCVD and EURO score to the ABI ($r=-0.46$, $p=0.357$ and $r=-0.97$, $p=0.221$). There is a significant correlation between ASCVD score ratio to the ABI ($r=0.237$, $p=0.028$).

Conclusion: There are no correlations between ASCVD and EURO risk score to the ABI. The only significant correlation was found between ASCVD score ratio to the ABI, although the correlation is weak.

MP1.12. Does Albuminuria Correlate with Silent Myocardial Ischemia and Delayed Heart Rate Recovery in Hypertensive Men without Diabetes Mellitus?

Johan Winata, Razak Abdul Azis, and Agnes Lucia Panda

*Department of Cardiology and Vascular Medicine,
Faculty of Medicine Sam Ratulangi University / Cardiovascular and
Brain Center Prof. dr. RD. Kandou General Hospital, Manado, Indonesia*

Background: Silent myocardial ischemia (SMI) and delayed heart rate recovery (HRR) are independent predictors for cardiovascular mortality. In diabetes, albuminuria has been proven to be an independent predictor for SMI and delayed HRR, however in hypertensive patients without diabetes the correlation is still unclear.

Objectives : This study is aimed to determine the correlation between albuminuria to SMI and delayed HRR.

Methods: This is a cross sectional observational study. Fourty consecutive hypertensive patients without diabetes, history of chest pain, and known CAD were included. They underwent treadmill stress testing (TST) with collection of spot urine before exercise to measure albumin urine to creatinine ratio (ACR). SMI and HRR to 3 minutes were then recorded. SMI was diagnosed if positive ischemic criteria of TST was met without anginal symptoms. Albuminuria and delayed HRR is diagnosed based on their established threshold respectively.

Results: SMI was diagnosed in 15% patients. The incidence of delayed HRR at the first, second, and third minute after peak exercise were 60%, 80%, and 52.5% respectively. Albuminuria was significantly associated with SMI (OR 13.889 (95% CI 1.423 – 135.544), p value = 0.014). From the ROC curve analysis (AUC = 0.78495 [95% CI 0.588-0.98], p value= 0.028), the calculated sensitivity, specificity, positive- and negative-predictive value of albuminuria to predict SMI were 83.3%, 73.5%, 35.7%, and 96.2% respectively. There were no signification correlation between albuminuria and delayed HRR.

Conclusion: Albuminuria is a good tools for excluding SMI in asymptomatic hypertensive patients without diabetes mellitus.

Keywords: silent myocardial ischemia, heart rate recovery, autonomic neuropathy, hypertension, albuminuria.

Background

Hypertension is an important risk factor for coronary artery disease (CAD).^{1,2} The obstruction of coronary artery will cause myocardial ischemia and leaving the patient on anginal pain. However, a number of patients do not feel any symptoms when ischemia occur, which is known as silent myocardial ischemia (SMI). SMI is common in diabetes melitus (DM) and hypertension population. Interestingly, the incidence of SMI in hypertensive patients is equal with the reported incidence in diabetes population, that up to 57% of hypertensive patients diagnosed with SMI.³

In DM population, autonomic neuropathy is known to be the primary cause of SMI, but its role in hypertension population is still unclear. The role of increasing pain threshold has been postulated, but the definite mechanism is still unclear.³ Previously, Ayad et. al. reported that hypertension is an independent risk factor for autonomic neuropathy in DM population. However, the study to further evaluate autonomic neuropathy in hypertensive patients without diabetes is very limited.⁵

The correlation between heart rate recovery (HRR) measured by treadmill exercise test and autonomic neuropathy was significant in DM population.⁶ A study by Yamada et. al. discovered that the delayed HRR was an independent predictor for SMI in patients with DM.⁷ Sacre et al established the threshold value for delayed HRR in type II DM population.⁶ In hypertensive patients, a study by Polonia et al proved the failure of parasympathetic reactivation after peak exercise in non-dipping hypertensive group, emphasizing the existence of autonomic dysfunction.⁸

Albuminuria has been extensively known as predictor of SMI and autonomic neuropathy in DM population. Beijers dkk also revealed the weak correlation between albuminuria and autonomic neuropathy in general population.¹⁰ However, the study in hypertensive patients is still limited.¹¹ Nevertheless, SMI and delayed HRR are proven as independent predictor of cardiovascular mortality, underlining the importance of early diagnosis.¹⁰ Albuminuria is potentially suggested as a predictor of SMI and delayed HRR in hypertensive patients without DM. This study is aimed to discover the correlation between albuminuria and SMI and delayed HRR, and to investigate the usefulness of albuminuria as predictor of SMI and delayed HRR.

Methods

Study Population

A total of 40 consecutive patients with hypertension, aged between 40-60 year-old age, were studied between September and December 20014. Patients were excluded if they had history of angina pectoris or angina equivalent, history of DM, abnormal ECG finding, beta blocker or digitalis therapy, and congestive heart failure.

Treadmil Stress Test Exercise stress test were done on a motorized treadmill (CASE T-2100, GE medical system) using standard Bruce protocol. Patients were encouraged to perform maximal exercise. Testing was terminated after reaching the target heart rate (based on age) or because of fatigue, dyspnea, leg discomfort, systolic blood pressure > 250 mmHg, ventricular tachycardia, or ischemic electrocardiographic changes. After peak workload was achieved, HRR was calculated as the decrease of the heart rate from its peak during exercise to that at first, second, and third minute after finishing the exercise. SMI was diagnosed from electrocardiographic changes during TST suggested ischemia without associated symptoms.¹³ Delayed HRR at first, second, and third minute afer peak exercise was determined using the threshold of < 28 beats, < 50 beats, and < 52 beats respectively.⁵

Albuminuria

Spot urine collection was collected before TST to measure albumin

urine to creatinine ratio (ACR) as albuminuria determinant. ACR was analysed using PEG enhanced imunoturbidimetric (Advia 1800). Positive albuminuria was diagnosed if ACR > 20 mg/g.¹²

Statistical Analysis

Baseline characteristics are presented as the mean + SD. SMI, delayed HRR, and albuminuria was classified as positive and negative. The differences between the clinical characteristics between groups of positive and negative SMI and delayed HRR were analysed using independent t-test for normal data and Mann-Whitney U test for abnormal data. The correlation between albuminuria and SMI, albuminuria and delayed HRR, and delayed HRR and SMI were analysed using chi-square test. ROC curve was then analysed for any significant correlation. Sensitivity and specificity were then calculated for significant result of ROC curve analysis. Analysis were performed with the SPSS software, and p value < 0.05 was considered statistically significant.

Results

This study found that the incidence of SMI was 15% using TST. The incidences of delayed HRR at first, second, and third minute were 60%, 80%, and 52.5% respectively. The incidence of albuminuria was 30% (table 1).

The statistical analysis for baseline characteristics (age, body mass index, waist circumference, systolic blood pressure, and diastolic blood pressure) between groups of positive and negative results for SMI (table 2) and delayed HRR at first, second, and third minute (table 3) demonstrated no significant difference between groups.

We found significant correlation between albuminuria and SMI (OR 13.889 (1.423 – 135.544), p = 0.014) (tabel 4). This study discovered that SMI was more prevalent in albuminuria positive group (83.3%) compared to group with normal albumin urine (16.6%) (table 4). The ROC curve demonstrated good performance of albuminuria to predict SMI (AUC = 0.784 [CI 95% = 58.8%-98.1%], p = 0.028). The calculated sensitivity, specificity, accuracy, negative predictive value (NPV), and positive predictive value (PPV) for albuminuria as predictor of SMI were 83.3%, 73.5%, 75%, 35.7%, and 96.2% respectively (table 5).

The correlations between albuminuria and delayed HRR at first, second, and third minute were not significant (p > 0.05) (table 6). The same findings were also showed for the correlation between delayed HRR at first, second, and third minutes with SMI (p > 0.05) (table 7). However, the greater proportion of delayed HRR at first, second, and third minute were greater in group with positive results for SMI (83.3% to 55.9% for delayed HRR at first minute, 100% to 76.5% for delayed HRR at second minute, and 66.7% to 50% for delayed HRR at third minute).

Discussion

Previous studies had shown the high incidence of SMI in hypertensive patients without diabetes, that was between 15-57%. Most of the studies using Holter monitoring as diagnostic tool of SMI.³ The diagnostic value of TST to diagnose SMI was outdated because of its lack sensitivity and specificity. But in developing country, TST is the only diagnostic tool extensively present.

In this study, we found the incidence of SMI was 15%. A study by Massie et al demonstrated the incidence of SMI using TST was 37%, however the false positive result was as high as 39%.¹⁴ On the other hand, Pringle et al found that the incidence of SMI using TST was 29%, but the false negative result reached 45.8%.¹⁵ However, Laukkanen et al stated that asymptomatic ST-segment depression in men aged 42-60 years, was a very strong predictor of sudden cardiac death in men with any conventional risk factor but no previously diagnosed CAD.¹⁵ In this study we used strict criteria for ST-segment depression as positive ischemic response to withhold the prognostic value of TST.

Delayed HRR has also been associated with the increasing cardiovascular mortality, even in general population.¹⁷⁻¹⁹ There has been no previous study discovered the incidence of delayed HRR in hypertensive population without diabetes. In this study, we used the definition of delayed HRR according to previous study by Sacre et. al. which was the only study determining the cut off value of HRR based on autonomic neuropathy examination. The result of the study found different sensitivity and specificity between the cut-off value of HRR at first, second, and third minute; which were 93% and 69%, 96% and 63%, and 70% and 84% respectively.⁶

Our study showed the incidents of delayed HRR at first, second and third minute were 60%, 80%, and 52,5% respectively. This high number of delayed HRR incident is very interesting, as the same finding also shown in diabetic population. The importance of delayed HRR as an independent predictor of cardiovascular mortality potentially offers a diagnostic and therapeutic insight for hypertensive patients.

Hypertension is also associated with albuminuria as the early sign for renal dysfunction. The previous report from NHANES III demonstrated the incidence of albuminuria in hypertensive patient was 16%.²⁰ Marin et al found a higher incident in Spain, that was 39.4%.²¹ Just as SMI and delayed HRR, albuminuria has also been associated to cardiovascular mortality.¹⁰

The incident of albuminuria in our study was 30%. In hypertensive population, albuminuria has not been a routine screening procedure, although many studies had stated that the optimal blood pressure lowering will improve the degree of albuminuria.²¹ Albuminuria measurement with ACR, using spot urine sample, is also potential as a simple method of albuminuria screening.¹²

The correlation between SMI and albuminuria has been proven in diabetic population, though studies in hypertensive patients without diabetes are limited. Bianchi S et. al. demonstrated a significant higher incidence of SMI in hypertensive subjects with albuminuria. Seven subjects of 42 subjects with albuminuria diagnosed with SMI, compared to only 1 subject of 42 subjects with normal albumin urine.¹¹ Our study showed that there was a significant correlation between albuminuria and SMI (OR 13.889 (1.423 – 135.544), $p = 0.014$). It did mean that hypertensive patient with albuminuria was 13.889 times more prone to have SMI compared to others with normal albumin urine. The ROC curve analysis showed good performance of albuminuria to predict SMI (AUC = 0,784 [95% CI 0.588-0.98], $p = 0.028$). The sensitivity and specificity were 83.3% and 73.5% respectively. We can not evaluate further for these values since there has not been comparable SMI predictor. The values of PPV and NPV were 35.7%, and 96.2% respectively. This result offered a potential use of albuminuria as a screening to exclude SMI in asymptomatic hypertensive patients without DM.

The correlation between albuminuria and HRR in hypertension population without diabetes has not been studied. Ayad et al discovered that in diabetes population, hypertension was an independent risk factor for autonomic neuropathy.⁵ The few subsequent studies then validated the strong correlation of delayed HRR to autonomic neuropathy.⁶ Beijers et al demonstrated a weak correlation between albuminuria and autonomic neuropathy in general population ($\beta = 0.16$ [95% CI 0.01-0.33]).¹⁰ However, no study had been done to investigate the correlation between autonomic neuropathy through HRR measurement with albuminuria.

Our study found no significant correlation between albuminuria and delayed HRR at first, second, and third minute. Eventhough albuminuria is not the predictor of delayed HRR, the importance of both should also considered respectively. Beijers et al showed that both albuminuria and autonomic neuropathy were independent predictors for cardiovascular mortality with relative risk (RR) 2.13 (1.09-4.17) dan 1.76 (1.05-2.94) respectively.¹⁰

A previous study by Yamada et al discovered that the delayed

HRR at first minute after peak exercise was a predictor for SMI in diabetes population.⁷ However, the association of both parameters in hypertensive patients is interesting to be investigated. In our study, we found a higher number of subjects with delayed HRR at first, second, and third minute diagnosed with SMI, those were 83.3% to 55.9%, 100% to 76.5%, and 66.7% to 50%, but the statistical analyses showed no significant correlation (table 7). The small sample size was thought to be responsible. Further studies with larger sample size is highly recommended.

Conclusion

The incidences of SMI, delayed HRR, and albuminuria were high in hypertensive population without diabetes. The prognostic values of those variables offer an important insight in clinical management for hypertensive patients. Albuminuria was found to be a good screening tool for excluding SMI. The routine screening of albuminuria should then be considered for middle-age hypertensive patients instead of the absence of diabetes.

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TABLES AND FIGURES

Table 1. Frequency of SMI, delayed HRR at first, second, and third minutes, and albuminuria

Variable	Incident
SMI	6 (15%)
Delayed HRR minute-1	24 (60%)
Delayed HRR minute-2	32 (80%)
Delayed HRR minute-3	21 (52.5%)
Albuminuria	12 (30%)

Table 2. Baseline characteristics between SMI positive and SMI negative groups

Variable	SMI Positive Mean ± SD	SMI Negative Mean ± SD	p
Age (years)	54.17 ± 4.87	53.50 ± 5.32	0.776
BMI (kg/m ²)	26.74 ± 2.63	27.09 ± 3.46	0.817
Waist circumference (cm)	92.33 ± 10.95	92.68 ± 8.83	0.933
Systolic Blood Pressure (mmHg)	141.67 ± 20.41	131.76 ± 18.50	0.241
Diastolic Blood Pressure (mmHg)	86.67 ± 8.16	87.92 ± 8.50	0.782

Table 3. Baseline characteristics between groups with delayed HRR at first, second, and third minute and groups with no delayed HRR at first, second, and third minute

Variable	HRR Minute-1		p ^{**}	HRR Minute-2		p ^{**}	HRR Minute-3		p ^{**}
	≤ 28 beats Mean ± SD	> 28 beats Mean ± SD		≤ 50 beats Mean ± SD	> 50 beats Mean ± SD		≤ 52 beats Mean ± SD	> 28 beats Mean ± SD	
Age (years)	53.63 ± 5.35	53.56 ± 5.14	0.971	54.41 ± 4.99	50.38 ± 5.04	0.068	54.00 ± 5.55	53.16 ± 4.90	0.613
BMI (kg/m ²)	27.76 ± 3.53	25.94 ± 2.72	0.091	27.37 ± 3.56	25.70 ± 1.67	0.065	27.43 ± 4.19	26.60 ± 2.00	0.422
Waist circumference (cm)	94.21 ± 9.46	90.25 ± 8.03	0.177	93.47 ± 9.53	89.25 ± 5.89	0.222	93.20 ± 10.43	91.84 ± 7.37	0.633
Systolic Blood Pressure (mmHg)	134.58 ± 19.10	131.25 ± 18.93	0.591	135.00 ± 19.34	126.25 ± 15.98	0.246	133.81 ± 18.02	132.63 ± 20.23	0.847
Diastolic Blood Pressure (mmHg)	86.67 ± 8.68	89.38 ± 7.72	0.255	88.13 ± 8.59	86.25 ± 7.44	0.654	87.14 ± 8.45	88.42 ± 8.34	0.611

Table 4. Correlation between albuminuria and SMI

	SMI Positive	SMI Negative	OR	P
Albuminuria Positive	5 (83.3%)	9 (26.5%)		
Albuminuria Negative	1 (16.7%)	25 (73.5%)	13.889	0.014

Table 5. Sensitivity, specificity, accuracy, PPV, and NPV of albuminuria to predict SMI

Marker	Sensitivity	Specificity	PPV	NPV
Albuminuria	83.3%	73.5%	35.7%	96.2%

Table 6. Correlation between albuminuria and delayed HRR at first, second, and third minute

	HRR Minute-1		p ^{**}	HRR Minute-2		p ^{**}	HRR Minute-3		p ^{**}
	≤ 28 beats Mean ± SD	> 28 beats Mean ± SD		≤ 50 beats Mean ± SD	> 50 beats Mean ± SD		≤ 28 beats Mean ± SD	> 28 beats Mean ± SD	
Albuminuria Positive	8 (33.3%)	6 (37.5%)	0.787	12 (37.5%)	2 (25%)	0.412	6 (28.6%)	15 (71.4%)	0.37
Albuminuria Negative	16 (66.7%)	10 (62.5%)		20 (62.5%)	6 (75%)		8 (42.1%)	11 (57.9%)	

Table 7. Correlation between delayed HRR at first, second, and third minute and SMI

HRR	SMI Positive		SMI Negative		p
	≤ 28 detak	> 28 detak	≤ 50 detak	> 50 detak	
HRR Minute-1	5 (83.3%)	1 (16.7%)	19 (55.9%)	15 (44.1%)	0.212
HRR Minute-2	6 (100%)	0 (0%)	26 (76.5%)	8 (23.5%)	0.236
HRR Minute-3	4 (66.7%)	2 (33.3%)	17 (50%)	17 (50%)	0.381

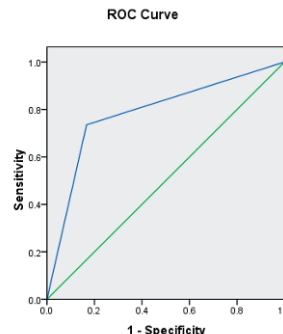


Figure 1. ROC curve albuminuria as predictor of SMI

MP2.1. Correlation between P-Selectin Level and Left Atrial Function in Rheumatic Mitral Stenosis

Prafitrhie Avialita Shanti, Yoga Yuniadi, Nur Haryono

National Cardiovascular Centre Harapan Kita, Jakarta, Indonesia

Abstract

Background: The prevalence of Mitral stenosis (MS) remains significant in developing countries related to prevalence of Rheumatic Heart Disease (RHD). In moderate-severe MS patients enormous increase in turbulent region and shear stress causing dysfunction of vascular endothelial, as consequence it increase the risk of thromboembolic complication. P-selectin is an adhesion molecule that play role in inflammation process, it express rapidly in minutes. Left Atrial Volume Index (LAVI) is superior parameter compare with other echocardiography two dimensions method to assess left atrial function. **Methods:** Study was designed as cross-sectional study involving 20 MS moderate-severe patients with MVA < 1.5 cm² who performed successful Percutaneous trans-venous Balloon Mitral Valvulotomy (PBMV). Samples were taken consecutively from May 2013 to October 2013 at the National Cardiovascular Center Harapan Kita Jakarta. Blood samples of P-selectin were collected pre and post PBMV. The result was statistically analyzed by using echocardiography data of LAVI prior PBMV to describe any association between expression of P-selectin and atrial function.

Result: In our study, we found no association between LAVI and expression of P-selectin level pre and post PBMV MS patient. This data describe in each of value of pre PBMV $\beta = -0.103$ (95% CI -0.251, 0.045) $p = 0.16$ and post PBMV $\beta = 0.009$ (95% CI -0.155, 0.172) $p = 0.91$ After we performed linier regression with adjusted confounding variable including sex, age, and atrial fibrillation, still we found no association between LAVI and P-selectin level. This data describe in each of value of pre PBMV $\beta = -0.154$ (95% CI -0.340, 0.032) $p = 0.09$ and post PBMV $\beta = -0.049$ (95% CI -0.250, 0.152) $p = 0.61$.

Conclusion: We found there is no difference in P-selectin level pre and post PBMV. There is no association between poor LAVI value and expression of P-selectin pre and post PBMV in MS.

Keywords: P-selectin, LAVI, mitral stenosis, rheumatic heart disease

MP2.2. Correlation of Carotid Intima Media Thickness and Left Ventricular Mass Index in Patients with Non-Diabetic Chronic Kidney Disease stage 3-4

Nupriyanto, Budi S Pikir, Pranawa

Department of Cardiology and Vascular Medicine, Soetomo General Hospital, Airlangga University, Surabaya, Indonesia

Abstract

Background: Chronic Kidney Disease (CKD) patients has an increased risk of cardiovascular death. Carotid Intimal Media thickness (CIMT) and Left Ventricular Mass Index (LVMI) are well-known risk factors for cardiovascular death in patients with CKD.

Methods: Cross-sectional study was done on 40 consecutive patients with non-diabetic CKD stage 3-4 visiting Outpatient Clinic of Nephrology, Soetomo General Hospital. CIMT was measured by B-mode ultrasonography of the distal third of the common carotid arteries. LVMI was determined by 2D-transsthoracic echocardiography.

Results: Study subjects were 55% males with eGFR 36.23 ± 12.06 ml/minute/1.73m². Proportion of stage 3 and 4 CKD was 65% and 35% respectively. Systolic Blood Pressure (SBP) was 139.07 ± 25.99 mmHg, CIMT 0.77 ± 0.14 mm and LVMI 98.15 ± 22.30 g/m². There was positive correlation between CIMT and LVMI in CKD stage 3 ($r=0.392$, $p=0.048$), but no correlation between CIMT and LVMI in CKD stage 4 ($r=0.117$, $p=0.69$) and stage 3-4 combined ($r=0.265$, $p=0.98$). Negative correlation between eGFR and CIMT ($r=-0.406$, $p=0.009$) and positive correlation between SBP and LVMI ($r=0.491$, $p=0.001$) were found in combined CKD stage 3-4.

Conclusion: CIMT was correlated with LVMI in Non-Diabetic Chronic Kidney Disease stage 3 but not in stage 4.

Keywords: Carotid Intima Media Thickness, CIMT, Left Ventricular Mass Index, LVMI, Chronic Kidney Disease.

MP2.3. Usefulness of ECG for Predicting Intensity and Complexity Coronary Artery Lesion in Acute Coronary Syndrome

Stefan Hendyanto, Sheila, and AA Mappahya

Department of Cardiology and Vascular Medicine, Faculty of Medicine Hasanuddin University, Wahidin Sudirohusodo General Hospital, Makassar, Indonesia

Abstract

Background: Electrocardiogram (ECG) parameter and scoring systems have been developed to estimate cardiac injury and infarct size; therefore besides used to diagnosed, ECG also expected to predicting the intensity and complexity of lesion in acute coronary syndrome (ACS) that would help physicians to make treatment strategies.

Methods: Thirty-four patients with ACS whom underwent coronary angiography were included. ECG performed on admission, then the Simplified Selvester Score (SSS) and the Cardiac Infarction Injury Score (CIIS) were calculated. Syntax and Gensini scores were calculated based on angiographic findings. Patients were divided into two complexity lesion groups according to their Syntax scores: low SYNTAX score (<22) and moderate to high SYNTAX score (≥ 22); also two intensity lesion groups according to the mean Gensini score of 56: less intensive CAD with Gensini score (<56) and intensive CAD with Gensini score ≥ 56 .

Results: There was significant difference between the two SYNTAX groups for ST depression ($p=0.002$), but not in Gensini groups. There was significant difference between the two SYNTAX and Gensini groups for fQRS ($p=0.016$, $p=0.016$, respectively), mean SSS ($p=0.044$, $p=0.002$, respectively), and mean CIIS ($p=0.001$, $p=0.002$, respectively). Correlation analysis showed a significant

and positive relationship between SYNTAX and Gensini groups with SSS (Spearman's rho, $r=0.500$, $p=0.003$, $r=0.565$, $p=0.001$, respectively) and CIIS (Spearman's rho, $r=0.580$, $p=0.000$, $r=0.558$, $p=0.001$, respectively).

Conclusion: ST depression may predict the complexity lesions but not the intensity; while fQRS, SSS, CIIS can predict complexity and intensity lesions in ACS patients. Both SSS and CIIS have significant and positive correlation to SYNTAX and Gensini scores.

MP2.4. Does Hypertension Slow the Heart?

Study from the Incidence and clinical characteristics of Total Atrioventricular Block (TAVB) in dr Moewardi General Hospital Surakarta on January 2013-January 2015

Pipiet Wulandari, AA Nursidiq, S Indriani, H Arifianto, R Myrta, T Nugraha, and N Purwaningtyas

Departement of Cardiology and Vascular Medicine, Universitas Sebelas Maret, Dr Moewardi Hospital, Surakarta, Indonesia

Abstract

Background: Hypertension and Acute Myocardial Infarction (AMI) are the most common causes of the conduction disturbance. Hypertension may lead to left ventricular hypertrophy, fibrosis and degeneration of the conduction system. Total Atrioventricular block (TAVB) develops in more than 5% of patients with myocardial infarction.

Methods: we study the incidence of TAVB and describe its clinical characteristics. Patients that diagnosed with TAVB at admission or developed TAVB during hospitalization are undertaken retrospectively between January 2013 and January 2015 in dr Moewardi General Hospital Surakarta.

Results: 54 patients with TAVB were reported, of whom 34 patients (63 %) due to non Acute Coronary Syndrome (non ACS). TAVB patients due to non ACS had higher systolic blood pressure at admission than those to ACS ($151.8 + 4.52$, $p<0.001$), lower blood glucose at admission ($154.56 + 9.81$, $p<0.001$) and lower heart rate ($37.9 + 1.59$, $p<0.001$). Among patients with non ACS, 17 (50%) female patients with TAVB were younger than male at time of admission ($57.41 + 3.53$, $p<0.009$) but there were no differences in systolic blood pressure and blood glucose at admission. Relative Wall Thickness (RWT) greater than 0.45 is diagnostic of pressure overload hypertrophy. Study of RWT in non ACS TAVB patients showed that 77,8% have RWT greater than 0.45.

Conclusion: Incidence of TAVB occurred greater in non ACS patient and associated with higher systolic blood pressure at admission. Higher incidence of non ACS patient with RWT over than 0.45 need further investigation.

MP2.5. Arrhythmia in Army

Mega Febrianora¹, C Achmad²

¹ *Faculty of Medicine Padjadjaran University, Bandung, Indonesia*

² *Department of Cardiology and Vascular Medicine, Hasan Sadikin General Hospital, Bandung, Indonesia*

Abstract

Background: The incidence of cardiovascular disease (CVD) is the leading cause of death worldwide now. The aim of this study is to determine the prevalence and clear analysis of arrhythmia in the army.

Methods: This is a cross-sectional study among 275 male subjects

from a military population in Garut, West Java, Indonesia. Each eligible participant was evaluated in the Guntur Military Hospital, Garut. Information regarding arterial blood pressure, weight, height, body mass index (BMI), and electrocardiogram were measured by standard methods.

Result: In 275 participants, male, aged 24, and attending military academy, the findings were as followed: the average height 169.0 cm (SD 3.3), average weight 65.4 kg (SD 6.9), average BMI 22.9 kg/m² (SD 2.2), and classified 42 people (15.3%) as overweight, 10 people (3.6%) as hypertension. 146 people (53.1%) had abnormal electrocardiogram, 36 people (13.1%) had conduction block, 108 people (39.3%) had rhythm problem, 19 people (6.9%) had myocardial infarction, 21 people (7.6%) had hypertrophy. From 108 people with rhythm problem, 51 people (18.5%) had sinus arrhythmia, 32 people (11.6%) had sinus bradycardia, 20 people (7.3%) had premature ventricular contraction. It was found that no correlation between the result of electrocardiogram and blood pressure and BMI in army.

Conclusion: From the clinical data, we found that army population has a varied result of electrocardiogram. However, there was no correlation between electrocardiogram result with any of the patient's demographic data such as BMI and blood pressure.

Keyword: Electrocardiogram, Army Population, Arrhythmia

MP2.6. Diastolic Failure Trends in Sepsis; does it Predict Mortality? A Prospective Echocardiography Study

Habibie Arifianto, A Yasa', and Trisulo Wasyanto

*Department of Cardiology and Vascular Medicine,
Faculty of Medicine, University of Sebelas Maret,
Dr. Moewardi General Hospital, Solo, Indonesia*

Abstract

Background: Cardiovascular dysfunction is a central component of the multiple organ dysfunction syndrome, an often fatal sequel of severe sepsis and septic shock. In sepsis, cardiac dysfunction reflects

both intrinsic dysfunction and the adequacy of loading conditions, including both preload and afterload. Much less is known about LV diastolic dysfunction in severe sepsis and septic shock and its relation to mortality.

Methods: In this study we prospectively studied 71 patients diagnosed with sepsis admitted on Intensive Care Unit and High Care Unit in Dr. Moewardi General Hospital, Solo - Central Java, during April until July 2014. Patient was divided into three groups according to their sepsis severity. Diastolic dysfunction was assessed using transthoracic echocardiography study once after the patients was diagnosed with sepsis, with all caused hospital mortality as primary endpoint. Spearman Correlation analyses was used with $p < 0.05$ significant.

Results: Fifty nine patients (83.09%) had diastolic dysfunction on echocardiography examination. Total mortality was 18.3%. There was no correlation between degree of sepsis and diastolic dysfunction ($p: 0.333$ $R: 0.116$). Cox survival analysis also did not show any correlation between degree of diastolic dysfunction and all caused hospital mortality.

Conclusions: LV diastolic dysfunction is common in septic patients, but there was no correlation between degree of sepsis and diastolic dysfunction also all caused hospital mortality and degree of diastolic dysfunction. This findings shows that diastolic dysfunction does not predict mortality in sepsis patients.

Keywords: Sepsis, echocardiography, diastolic dysfunction, mortality.

MP2.7. T-Wave Inversion at Precordial Leads as Predictor of Spontaneous Reperfusion of Left Anterior Descendence Artery in Non-Thrombolytic Acute Myocardial Infarction

Muh. Husen Latief, Peter Kabo, Abd. Hakim Alkatiri

*Department of Cardiology and Vascular Medicine, Faculty of Medicine,
University of Hasanuddin, Makassar, Indonesia*

Inversion of the T waves (T-) in electrocardiographic leads with ST-segment elevation after myocardial infarction (STEMI) is considered as a sign of reperfusion. However, the significance of T(-) on pre-angiography as a predictor of reperfusion is unclear. The aim of this study was to assess whether T(-) at V2/V3 on pre-angiography electrocardiogram may predict spontaneous reperfusion of left anterior descendence (LAD) artery in patients with non-thrombolytic acute anterior STEMI. The medical records, electrocardiograms, and angiographic findings of 40 consecutive patients were reviewed. A total of 17 patients (42.5%) had positive T waves (T+), and 23 (57.5%) had T(-). Patency of the LAD artery (Thrombolysis In Myocardial Infarction [TIMI] flow grades 2 and 3) was seen in 95.5% of the patients in the T(-) group compared with only 4.5% in the T(+) group. There was significant correlation between negativity of T-wave and TIMI flow grade of LAD artery, the deeper the T-wave inversion the higher the TIMI flow grade ($p < 0.005$). In conclusion, T(-) in the leads V2/V3 pre-angiography electrocardiogram in patients with non-thrombolytic acute anterior STEMI was associated with higher prevalence of patency of the LAD artery (95.5%), and the deeper the T-wave inversion on electrocardiogram the higher TIMI flow grade of LAD artery.

MP2.8. Left Ventricular Myocardial Intrinsic Function in Mitral Stenosis: Evaluation of Pre and Post Balloon Mitral Valvulotomy (BMV)

Nisa Ike Rini Asnil, Amiliana M Soesanto, and Ario Soeryo Kuncoro

National Cardiovascular Centre Harapan Kita, Jakarta, Indonesia

Abstract

Background: Left ventricular myocardial intrinsic function in mitral stenosis is still not clearly understood. Myocardium itself may show insufficiency due to longstanding inflicted on the cardiac muscle by altered valvular function, or independently may occur consequent to intrinsic myocardial damage from the rheumatic process.

Speckle tracking derived strain measurement as one of important indices of myocardial intrinsic deformation may provide better explanation in describing left ventricular myocardial intrinsic function and left ventricular systolic function respectively.

Balloon mitral valvulotomy (BMV) as a treatment of choice in mitral stenosis, may result in very good improvement in appropriate candidates. Regardless of changes in loading condition, it may also contribute in improvement of myocardial intrinsic function.

In this study we tried to observe myocardial systolic function with intrinsic parameter by using speckle tracking derived strain - focusing on global longitudinal strain (GLS) - in mitral stenosis pre and post BMV.

Methods: This descriptive analytic study included 45 mitral stenosis patients who underwent BMV from 2009-2011. These patients were examined by routine echocardiography examination, one day pre BMV and maximally 5 days after BMV. Left ventricle 4 chamber speckle tracking derived strain were taken and calculated off line by GE Vivid 7 Echopac software. Exclusion criteria were : post BMV gradient more than 10 mmHg (consider as unsuccessful BMV) and

post BMV significant mitral regurgitation (consider as post BMV complication).

Results: Subjects age was averagely 39 years old (\pm 10.7), pre BMV : mean MVA 0.68 cm² (SD 0.57), mean MVG 14.02 mmHg (SD 5.06), mean EF 58.26% (SD 8.82) and mean GLS -11.81 (SD 3.50). Post BMV : mean MVA 1.4 cm² (p : 0.000), mean MVG 5.82 (p : 0.000), mean EF 61.28% (p 0.001) and GLS also significantly improved to 13.18 (p : 0.02).

Conclusions: Left ventricular myocardial intrinsic function improves after BMV procedure as showed by improvement of LV global longitudinal strain compared pre and post BMV. It may explain that BMV procedure contributes to improve regional myocardial deformation and systolic function accordingly.

MP2.9. Comparison of Early Clinical Outcome between Transcatheter Closure with Device and Surgical Closure of Large Patent Ductus Arteriosus with Pulmonary Hypertension: Two-Years Experience

Rony Mario Candrasatria¹, Radityo Prakoso², Poppy S. Roebiono², Indriwanto S², Yovie Kurniawati², Oktavia Lilyasari², Anna Ulfah Rahajoe², Ganesja M. Harimurti²

¹ Resident of Cardiology and Vascular Medicine Universitas Indonesia, National Cardiovascular Center Harapan Kita

² Division of Paediatric Cardiology and Congenital Heart Disease Department of Cardiology and Vascular Medicine Universitas Indonesia, National Cardiovascular Center Harapan Kita

Abstract

Background: Transcatheter closure has become an established alternative procedure as compared to surgical ligation for the patent ductus arteriosus (PDA). However in large PDA with pulmonary hypertension, only few comparative studies are available. This study aims to evaluate the efficacy and complications between those two procedures.

Methods: Retrospective study has been conducted from January 2013 until December 2014 in National Cardiovascular Center Harapan Kita with total of 39 patients. Twenty seven patients underwent transcatheter closure and 12 patients underwent surgical closure. The inclusion criteria were minimum PDA diameter of 5 mm with recorded pulmonary hypertension. Pulmonary hypertension (mPAP>25mmHg) was confirmed with hemodynamic evaluation by catheterization for the transcatheter approach group (Group-TC) and with estimated mPAP by echocardiography for the surgical group (Group-SC) using Chemla formula ($(0.61 \times \text{SPAP}) + 2 \text{mmHg}$). The immediate results and follow up until 3 months post discharge were observed clinically and by echocardiography.

Results: Median age was 10 (1-47)years for group TC and 2 years(2months-22years) ($p=0.01$). Duct size and mPAP were similar for two groups; 8.3 ± 2.0 (5.6-13)mm for Group TC and 8.8 ± 3.6 (5-15) mm for group SC ($p=0.59$); and 48.6 ± 12.3 (27-69)mmHg for Group TC and 42.7 ± 16.7 (26.4-81.30) for Group SC respectively ($p=0.29$). There were no cardiac death or device dislodge in both groups. No significant difference of acute procedure-related complications were observed in both groups (7.4% vs 33%, $p=0.06$). Initial residual PDA before discharge were similar in both groups, 41% in Group TC and 33% in Group SC ($p=0.73$). The survival freedom from persistent residual shunt up to 3 months, defined as residual shunt that can not resolve automatically, was 96.3% for Group-TC and 50% for Group-SC ($p=0.02$ by Log-rank test). Length of stay in hospital was statistically different, 3 days for Group TC and 4.5 (3-12) days for Group SC ($p<0.01$).

Conclusions: In comparison to the established surgical closure, transcatheter closure in large PDA with pulmonary hypertension was associated with less persistent residual shunt and shorter hospital stay with comparable complications.

Keywords: Large PDA, pulmonary hypertension, transcatheter closure, surgical closure.

MP3.1. Ganoderma lucidum Polysaccharides Peptide: A Promising Antioxidant for Atherosclerotic Vascular Disease

Indra Prasetya¹, Ria Ashriyah¹, Ira Setya Waty¹, Titin Andri Wihastuti², Muhammad Aris Widodo³, Teuku Heriansyah⁴, Djangan Sargowo¹

¹ Department of Cardiology and Vascular Medicine, Faculty of Medicine, Brawijaya University / Saiful Anwar Hospital, Malang, Indonesia

² Department of Nursery, Faculty of Medicine, Brawijaya University, Malang, Indonesia

³ Department of Pharmacology and Pharmacotherapy, Faculty of Medicine, Brawijaya University, Malang, Indonesia

⁴ Department of Cardiology and Vascular, Faculty of Medicine, Syiah Kuala University, Aceh, Indonesia

Abstract

Background: Oxidative stress plays a pivotal role in the pathogenesis of atherosclerosis. An important contributor to oxidative stress in atherosclerotic lesions is the formation of hydrogen peroxide (H₂O₂) from diverse sources in vascular cells. Therefore, an antioxidant agent is needed to prevent vascular wall damage. This study aimed to evaluate polysaccharide peptide (PsP) of Ganoderma lucidum as an antioxidant that inhibits the atherogenesis in atherosclerotic rats model.

Methods: The study was an experimental in vivo post-test with control group design. Twenty-five Wistar rats were divided into five groups (a normal diet group, a High Fat Diet (HFD) group, and HFD groups that received PsP doses of 50 mg/kgBW, 150 mg/kgBW, and 300 mg/kgBW). The parameters determined in this study were the level of H₂O₂, Malondialdehyde (MDA), perivascular adipocyte tissue (PVAT), and foam cells.

Results: After 5 weeks of treatment, there were significant result for the reduction of H₂O₂ ($p=0.003$), MDA ($p=0.01$), PVAT ($p=0.002$), and foam cells ($p=0.024$). The optimum dose of PsP is 300 mg/kgBW.

Conclusion: Based on this study, PsP is a promising novel antioxidant to inhibit the oxidative stress and prevent atherosclerotic process in atherosclerotic rats model. Further studies are needed to evaluate efficacy and safety of PsP as antioxidant in the prevention and treatment of Atherosclerotic Vascular Disease.

MP3.2. High Residual Platelet Reactivity to Clopidogrel in Elderly

Antonia Anna Lukito^{1,2}, MA Efendy², EK Asikin², H Lim^{1,2}

¹ Pelita Harapan University, Tangerang, Indonesia

² Siloam Hospital Lippo Village, Tangerang, Indonesia

Abstract

Background: Despite newer antiplatelet agents have now become available, clopidogrel is remain widely used due to the availability of generic tablet and its efficacy. However, high residual platelet reactivity (HRPR) due to individual poor response to clopidogrel has been associated with recurrence of ischemic events. Multiple factors such as ethnic, genetic, comorbidities and drug interactions

may affect the individual responsiveness to clopidogrel. It was reported elderly patients present an impaired response to clopidogrel with a high rate of HPR, yet the cut-off point of age is not clear. The study aimed to find the cut-off point of age as a predictor of HRPR to clopidogrel.

Methods: 441 subjects (321 male & 120 female) who were taking clopidogrel, included in this observational cross sectional study. HRPR to clopidogrel with cut-off point ≥ 230 PRU assessed by the VerifyNow assay, was found in 116 subjects (26.3%).

Results: The independent two-tailed t-test showed significant mean difference of clopidogrel responsiveness between younger age group (<70 years) and older age group (≥ 70 years) ($p=0.0004$), further regression logistic analysis showed significant association between HRPR and older age group (≥ 70 years) (OR= 2.11, 95%CI:1.30-3.41, $p=0.002$). Moreover, age of 65 years or older was the strongest age predictor for HRPR in male (OR:2.53, 95%CI:1.43-4.47, $p=0.001$), while in female, age was not a strong predictor for HRPR to clopidogrel.

Conclusion: Elderly was significantly associated with clopidogrel non-responsiveness. Sixty five years or older was the strongest cut-off point of age group for predicting HRPR to clopidogrel in male.

MP3.3. The Role of Polysaccharide Peptides (PsP) in Atherosclerosis Inhibition by Decreasing the number of Foam Cell in Aorta with High-Fat Diet

Djangan Sargowo

Department of Cardiology and Vascular Medicine,
Faculty of Medicine University of Brawijaya,
Dr Saiful Anwar General Hospital, Malang, Indonesia

Abstract

Background: The highest mortality rate in the world for cardiovascular complications is the formation of atherosclerotic plaque. In fact, Indonesia has the most stroke patients in Asia. Until now, there is no treatment for atherosclerotic plaque formation. The purpose of this study is to prove the effectivity of polysaccharide peptides, containing β -D-Glucan in inhibiting atherosclerosis, by examining the number of foam cell in endothelial layers.

Methods: This study used Randomized Posttest Only Controlled Group Design. Twenty five white mice (*Rattus Norvegicus*) were divided into 5 groups ($n=5$): negative control with normal diet, positive control with atherogenic diet, and 3 groups with atherogenic diet plus polysaccharide peptides of 50, 150, and 300 mg/kg body weight, respectively. Polysaccharide peptides was given orally for 36 days. The number of foam cell is quantitatively measured by histopathological examination using dot slide microscope OlyViA. The evaluation result is analyzed using One way ANOVA test ($p<0,05$).

Results: This study shows decreased number of foam cell formation in the aorta histology examination of mice group with high-fat diet and initial PSP dose of 150 mg/kg body weight. This decrease is directly proportional with 300 mg/kg body weight dose ($p= 0.001$)

Conclusion: Polysaccharide peptides can inhibit atherosclerosis by decreasing the number of foam cell formation in aorta.

Keywords: Polysaccharide peptides, atherosclerosis, foam cell, aorta.

MP3.4. Administration of Ganoderma Lucidum in The Target of Aorta by Evaluating The Effect of Chronic Toxicity

Gregorius Didik Wicaksono S1, Djangan Sargowo²,
Mohammad Aris Widodo³, Titin Andri Wihastuti⁴, Teuku Heriansyah⁵,

Santy Cintiana Dewi¹, Ike Dyah Ayu Pambayun¹, Samsul Bakhri¹,
Mochammad Ali Trihartanto¹, Novita Qurrota A'ini⁶, Daniwing Putri
Sahudi⁶, Sabrinadia Hanareta Hantoko⁶, Januardi Indra Jaya⁶,
Kemala Octariny⁶, Ahmadi Izzudin Ardhi⁶,
Gede Bagus Subha Jana Giri⁷, Tiantiana Budiarti⁸

¹ Specialist Program of Cardiology and Vascular Medicine,
Faculty of Medicine, Brawijaya University, Malang, Indonesia

² Department of Cardiology, Faculty of Medicine,
Brawijaya University, Malang, Indonesia

³ Department of Pharmacology, Faculty of Medicine,
Brawijaya University, Malang, Indonesia

⁴ Department of Biomedicine, Faculty of Medicine,
Brawijaya University, Malang, Indonesia

⁵ Department of Cardiology, Faculty of Medicine,
Syiah Kuala University, Aceh, Indonesia

⁶ Bachelor Programme, Faculty of Medicine,
Brawijaya University, Malang, Indonesia

Abstract

The aim of this research is to prove polysaccharide peptide (*Ganoderma Lucidum*) as an antioxidant and antiinflammation that effectively blocked the progressively of atherosclerosis that one of cardiovascular diseases which has connection with the occurrence of oxidative stress and inflammation process. In this second year is planned with testing the acute toxicity using bal/c rat with 5 variant dose and we observed it every day in 7 days. In this acute toxicity test also determined with lethal dose 50 in 24 hours. Sub chronic toxicity test using *Rattus Novergicus* Strain Wistar both male and female that divided into 5 dose groups in 3 month. The extract is administered orally (using sonde) with 1 cc per each rat. The assessed parameter in this research is the histopathology of the aorta.

Background: *Ganoderma lucidum* has been used as a traditional oriental medicine as a therapeutic treatment of cardiovascular diseases. It has been proved that in the study of development efforts of polysaccharide peptide as an antioxidant and anti-inflammatory, *Ganoderma lucidum* can significantly reduce levels of MDA, Hs-CRP, H₂O₂, total cholesterol and foam cells and also increasing the level of HDL in experimental animal of *novergicus* strain *Rattus winstar* that given a high-fat diet. Based on these results the further research is conducted on toxicity of acute and sub chronic polysaccharide peptide at aorta

Aim: To assess the safety profiles of polysaccharide peptide (*Ganoderma lucidum*) through testing the sub chronic toxicity in experimental animals in the aortic organ

Method: Sub chronic toxicity test of the *novergicus* *Rattus Wistar* strain, 6 rats / sex / groups have given pure solution (freeze dried) *Ganoderma lucidum* doses of 0, 300, 600, 1200 mg / kg peronde once daily for 90 days.

Results: Until the 90th day after the administration of pure extract of *Ganoderma lucidum* (freeze dried) in the dose of 300 mg / kg, 600 mg / kg and 1200 mg / kg in male and female rats, was observed no significant toxic symptoms. Administration of pure solution *Ganoderma Lucidum* (freeze dried) until dose of 1200 mg / kg did not affect the morphology of the aortic tissue. Similarly in the gross pathologic examination of the aortic organ up to dose of 1200 mg / kg body weight was not obtained any changes. This finding is supported by the results of histopathological examination of the aortic cells that did not show any changes in morphology and histopathology.

Conclusion: The pure extract of *Ganoderma Lucidum* up to dose of 1200mg / kg for 90 days in the aortic organ not giving any spectrum of significant toxicity effects. And obtained no changes in morphological in the both of the group, control or experimental group.

Keywords: Ganoderma lucidum, sub chronic toxicity tests, Aortic organ.

MP3.5. Effect Of Antioxidant And Anti Inflammation on Subchronic Toxicity Administration Of Ganoderma Lucidum Target Organ Kidney in Cardiovascular Diseases

Mochammad Ali Trihartanto¹, Djanggan Sargowo², Mohammad Aris Widodo³, Titin Andri Wihastuti⁴, Teuku Heriansyah⁵, Santy Cintiana Dewi¹, Ike Dyah Ayu Pambayun¹, Samsul Bakhri¹, Gregorius Didik Wicaksono S¹, Novita Qurrota A'ini⁶, Daniwing Putri Sahudi⁶, Sabrinadia Hanareta Hantoko⁶, Januardi Indra Jaya⁶, Kemala Octariny⁶, Ahmafi Izzudin Ardhi⁶

¹ *Spesialist Program of Cardiology and Vascular Medicine, Faculty of Medicine, Brawijaya University, Malang, Indonesia*

² *Department of Cardiology, Faculty of Medicine, Brawijaya University, Malang, Indonesia*

³ *Department of Pharmacology, Faculty of Medicine, Brawijaya University, Malang, Indonesia*

⁴ *Department of Biomedicine, Faculty of Medicine, Brawijaya University, Malang, Indonesia*

⁵ *Department of Cardiology, Faculty of Medicine, Syiah Kuala University, Aceh, Indonesia*

⁶ *Bachelor Programme, Faculty of Medicine, Brawijaya University, Malang, Indonesia*

Abstract

Background: Ganoderma lucidum was claimed to have a beneficial effect for health, and was developed as a comprehensive approach for cardiovascular diseases. Efforts to develop polysaccharide peptide (Ganoderma lucidum) as antioxidant and antiinflammation in previous studies had proved its ability to significantly reduce the level of MDA, hs-CRP, H₂O₂, total cholesterol, and foam cell and also increase the level of HDL in Rattus novergicus wistar strain rats which was given high fat diet. Furthermore, to develop its potential for comprehensive approach in cardiovascular disease, additional study has to be done to understand the toxicity effect of subchronic administration of polysaccharide peptide (Ganoderma lucidum).

Aim: To understand the safety profile of renal function in the use of polysaccharide peptide (Ganoderma lucidum) through subchronic toxicity test in animals.

Methods: Subchronic toxicity test in Rattus novergicus Wistar strain rats, with 6 rats/sex/group was given pure solution (freeze dried) of Ganoderma lucidum with the dose of 0, 300, 600, 1200 mg/kgBB using feeding tube once a day for 90 days.

Result: Until the 90th day after administration of pure extract of Ganoderma lucidum (freeze dried) with the dose of 300,600,1200 mg/kgBB in male and female rats, there was no toxic symptoms. The administration of pure solution of Ganoderma lucidum (freeze dried) up to the dose of 1200 mg/kgBB did not affect the target organ kidney. The gross pathology examination of the kidney cell showed no abnormality up to the dose of 1200 mg/kgBB. This finding was also supported by the result of histopathology examination of the kidney cell which showed no morfological and histopathology abnormality finding.

Conclusion: There was no toxicity effect to the target organ kidney in subchronic oral administration of polysaccharide peptide (Ganoderma lucidum) up to the dose of 1200 mg/kgBB/day.

Key words: Ganoderma lucidum, subchronic toxicity test, kidney.

MP3.6. A Study On Subchronic Ganoderma Lucidum Toxicity On The Liver As A Potential Antioxidant and Anti-Inflammatory Agent Against Cardiovascular Disease

Santy Cintiana Dewi¹, Djanggan Sargowo², Mohammad Aris Widodo³, Titin Andri Wihastuti⁴, Teuku Heriansyah⁵, Mochammad Ali Tri Hartanto¹, Ike Dyah Ayu Pambayun¹, Samsul Bakhri¹, Gregorius Didik Wicaksono S¹, Novita Qurrota A'ini⁶, Daniwing Putri Sahudi⁶, Sabrinadia Hanareta Hantoko⁶, Januardi Indra Jaya⁶, Kemala Octariny⁶, Ahmafi Izzudin Ardhi⁶

¹ *Cardiology Resident, Department of Cardiology and Vascular Medicine, Medical Faculty, Brawijaya University,*

Dr. Saiful Anwar General Hospital- Malang, Indonesia.

² *Research Leader, Lecturer at Department of Cardiology and Vascular Medicine, Medical Faculty, Brawijaya University,*

Dr. Saiful Anwar General Hospital- Malang, Indonesia.

³ *Lecturer at Department of Nursing, Medical Faculty, Brawijaya University- Malang, Indonesia.*

⁴ *Lecturer at Department of Parasitology, Medical Faculty, Brawijaya University, Malang, Indonesia.*

⁵ *Lecturer at Medical Faculty, Syiah Kuala University, Dr.Zainoel Abidin General Hospital- Aceh, Indonesia.*

⁶ *Medical Student, Medical Faculty, Brawijaya University- Malang, Indonesia.*

Abstract

Background: Gonoderma lucidum is claimed to have beneficial health effects, and is developing into a comprehensive form of treatment against cardiovascular disease. Previous studies have successfully proven Ganoderma lucidum polysaccharides peptide ability as an antioxidant and anti-inflammatory agent whereby reducing levels of MDA, hs-CRP, H₂O₂, total cholesterol, foam cells as well as increasing the levels of HDL in experimental testing using Wistar rat (Rattus norvegicus strain wistar) fed with a high-fat diet. In order to develop Gonaderma lucidum polysaccharides peptide as an integral and comprehensive form of treatment against cardiovascular disease, further research regarding the subchronic toxicity on the liver was performed.

Objective: To determine the safety profile of liver function in the use of Ganoderma lucidum polysaccharides peptide through subchronic toxicity studies on experimental animals.

Method: The study of subchronic Ganoderma lucidum toxicity was performed using Wistar rat (Rattus novergicus strain wistar). 6 rats/sex/group were given a pure, freeze dried solution of Ganoderma lucidum with dosage ranging from 0,300, 600, 1200mg/per kg body weight administered via gavage once a day for 90 days.

Result: 90 days after the administration of pure, freeze dried Ganoderma lucidum solution with dosages ranging from 300mg-1200mg/per kg body weight, there were no observable toxic symptoms in male and female rats. There was no adverse effect on liver function with the administration of the maximum dosage (1200mg/ per kg body weight). Gross pathology examinations of the rat's liver after the maximal dosage of Ganoderma lucidum extract proved to be unremarkable. These findings are supported by the results of clinical pathology and histopathology of liver cells which do not indicate a change in morphology and histopathology of the liver.

Conclusion: The result of this study shows that oral administration of Ganoderma lucidum polysaccharides peptide until the maximum dose of 1200mg/per kg body weight/day does not causetoxic effects in the liver.

Key words: Ganoderma lucidum, subchronic toxicity study, liver.

MP3.7. Hyperalctemia as Predictor Morbidity in Acute Myocardial Infarction

Ketut Erna Bagiari, Ketut Rina, and Ida Sri Iswari

*Department of Cardiology and Vascular Medicine, Faculty of Medicine
Universitas Udayana/ Sanglah General Hospital Denpasar, Bali*

Abstract

Objective: To assess whether lactate is an independent prognostic predictor morbidity patient with Acute Myocardial Infarction (AMI) in Sanglah Hospital, Denpasar.

Background: Lactate is a byproduct of anaerob metabolism and marker of tissue hypoperfusion. The prognostic role of lactate for morbidity in patients with AMI has not been elucidated so far. There is no previous study to determine the role of hyperlactatemia as predictor of morbidity in AMI patients in Indonesia.

Method: This is an observational cohort prospective study, which enrolled 70 AMI patients by consecutive sampling. We measured capillary lactate level three times, at first admission, 2h, and 24 h after admission, using rapid point-of-care analyzer Accutrend Lactate Meter. We observed for morbidities and the subsets (cardiogenic shock, heart failure, arrhythmia) during hospitalization.

Results: AMI patients with hyperlactatemia have an almost 3-fold (HR =2.578, 95% CI=1.278-5.199, p=0.008) increased risk of morbidity, a 15-fold increased risk of cardiogenic shock of (HR =15.231, 95% CI = 1.848-700.579, p = 0,0014) and a 5-fold increased risk of heart failure (HR = 5.269, 95% CI = 1.913-15.796, p = 0.0002) compared with subject without hyperlactatemia. On the other hand, hyperlactatemia was not associated as a predictor of arrhythmia (HR = 1.35, 95% CI = 0.344-4.627, p = 0,3051).

Conclusion: Hyperlactatemia is an independent predictor of morbidity, cardiogenic shock, and heart failure in AMI patients. On the other hand, hyperlactatemia is not an independent predictor of arrhythmia in AMI patients. This study should be confirmed by larger prospective studies.

Keyword: Acute myocardial infarction, hyperlactatemia.

MP3.8. Relationship between Hemoglobin A1C and High Sensitivity C-Reactive Protein with Microvascular Obstruction in ST Segment Elevation Acute Myocardial Infarction after Primary Percutaneous Coronary Intervention

**Puspita Sari Bustanul, Doni Firman, Anwar Santoso,
Amiliana M Soesanto**

*Department of Cardiology and Vascular Medicine, Faculty of Medicine,
Universitas Indonesia Jakarta, Indonesia*

Abstract

Background: Recent advances in reperfusion therapy for acute myocardial infarction led to a phenomenon of myocardial obstruction (MVO), which associated with worse outcome and prognosis. The underlying mechanism of MVO was not fully understood, but potential mechanism had four major pathogenic components: distal atherotrombotic embolization, reperfusion injury, ischemic injury, and individual susceptibility. Previous studies have found association between acute hyperglycemia and MVO in acute myocardial infarction, but the role of chronic hyperglycemia remained controversial. Hyperglycemia affected individual susceptibility and also induced systemic inflammation which had a role in reperfusion injury. Association of both these factors--chronic hyperglycemia, determined by Hemoglobin A1C, and inflammation factor, measured by high sensitivity C-Reactive Protein--with MVO had never been studied simultaneously. This cross-sectional study will determine the association between HbA1C and hsCRP with MVO assessed with index of microvascular resistance, an invasive novel method to assess MVO in acute phase and had significant prognostic factor.

Methods: 55 patients with acute ST-elevation myocardial infarction underwent primary percutaneous coronary intervention were taken consecutively from January to June 2014. HbA1C and hsCRP were taken before the procedure. HbA1C was measured by high performance liquid chromatography method and hsCRP was measured by immunoturbidimetric assay. IMR was taken immediately after the primary percutaneous coronary intervention procedure. Statistical calculation used SPSS 17.

Results: From 55 patients included in the study, there were 93% men, with mean age of 51.91 ± 8.87 years. The most common risk factors for coronary heart disease was smoking (69%). All patients underwent primary percutaneous coronary intervention with mean onset to balloon time was 489.45 ± 169.95 minutes and mean door to balloon time was 124.91 ± 76.49 minutes. Mean IMR was 53.22 ± 41.11 , with mean HbA1c was $6.46 \pm 1.22\%$ and mean hsCRP was 4.98 ± 3.39 mg/dL. From bivariate analysis, there was no association between HbA1C and IMR ($r=0,22$, $p=0,10$), and between hsCRP and IMR ($r=0,24$, $p=0,08$). After adjustment with confounder variables in multivariate analysis, there was significant relationship between HbA1C with IMR ($p=0,03$), but hsCRP were not associated with IMR ($p=0,31$).

Conclusions: HbA1C was associated with IMR and HbA1C was not associated with IMR in patients with ST elevation myocardial infarction underwent primary percutaneous coronary intervention.

Keywords: STEMI, PPCI, microvascular obstruction, IMR, HbA1C, hsCRP.

MP3.9. Effect of Atorvastatin on Inflammatory Response in Patients with ST Segment Elevation Myocardial Infarction Post Primary Percutaneous Intervention

**Muhammad Barri Fahmi, Doni Firman, Bambang Budi Siswanto,
and Amiliana M. Soesanto**

*Department of Cardiology and Vascular Medicine,
National Cardiovascular Centre Harapan Kita, Jakarta, Indonesia*

Abstract

Background: Myocardial necrosis triggers complement activation and neutrophil adhesion which is mediated by Intercellular Adhesion Molecule (ICAM). Results from ARMYDA-CAMS, showed that Atorvastatin continuous treatment reduced ICAM value in patients with stable angina pectoris. To date, there are no study yet which investigates the effect of acute Atorvastatin 80 mg treatment in patients with ST Segment Elevation Myocardial Infarction (STEMI) post Primary Percutaneous Coronary Intervention (PPCI).

Methods: This is a randomized, double-blinded, controlled trial. Evaluations were performed on 76 STEMI patients who underwent PPCI at National Cardiac Center Harapan Kita (NCCHK) from February 2014 to August 2014. Patients were randomly classified into two groups (Atorvastatin 80 mg and Placebo). Laboratory data on ICAM were taken twice (0-hour and 24-hour post PPCI) and examined at Prodia's Laboratorium. Statistical analyses using SPSS were performed to evaluate the effect of Atorvastatin treatment, which was measured by delta ICAM.

Results: There were no difference between two groups (Atorvastatin vs. Placebo) in terms of clinical, supporting data, and angiographic findings. Delta ICAM values showed significant difference between two groups, which are Atorvastatin 80 mg ($-13,0 \pm 38,5$ ng/mL) and Placebo ($26,1 \pm 67,0$ ng/mL, $p = 0,003$). Linear regression analysis (adjusted analysis; according to age, sex, diabetes, and renal insufficiency) showed coefficient of $-31,17$ ng/mL with $p = 0,037$.

Conclusion: This study showed that acute Atorvastatin 80 mg treatment pre-PPCI reduces endothelial inflammatory response

which was measured by ICAM.

Keywords: STEMI, PPCI, inflammation, Atorvastatin, ICAM.

MP4.1. Correlations of Elevated Admission Creatinine Serum and In-Hospital Mortality of Patients with Acute Coronary Syndrome in Haji Adam Malik Hospital

Yuri S Situmorang, Harris Hasan, Sutomo Kasiman,
A Siregar, Andika Sitepu, A Permana, Agustina, H Zulkarnain,
Novia, Hasinah, and E Siregar

*Department of Cardiology and Vascular Medicine,
Faculty of Medicine of Universitas Sumatera Utara,
Haji Adam Malik General Hospital, Medan, Indonesia*

Abstract

Background: Patient with impaired renal function is related with poorer clinical outcomes in the setting of Acute Coronary Syndrome (ACS). Poor renal function can be detected by serum creatine (Cr) level measurement. Serum Cr level has also been investigated in multiple epidemiological studies and clinical trials and had influence in-hospital adverse outcomes in ACS.

Aim: To find the relationship between Cr and in-hospital mortality in patients with ACS.

Methods: We studied 200 patients with ACS in Adam Malik hospital in 2014 retrospectively. Bivariate analysis using chi-squared was used to assess in-hospital death among normal and higher Cr group. Spearman analysis was used to assess the correlation between in-hospital death among to groups.

Results: Patients were classified into 2 groups based on Cr level, normal Cr group ≤ 1.2 mg/dl (n=136) and higher Cr group > 1.2 mg/dl (n=64). From all patients, 27 patients (13.5%) were dead during hospitalization. The mortality rate was found higher in higher Cr group (23.4%) than the normal Cr group (8.8%) (p=0.005). Spearman analysis showed that Cr serum level was significant correlated statistically with in-hospital death among to classified group (p=0.05, r=0.2).

Conclusion: In the setting of ACS, elevated Cr on presentation has significant correlation with in-hospital mortality.

Keyword: Acute Coronary Syndrome, Creatinine, Mortality.

MP4.2 Hemodynamic profile at presentation and the outcome among patients with anterior ST-segment elevation myocardial infarction

Nana M Suryana¹, Haikal¹, Isman Firdaus², Irmalita²,
Daniel PL Tobing², Dafsa A Juzar², Surya Dharma²,
Siska S Danny², and Dian Zamroni²

¹ Residents of National Cardiovascular Centre Harapan Kita,
Jakarta, Indonesia

² Cardiologist of National Cardiovascular Centre Harapan Kita,
Jakarta, Indonesia

Abstract

Objective: Although primary angioplasty has been shown to improve survival as compared with thrombolysis, the outcome is still unsatisfactory in subsets of patients such as those with signs of heart failure at presentation. The aim of this study was to determine hemodynamic profile at presentation and the outcome of among patients with anterior ST-segment elevation myocardial infarction (STEMI).

Methods: Descriptive analytical study consisting of 217 patients

with anterior STEMI between September 17, 2014 and February 13, 2015 who were included in the Registry of Acute and Intensive Cardiovascular OutCOME (RAICOM) database. Four hemodynamic profiles, stratified by degree of congestion (“dry” or “wet”) and adequacy of perfusion (“warm” or “cold”) was determined at admission based on physical examination. Follow-up data and the outcome of in hospital mortality were collected during hospitalization.

Results: A number of 217 patients meeting our definition for anterior STEMI. Detailed data on hemodynamic profile at presentation were available in 213 patients (98,2%) who represent the population of this study. A hundred and nine subjects (50,2 %) included in the dry and warm, 99 subjects (45,6%) were wet and warm, 5 subjects (2,3 %) included in the wet and cool group, and no patients included in cold and dry group. In hospital mortality in dry and warm group was 0 vs. 109 patients (0% vs.100%), wet and warm group was 13 vs. 86 patients (13% vs. 86%), and wet and cold group was 3 vs. 2 patients (60% vs. 40%)

Conclusion: Our study shows that patients with heart failure complicating ST-segment elevation myocardial infarction have the poor outcome. Hemodynamic profile of “wet and cold” at admission had the highest in hospital mortality rate. Conversely, there was no mortality in dry and warm group.

MP4.3. Correlation of Osmolality and In Hospital Major Adverse Cardiovascular Events in Patients with Acute Coronary Syndrome

Sanny March Novalin Silaban, Joy Wulansari Purba, Syaifullah,
Hasina, Haris Hasan, Hilafan Ade Putra Lubis, Zulfikri Muchtar,
Abdullah Afif Siregar

*Departemen of Cardiology and Vascular Medicine, Medical Faculty,
University of Sumatera Utara, Haji Adam Malik General Hospital,
Medan, Indonesia*

Abstract

Background: Several study has suggested that elevated plasma glucose, blood urea nitrogen (BUN) were high predictors mortality and other major adverse cardiovascular events (MACE) in patients with acute coronary syndrome (ACS). As osmolality is consist of these measurement with potassium, we assumed that osmolality has a strong impact to in-hospital MACE. We intended to examine the correlation between osmolality and MACE, since in our knowledge this has not been investigated so far.

Methods: In retrospective analysis we included 140 patients acute coronary syndrome. Plasma Osmolality was calculated using concentrations of sodium, plasma glucose and blood urea nitrogen at admission. Patients osmolality was divided as tertiles [T1 (<292.2 mOsmol/kg), T2 (292.3-299.4 mOsmol/kg), T3 (>299.4 mOsmol/kg)] and clinical outcome were compared between these group.

Result: An increasing osmolality level was significant associated with higher risk in hospital events (p=0,03). Patients with highest Tertile of osmolality (T3) had a significance higher MACE compare to the lowest Tertile (T1) [(5 VS 19) (p= 0.04)], with positive correlation (r=0,281, p = 0,001). Bivariate analysis also showed a significance higher in-hospital mortality in highest tertile groups compare to lowest tertile group [(2 VS 10) p= 0,022].

Conclusions: Osmolality in Patients with acute myocardial infarction has a significance correlation with Major Adverse Cardiovascular Events (MACE). It was showed by the higher MACE rate in higher tertile group.

Keyword: Acute Myocardial Infarction, Osmolality, In-hospital Major Adverse Cardiovascular Events.

MP4.4. The Prognostic Value of Hyperglycemia on Admission in Patients with Acute Coronary Syndrome in Wahidin Sudirohusodo Hospital Makassar

Fawzia A. Daud, Zaenab Djafar, Idar Mappangara

Department of Cardiology and Vascular Medicine,
Hasanuddin University, Makassar

Abstract

Background: Admission hyperglycemia is associated with adverse cardiovascular events in diabetic and nondiabetic patient with acute coronary syndrome (ACS).

Objectives: To evaluate the predictive value of the hyperglycemia on admission for major adverse cardiac events (MACE) rate in patients with acute coronary syndromes.

Methods: This study included 83 patients admitted to the Wahidin Sudirohusodo hospital diagnosed with ACS. Group I comprised patients with stress hyperglycemia, defined as admission blood glucose concentration > 140 mg/dL for non-diabetic individuals and admission blood glucose concentration > 200 mg/dL for diabetic individuals. Group II was formed by patients with admission blood glucose concentration lower than those established. The association of hyperglycemia and in-hospital outcome was assessed. Patient survival and MACE rate was measured on 30 days after admission.

Results: Hyperglycemia on admission associated with in-hospital complications, age increase and female sex. On multivariate analysis, only female sex (OR = 2.04; 95% CI: 1.03 - 4.06; p = 0.002) and in-hospital complications (OR = 3.65; 95% CI: 1.62 - 8.19; p = 0.006) associated independently with admission hyperglycemia.

Conclusions: Hyperglycemia on admission is an independent predictive factor for in-hospital complications after ACS in diabetic and non-diabetic patients. The results highlight the need to assess admission blood glucose concentration in all patients admitted due to ACS, including non-diabetic ones, aiming at identifying those at higher risk for complications.

Keyword: Hyperglycemia on admission, Acute Coronary Syndrome, Major Adverse Cardiac Event

MP4.5. The Relationship between The Neutrophil-Lymphocyte Ratio and The Coronary Collateral Circulation in Patients with Stable Coronary Artery Disease

Uswa Malik, Muzakkir Amir

Department of Cardiology and Vascular Medicine,
Hasanuddin University, Makassar, Indonesia

Abstract

Introduction: Neutrophil-Lymphocyte ratio (NLR), as a cardiovascular risk marker, is an important, simple and inexpensive method. Neutrophil-Lymphocyte ratio (NLR) value has been proposed as a risk factor for coronary artery disease (CAD). Previous studies showed the association between the major adverse cardiovascular outcomes and higher neutrophil-lymphocyte Ratio. We aimed to investigate whether there is an association between the neutrophil-lymphocyte ratio (NLR) value and the development of coronary collateral circulation (CCC) in patients with stable coronary artery disease.

Methods: Cross sectional study, A total of 65 patients with Stable coronary artery disease who underwent coronary angiography included in this study. Patients then classified according to their Rentrop collateral grades as either poor collateral (Rentrop grades 0-1) or good collateral (Rentrop grades 2-3). Clinical information and analyses of blood samples were obtained from a review of

the patients' charts.

Results: The NLR values were significantly higher in the patients with poorly developed Coronary collateral circulation compare with good coronary collateral circulation ($3,2 \pm 0,3$ vs $1,9 \pm 0,2$, p:0.000). NLR, high-sensitivity C-reactive protein (hs-CRP), white blood cell count (WBC), diabetes, fasting glucose levels and body mass index were found to have univariate association with poorly developed Coronary collateral (p<0.01). In a multivariate logistic regression model, NLR was found to be the independent predictors of poor CCC.

Conclusion: An elevated of NLR is independently associated with a significant impairment in coronary collateral. Patient with poorly developed coronary collateral tend to have higher NLR.

Keyword: Neutrophil-lymphocyte Ratio, Coronary artery disease, Coronary collateral circulation.

MP4.6. Association Platelet Distribution Width and Inhospital MACE in Patients with Acute Coronary Syndrome in Haji Adam Malik General Hospital

Zulfahmi, Blessdova Hutabarat, Indah Ayu Pratiwi, Harris Hasan, Andika Sitepu, Abdul Halim Raynaldo, Teuku Bob Haykal, Zulfikri Mukhtar, Abdullah Afif Siregar

Department of Cardiology And Vascular Medicine University Sumatera Utara, Haji Adam Malik General Hospital, Medan, Indonesia

Abstract

Background: Recent studies have shown that Platelet Distribution Width (PDW) value increased in Acute Myocardial Infarction. Information about association of PDW with in-hospital major adverse cardiac event (MACE) is still not clear.

Method: This is a cross sectional study method conducted on October to December 2014. This research recruits all the patients with Acute Coronary syndrome in Emergency Department Haji Adam Malik General hospital, Medan.

Results: We found 61 patients with ACS from October until December 2014. PDW value wasn't significantly different in inhospital death (mean $10,4 \pm 1,2$ vs $11,6 \pm 1,6$; p=0.098), inhospital arrhythmia ($11,7 \pm 1,6$ vs $11,4 \pm 1,6$; p=0.564), and inhospital cardiogenic shock ($12,1 \pm 2,0$ vs $11,4 \pm 1,6$; p=0.508). We didn't find incidence of stroke in this study.

Conclusion: Our result show that PDW doesn't have significant relationship with inhospital MACE in acute coronary syndrome patients in Haji Adam Malik General hospital, Medan.

Keywords: PDW, Acute Coronary Syndrome.

MP4.7. Outcome Among Patients with Shock Cardiogenic in Acute Coronary Syndrome with and without PCI

Martua Silalahi¹, Irmalita², Daniel Tobing², Surya Dharma², Dafsa A Juzar², Isman Firdaus², Siska Suridanda²

¹ Resident of National Cardiovascular Centre Harapan Kita, Jakarta, Indonesia

² Cardiologist of National Cardiovascular Centre Harapan Kita, Jakarta, Indonesia

Abstract

Background: Cardiogenic shock is the most common cause of death in patients hospitalized with Acute Coronary Syndrome and is associated with a poor prognosis. To improve outcomes, cardiogenic shock needs to be recognized early in its course and its cause needs

to be diagnosed rapidly. Treatment strategies using emergency revascularization by percutaneous coronary interventions have been shown to improve outcomes.

Objective: Knowing outcome among patients with cardiogenic shock in acute coronary syndrome with and without PCI

Method: We studied all patients data diagnosed with cardiogenic shock in acute coronary syndrome with and without PCI, enrolled from RAICOM registry at ICVCU NCCHK during 2014.

Result: There was 38 patient with cardiogenic shock in acute coronary syndrome. Of these, 25 patients was undergone PCI and 14 patients without PCI. We compare outcome patient with cardiogenic shock in Acute Coronary Syndrome with and without PCI. There was no significant reduction in total mortality with PCI compared without PCI. (31% vs 23% , $p=0.391$).

Conclusion: Emergency revascularization by percutaneous intervention does not improve outcome in patient with Cardiogenic Shock in Acute Coronary Syndrome. Further research with large sample size may be needed to validate this result.

MP4.8. The Impact of Sooner Door to Balloon Time of Primary Percutaneous Intervention (PCI) in ST Elevation Myocardial Infarction (STEMI) Patients with Length of Stay at National Cardiovascular Centre Harapan Kita, Jakarta

Yusak Alfrets P, Zul Effendi, Dafsah A. Juzar, Isman Firdaus, Irmalita, Siska S. Danny, Surya Dharma, and Daniel P.L Tobing

*Department of Cardiology and Vascular Medicine,
Faculty of Medicine, University Indonesia,
National Cardiovascular Centre Harapan Kita, Jakarta, Indonesia*

Abstract

Introduction: The total cost spent by STEMI patients who got Primary PCI is less than they who got fibrinolytic agents. Guidelines and hospital quality-of-care programs recommend that ST-elevation myocardial infarction patients achieve a door-to-balloon time of ≤ 90 minutes. However, there are limited prospective data on specific measures to significantly reduce door-to-balloon time.

Methods: We retrospectively analyzed data from Registry of Acute and Intensive Cardiology outCOME (RAICCOM) from Intensive Cardiovascular Care Unit (ICVCU) of National Cardiovascular Centre Harapan Kita, Jakarta from September 2014 to February 2015. Patients 18 years or older and initially presented to emergency room were included. Patients were excluded for incomplete data. The outcome measure was LOS ICVCU <2 days, ward <3 days, and total <6 days. Door to balloon time and possible factors including sex, age, hypertension (HT), diabetes mellitus (DM), body mass index were categorized and analyzed using chi square bivariate and multivariate logistic regression.

Results: 198 out of 209 hospitalized patients were included in analysis. Bivariate analysis showed that sex, age >60 years, hypertension, and overweight didn't significantly affect LOS of STEMI patients, while DM makes STEMI patients stays longer in ICVCU (OR=2.023 $p=0.044$). Patients with door to balloon time >120 minutes makes their hospitalization in ICVCU >2 days higher (OR=3.201 $p=0.002$ CI=1.1230-1.3585), in wards >3 days higher (OR=2.095 $p=0.038$ CI=1.1283-1.3717), and total hospitalization >6 days higher (OR=2.150 $p=0.33$ CI=1.1232-1.4006)

Conclusion: STEMI patients with Primary PCI Door to Balloon Time >120 minutes was found make their LOS in ICVCU >2 days 3.201 times higher, in wards >3 days 2.095 times higher, and total hospitalization >6 days 2.150 times higher.

Keywords: Primary PCI; STEMI; Door to Balloon; Length of Stay.

MP4.9. Effect of Anemia With Clinical Outcomes in Acute Coronary Syndromes

Syaifulhah, Sanny March Novalin Silaban, Arfian Amin Nasution, Harris Hasan, Andika Sitepu, Abdul Halim Raynaldo, Zulfikri Muchtar, Abdullah Afif Siregar

*Department of Cardiology and Vascular Medicine,
Faculty of Medicine of Universitas Sumatera Utara,
Haji Adam Malik General Hospital, Medan, Indonesia*

Abstract

Background: Several study has suggested that anemia has the potential to worsen myocardial ischemia in the setting of an acute coronary syndrome (ACS). We intended to examine the association between anemia with inhospital mortality and other Major Adverse Cardiac Events (MACE) in patient with ACS.

Methods: In retrospective analys we include 202 patients acute coronary syndrome. Patients were allocated into 2 groups according to their baseline hemoglobin : anemia and normal. According to the World Health Organization, anemia was defined as serum hemoglobin level <13 g/dl for men and <12 g/dl for women. Outcome measurements were inhospital mortality and other MACE.

Results: Anemia was present in 50 (24,8%) patients. The mortality rates were greater among the patient with anemia ($p=0,01$). In addition, patients with anemia had significant higher MACE compare to normal patients ($p=0,001$).

Conclusion: Anemia can be used as predictor of major adverse cardiovascular events in patients across the spectrum of ACS.

Key words: Anemia, coronary disease, hemoglobin, myocardial infarction, risk factors.

MP4.10. Association of Blood Glucose and Fibrin Clot Strength Measured by Thromboelastography in Patients Undergoing Elective Coronary Angiography

Joy Wulansari Purba, Arfian Amin Nasution, Sanny March Novalin Silaban, Agustina Sianturi, Parlindungan Manik, Isfanuddin Nyak Kaoy, Zulfikri Mukhtar, and Abdullah Afif Siregar .

*Department of Cardiology and Vascular Medicine,
Medical Faculty, University of Sumatera Utara,
Haji Adam Malik General Hospital, Medan, Indonesia*

Abstract

Background: Thromboelastography (TEG) is a bedside blood test used to assess haemostatic status and to predict thrombotic events post-operatively and after PCI. Fibrin clot strength that mentioned by TEG-G indicates the strength of the clot, reflects the activity of fibrin and platelets and become a novel risk factor for ischemic event post stenting. Hyperglycemia, both chronic and acute, have prothrombotic effect including elevation of coagulation and impairment of fibrinolysis. We intended to examine the relationship of blood glucose and fibrin clot strength in patients undergoing elective coronary angiography.

Methods: This was cross-sectional study in a total of 42 patients with stable angina undergoing elective coronary angiography. Blood glucose and fibrin clot strength were measured in the morning before procedure. Clot strength, a test of thrombin-induced fibrin and platelet interactions were measured by thromboelastography. Blood glucose was divided into quartiles and fibrin clot strength shown in mean \pm SD.

Results: In the analysis of variance, increasing quartiles of blood glucose were associated with increasing level of fibrin clot strength ($p = 0.01$). From post hoc analysis, patients in the highest quartile of

blood glucose had significantly higher than the patients in the lowest quartile (12.7 ± 1.5 vs 8.8 ± 0.5 dyne/cm², $p = 0.004$)

Conclusions: Elevated blood glucose exhibit heightened fibrin clot strength in patients with coronary artery disease undergoing elective coronary angiography. Thrombotic risk associated with elevated blood glucose may be linked to procoagulant changes and high fibrin clot strength.

Keyword: Fibrin clot strength, blood glucose, thromboelastography, coronary angiography.

MP4.11. Platelet to Lymphocyte Ratio as a Predictor of In-hospital Mortality in Patients with Acute Coronary Syndrome in Haji Adam Malik General Hospital Medan

Elvrida Diatami, Indah Ayu Pratiwi, Blessdova Hutabarat, Harris Hasan, Andika Sitepu, Teuku Bob Haykal, Abdul Halim Raynaldo, and Abdullah Afif Siregar.

Department of Cardiology and Vascular Medicine, Medical Faculty, University of Sumatera Utara, Haji Adam Malik General Hospital, Medan, Indonesia

Abstract

Background: Atherosclerotic CAD is still the most common cause of mortality and morbidity in both developing and developed countries, despite advances in the diagnosis and treatment. Platelet-to-lymphocyte ratio (PLR) is a new prognostic marker in coronary artery disease which never been tested among population in our hospital.

Methods: We prospectively collected 117 patients with acute coronary syndrome. The study population were divided into 2 groups based on their admission PLR. Patients was defined as the high PLR group ($n=46$) if $PLR \leq 144$ and low PLR group ($n=71$) if $PLR > 144$. Association between PLR groups and in-hospital mortality was analyzed using chi square test with statistical significance was defined as $p < 0.05$

Results: In total 117 patients with mean age of 54.04 ± 9.1 years (79.5% male) were enrolled in this study. In-hospital mortality was significantly higher among patients with high PLR compared with low PLR groups [6 (13.04%) vs 2 (2.82%); $p=0.032$]. On multiple logistic regression analysis, a high PLR level was independent predictor of in-hospital mortality [OR: 6.269; 95%CI: 1.137-34.573 ($p=0.035$)].

Conclusion: PLR is an easy and inexpensive available biomarker that may useful for predicting in-hospital mortality in patients with ACS.

Keywords: platelet; lymphocyte; acute coronary syndrome.

MP4.12. Red Cell Distribution Width Increases Risk of Cardiogenic Shock during Hospitalization in Patients with Acute Coronary Syndrome in Haji Adam Malik Hospital

EJH Sinaga, Hasinah, Novia, Agustina, Harris Hasan, Andika Sitepu, Zulfikri Mukhtar, and Abdullah Afif Siregar.

Department of Cardiology and Vascular Medicine, Faculty of Medicine, University of North Sumatera, Haji Adam Malik General Hospital, Medan, Indonesia

Abstract

Background: Red cell distribution width (RDW), a measure of the variability in size of circulating erythrocytes, has been reported to be a risk marker of morbidity and mortality for cardiovascular disease.

Higher value of RDW is associated with adverse outcome of patients with cardiovascular disease. In this study, we aimed to investigate association of RDW with cardiogenic shock in patients with Acute Coronary Syndrome (ACS) during hospitalization in Haji Adam Malik Hospital.

Method: We analyzed 213 patients with ACS admitted in Haji Adam Malik Hospital. Clinical, laboratory characteristics and cardiogenic shock (CS) were analyzed for each group. Patients were classified to presence and absence of CS. Value of RDW was divided into two groups according to 50th percentile ($\leq 13.4\%$ and $> 13.4\%$). Odds ratio was calculated using logistic regression.

Result: Cardiogenic Shock events in higher RDW group was significantly higher than in lower RDW group (71.4% vs 28.6%, $p: 0.009$). $RDW > 13.4\%$ was an independent predictor of CS (OR 3.9, 95% CI 1.33-11.54).

Conclusion: In a population of patients with ACS, RDW was associated with higher in-hospital cardiogenic shock and was an independent predictor of in-hospital cardiogenic shock.

Keyword: Acute coronary syndrome, cardiogenic shock, Red cell distribution width.

MP4.13. Shock Index as a Predictor for In-Hospital Mortality and MACE among Patients With Acute Coronary Syndrome in H Adam Malik General Hospital Medan

Hasinah, Novia, EJH Sinaga, Agustina, AA Permana, Harris Hasan, Andika Sitepu, Zulfikri Mukhtar, Abdullah Afif Siregar

Department of Cardiology and Vascular Medicine, Faculty of Medicine, University of North Sumatera, H.Adam Malik General Hospital, Medan

Abstract

Background: Early identification of higher risk patients presenting with acute coronary syndrome (ACS) may help in reducing complications and in improving outcomes. Although numerous studies have demonstrated the validity of the risk scores such as TIMI and GRACE for risk stratification, the sophisticated calculation usually makes them inconvenient to operate at bedside in daily clinical practice. This study aimed to evaluate the usefulness of admission shock index (SI) for predicting the short-term outcomes in patients with ACS.

Methods: This is a retrospective study of 212 consecutive patients with ACS who were admitted to the cardiac care unit at Adam Malik hospital during 2014. Shock index (SI), defined as the ratio of heart rate and systolic blood pressure were collected on admission. Patients were stratified by quartiles of admission SI, clinical outcome was compared between those group.

Results: Of total 212 patients, 109 had admission $SI \leq 0.68$ and 103 had admission $SI > 0.68$. Those who presented with $SI > 0.68$ had greater in-hospital mortality and major adverse cardiovascular events (MACE) than patients with $SI \leq 0.68$. After multivariate adjustment, patients with $SI > 0.68$ had a 5.8-fold increased risk of in-hospital mortality (OR 5.89, 95% CI 2.22 to 15.67, $p < 0.001$). Moreover, admission $SI > 0.68$ was also associated with 14.6-fold increased risk of MACE (OR 14.67, 95% CI 7.2 to 29.5, $p < 0.001$). **Conclusions:** The proposed clinical parameter SI correlates with patients' prognosis and could therefore be used as a simple indicator of mortality risk of ACS.

MP4.14. Association Between Serum Uric Acid Level and In Hospital Major Adverse Cardiac Events in Patients with Acute Coronary Syndrome in Haji Adam Malik General Hospital, Medan

Hadi Zulkarnain, Zulfikri Muchtar, Refli Hasan, Abdullah Afif Siregar, Haris Hasan, Andika Sitepu, Arfian Amin Nasution, Agustina Sianturi

*Department of Cardiology and Vascular Medicine,
Faculty of Medicine of Universitas Sumatera Utara,
Haji Adam Malik General Hospital, Medan, Indonesia*

Abstract

Objective: This study aimed to assess the association between the level of uric acid and in hospital major adverse cardiac events (MACE) in patients with acute coronary syndrome (ACS).

Background: ACS is a clinical manifestation of coronary artery disease (CAD). Increased uric acid levels are associated with increased formation of adenosin which occurred in the conditions of cardiac and visceral ischaemia. Early stratification assessment can be used as a prognostic value in predicting in hospital MACE

Methods: This study is mixcohort by using of 96 patients with a diagnosis of ACS that met the inclusion and exclusion criteria and examined the level of uric acid then patients were divided into two groups: normourisemia and hyperuricemia further recording of MACE in hospital

Results: From the analysis of the chi-square test found a significant correlation between uric acid levels and acute heart failure ($p = 0.028$, $p < 0.05$) with the RR value is 2.053 (95% CI 1.031 to 7.203) and the results of chi-square analysis found a significant correlation between uric acid levels and MACE ($p = 0.039$, $p < 0.05$) with the RR value is 1.489 (95% CI 1.039 to 5.516). From the analysis results Fisher's exact test found no significant association between uric acid levels either with arrhythmia ($p = 0.735$), cardiogenic shock ($p = 0.437$) and mortality ($p = 1.000$).

Conclusion: ACS with hyperuricemia will be risk of acute heart failure and then will be risk also of experience MACE in hospital.

Keywords: ACS, UAP, NSTEMI, STEMI, uric acid levels, MACE.

MP4.15. Early Development of Hyponatremia Implicates Short-Term Outcomes in Setting of Acute Myocardial Infarction

Novia, EJH Sinaga EJH, Hasinah, Agustina, YS Situmorang, Harris Hasan, Zulfikri Mukhtar, Abdullah Afif Siregar, Andika Sitepu

*Departement of Cardiology and Vascular Medicine,
Faculty of medicine, University of North Sumatera,
Haji Adam Malik General Hospital, Medan*

Abstract

Background: Acute myocardial infarction (AMI) is a dreadful complication of cardiovascular disease increasing morbidity and mortality worldwide. Electrolyte imbalances in setting of AMI are common. The aim of this study was to asses the impact of hyponatremia on short-term outcomes in patients with AMI.

Method: This is a restrospective study including 180 consecutive patients presenting with AMI in Adam Malik hospital from January 2014 to December 2014. Hyponatremia was defined as a sodium concentration < 136 mmol/L. Patients were classified into hyponatremia and normal group, short-term outcomes (in-hospital mortality, heart failure (HF), reinfarction, bleeding, stroke, syok and arrhythmia) were investigated between those group.

Results: Of total 180 patients, 90 (50%) had hyponatremia on presentation. Patients with hyponatremia had higher rates of reinfarction ($p = 0.04$) compared with the normal group. Rates of in-hospital mortality, HF and arrhythmia also higher in hyponatremia group, but it's not statistically significant ($p > 0.05$). From Spearmans analysis, we found that hyponatremia has significant negative

correlation with HF ($r = -0.167$, $p = 0.025$).

Conclusion: Hyponatremia was associated with increased rates of reinfarction and HF in patients with AMI this study.

MP4.16. Association of Elevated Fasting Glucose with Increased Risk of In-hospital Mayor Adverse Cardiovascular Events in Nondiabetic Patients With Acute Coronary Syndromes

Agustina, S Kasiman, R Hasan, H Hasan, H Zulkarnain, AA Permana, YS Situmorang, A Sitepu, Z Mukhtar, and AA Siregar

*Department of Cardiology and Vascular Medicine,
Faculty of Medicine of Universitas Sumatera Utara,
Haji Adam Malik General Hospital, Medan, Indonesia*

Abstract

Background: Elevated blood glucose is a common metabolic disorder among patients with acute coronary syndromes (ACS) and is associated with adverse hospital outcomes. However, few data are available concerning the prognostic value of elevated fasting plasma glucose (FPG) related major adverse cardiovascular events (MACE) in ACS.

Aim: To evaluate the value of FPG for prediction of MACE in nondiabetic patients with ACS

Methods: This retrospective study involved 117 nondiabetic patients who were admitted to our centre with a diagnosis of ACS in 2014. Patients were divided into 2 groups according to their FPG level, < 110 mg/dl ($n=64$) and ≥ 110 mg/dl ($n=53$). A multivariate logistic regression analysis was used for assessing the association between FPG and in-hospital outcomes.

Results: Sixty four (54.7%) among nondiabetic patients with ACS experienced MACE during hospitalization. The incidence of MACE was found higher in elevated FPG than normal FPG group (60.9% and 39.1 %, $p=0.00$), eventhough only cardiac failure and mortality rate which were statistically significant according with FPG following ACS. Mutivariate analysis showed that elevated FPG levels were associated with increased risk of in-hospital MACE in nondiabetic patients with ACS (OR:4.78 ; 95% CI:2.09-10.92).

Conclusion: FPG was associated with increased risk of in-hospital MACE and can be an independent predictor for MACE (ie. death or cardiac failure) during hospitalization in nondiabetic patients with ACS.

Keywords: Fasting glucose, acute coronary syndrome, prognosis.

MP4.17. The Measurement of Serum Fibrinogen Levels in Patients With Acute Coronary Syndrome in Haji Adam Malik General Hospital Medan

Indah Ayu Pratiwi, E Diatami, Zulfahmi, Harris Hasan, Andika Sitepu, Zulfikri Mukhtar, Z Safri, TB Haykal, Abdullah Afif Siregar

*Departement of Cardiology and Vascular Medicine,
Medical Faculty, University of Sumatera Utara,
Haji Adam Malik General Hospital, Medan, Indonesia*

Abstract

Background: Serum fibrinogen level (SFL) is thought to be one of the risk factors for coronary artery disease (CAD). The purpose of this study was to measure the SFL in patients with acute coronary syndrome (ACS).

Methods: Consecutive sampling was performed in 56 patients with ACS, admitted in Haji Adam Malik General Hospital, Medan,

from Desember 2014 to January 2015. These patients were divided into 3 groups: ST elevated myocardial infarction (STEMI), non-ST elevated myocardial infarction (NSTEMI), and Unstable Angina Pectoris (UAP). Twenty-four hours after admission, the SFL was measured using Clauss methods. The data were collected and analyzed.

Results: The mean SFL per mg/dl in 37 STEMI patients are 426.11, in 8 NSTEMI patients are 464.5, and 11 UAP patients are 334.09. Although the SFL in NSTEMI patients was higher than the other patients but it's not significantly different among 3 groups of ACS ($p=0.274$).

Conclusion: The results show that SFL wasn't significantly different among 3 groups of ACS patients.

Keywords: fibrinogen, acute coronary syndrome.

MP4.18. Elevated Mean Platelet Volume as A Supportive Diagnostic Marker in Patients with Acute Coronary Syndrome

Blessdova Hutabarat, Zulfahmi, E Diatami E, Harris Hasan, Andika Sitepu, TB Haykal, AH Raynaldo, Zulfikri Mukhtar, and Abdul Afif Siregar.

*Departemen Cardiology and Vascular Medicine,
University of North Sumatera, Haji Adam Malik General Hospital,
Medan, Indonesia*

Abstract

Background: Platelets activation is the key step of pathogenesis of acute coronary syndrome. After Plaque ruptured, platelet is activated and make thrombus formation. Activated platelets are larger in size which can be measured by mean platelet volume (MPV). Larger platelets are more adhesive and tend to aggregate more as they more dense granules. Increased platelet volume will increase the tendency for coronary thrombus formation in ACS patients.

Method: We did a cross sectional study method conducted on October to December 2014. This research include the patients with Acute Coronary syndrome in Emergency Department Haji Adam Malik Hospital, Medan. The accuracy of MPV as a marker of ACS measured with sensitivity, specificity, negative predictive value, and positive predictive value.

Results: Total subjects in this study are 57 patients and control are 27 patients. MPV was found to be higher among ACS patients as compared to control, 10.02 ± 0.77 fl vs 8.97 ± 0.38 fl (p value < 0.0001). The sensitivity and specificity of MPV as a marker of ACS are 82.5% and 85.2%.

Conclusion: MPV may used as supportive and alternative diagnostic marker in patients with acute coronary syndrome, especially in peripheral hospital when there is no cardiac enzymes examination.

Keywords: Mean Platelet Volume, Acute Coronary Syndrome.

MP4.19. Systolic Blood Pressure at Admission, Clinical Manifestations, and In-Hospital Mortality in Patient with Acute Myocardial Infarction

Ary A Permana, YS Situmorang, A Sianturi, H Zulkarnaen, Harris Hasan, Parlindungan Manik, A Sitepu, Zulfikri Mukhtar, Abdullah Afif Siregar

*Department of Cardiology and Vascular Medicine,
Faculty of Medicine of Universitas Sumatera Utara,
Haji Adam Malik General Hospital, Medan, Indonesia*

Abstract

Background: Acute myocardial infarction (AMI) could cause hemodynamic problem at admission. Several studies confirmed

there was a relationship between systolic blood pressure (SBP) in < 12 hours onset of STEMI, clinical manifestation and inhospital mortality. These data were not available at Adam Malik Hospital.

Aim: To find the relationship between SBP in < 12 hours onset of STEMI, clinical manifestation and in-hospital mortality.

Methods: A total of 43 patients who confirmed the diagnoses of STEMI who were given intravenous streptokinase (standard procedure for AMI), admitted and were follow-up prospectively in November 1st, 2014–January 20th, 2015. Patients were divided into 2 groups based on hospital admission SBP (90-139 mmHg $n=28$ and 140-180 mmHg $n=15$).

Results: Patients with high mortality had SBP 101.7 mmHg (23.16 %) p value = 0.028, killip 3 (p value 0.001), and tended to have higher age.

Conclusion: These results suggest that patients with low systolic admission (101,7 mmHg), killip 3, and higher age was associated with increased in-hospital death in patients with < 12 hours onset of STEMI.

Keyword: AMI acute myocardial infarction, STEMI ST elevation myocardial infarction, SBP systolic blood pressure.

MP4.20. Correlation between Extracellular Heat Shock Protein (HSP) 70 and Wall Motion Score Index in ST-Elevation Myocardial Infarction Patients

Dini Paramita

*Department of Cardiology and Vascular Medicine,
Airlangga University, Surabaya, Indonesia*

Abstract

Background: Extracellular Heat Shock Protein 70 released from cells undergoing stress, which acts as a danger signal that activates the local stress response program in the surrounding cells. Correlation HSP 70 with infarct size in patients with acute myocardial infarction (STEMI) is unknown. Wall motion score index was performed to determine the infarct size estimation.

Objective: To analyze the relationship extracellular HSP 70 level and wall motion score index in patients with STEMI.

Methods: This study using cross sectional design taking samples of STEMI patients who met criterias. Blood sampling and 2D echocardiography examination for wall motion score index assessment were performed immediately before revascularization when subjects arrived at emergency room. Subjects were divided into 2 groups based on the median level of HSP 70.

Results: The STEMI patients who met the criterias were 51 subjects. The median value of HSP 70 level was 0.152 ng/ml. The mean levels of HSP 70 in group I (HSP 70 level < 0.152 ng/ml) was 0.137 ± 0.009 ng / ml, whereas group II (HSP 70 level ≥ 0.152 ng/ml) was 0.176 ± 0.017 ng / ml. WMSI median value in group I was 1.20 (1.00 to 1.76), while group II was 1.39 (1.17 to 2.00). Data distribution was not normal ($p < 0.05$). Comparative test using Mann Whitney test to find out if there is a difference value of wall motion score index between the lower HSP 70 group and the higher one, found significant differences of wall motion score index between the two of groups ($p < 0.05$). Spearman correlation test for HSP 70 level and wall motion score index showed a positive correlation and moderate relationship ($r = 0.561$) between the two variables and the correlation was statistically significant ($p < 0.001$).

Conclusion: There is a significant correlation between extracellular HSP 70 level and wall motion score index. The higher level of extracellular HSP 70, the higher wall motion score index. These results suggest that HSP 70 released into the circulation associated with the infarct size estimation.

Keywords: heat shock protein 70 , wall motion score index , infarct size estimation.

MP4.21. Correlation Between Heat Shock Protein 70 Extracellular Level and Serum Tumor Necrosis Factor Level In Patients With Acute Coronary Syndrome

Mebrillianttari, K., Putranto, J.N.E., Romdoni R.

*Cardiology and Vascular Medicine Department
Soetomo General Hospital – Medical Faculty, Airlangga University
Surabaya, Indonesia*

Background: HSP70 as a danger signal in Acute Coronary Syndrome (ACS) precedes inflammation responses, which in return may elevate Tumour Necrosis Factor alpha (TNF- α) as one of pro-inflammatory cytokines, produced by macrophages/monocytes during acute inflammation and myocardial infarction

Methods: A cross sectional study was done on 31 consecutive acute coronary syndrome visiting emergency unit of Dr Soetomo General Teaching Hospital in Surabaya. HSP70 extracellular level and TNF- α serum were taken in the ER and measured with ELISA method. All data were analysed by Pearson Correlation Test.

Results: Study subjects were 71% males with age $56,03 \pm 9,9$ years old and BMI $23,12 \pm 2,1$ kg/m². Proportion of smoking was 67,7%, followed hypertension 58,1%, diabetes mellitus 41,9%, and dyslipidemia 12,9%. EF by Biplane was $52,09 \pm 8,57$. HSP70 level was $0,15 \pm 0,0$ and TNF- α serum level was $2,65 \pm 1,08$. Using Pearson's Correlation Test, there was a moderate positive correlation of HSP70 extracellular level and TNF- α serum level ($r=0.413$; $p<0.021$).

Conclusion: TNF- α level was elevated in acute coronary syndrome Extracellular HSP70 level was moderately significant correlated with TNF- α serum level in patients with ACS.

Keywords: ACS, HSP70, TNF- α .

MP4.22. Association of Neutrophils Count With Cardiac Biomarker and In Hospital Mayor Adverse Cardiovascular Event In Patient With ST Segment Elevation Myocardial Infarction

Arfian Amin Nasution, Hadi Zulkarnain, Syaifullah,
Joy Wulansari Purba, Zulfikri Mukhtar, Nizam Zikri Akbar,
Harris Hasan, Andika Sitepu, and Abdullah Afif Siregar

*Department of Cardiology and Vascular Medicine, Faculty of Medicine,
University of North Sumatera, Adam Malik Hospital, Medan*

Abstract

Background: Neutrophils are rapidly release into the circulation upon acute stress such as acute myocardial infarction, followed by increase of cardiac enzymes. This study aimed to assessed the correlation between neutrophil count and cardiac enzyme (CKMB and troponin-T), and also assessed neutrophil count as a predictor of mayor in-hospital events in patients admitted for an ST segment elevation myocardial infarction (STEMI).

Methods: This was a retrospective study in patients admitted for STEMI with onset ≤ 24 hours. We enrolled the laboratory results of 42 STEMI patients. The patients were divided into quartiles according to neutrophil count: neutrophil $<10 \times 10^3/\mu\text{L}$ ($n=7$), neutrophil $10-11.8 \times 10^3/\mu\text{L}$ ($n=14$), neutrophil $11.9-14.2 \times 10^3/\mu\text{L}$ ($n=11$), neutrophil $>14.2 \times 10^3/\mu\text{L}$ ($n=10$). We evaluated the incidence of major adverse cardiovascular events (MACE), a composite of all cause of death, cardiogenic shock, acute heart failure and VT/VF during hospitalization.

Results: Neutrophil count have a reasonable positive correlation with

CKMB ($r=0.533$, $p<0.0001$) and troponin-T ($r=0.476$, $p<0.001$). The high neutrophil count was associated with a significantly higher rate of in-hospital MACE (Q4vsQ1=80%vs28%), and in-hospital death (Q4vsQ1=20%vs0%). In the univariable model, high neutrophil count ($>11.8 \times 10^3/\mu\text{L}$) was associated with higher rate of in-hospital MACE (OR=4.063, $p=0.03$) compared to the low neutrophil count ($\leq 11.8 \times 10^3/\mu\text{L}$). In the multivariable model, only leukocyte was an independent predictor of in-hospital MACE (OR=9.711, $p=0.014$).

Conclusion: Neutrophil count have a reasonable positive correlation with cardiac enzymes in patients with STEMI onset ≤ 24 hours. Neutrophil count is also a useful marker to predict in-hospital MACE in patient with STEMI onset ≤ 24 hours.

Key words: ST-Segment Elevation Myocardial Infarction; Neutrophil.

MP4.23. Glycated Haemoglobin and Severity of Coronary Artery Disease in Patients with Diabetes Mellitus

Natalia Polii¹, D Tiolung¹, I Rosmanadewi¹, B Budiono²,
J Pangemanan, and A Panda¹

*¹Departement of Cardiology and Vascular Medicine,
Medical Faculty Sam Ratulangi University Manado /
Prof. Dr. R.D. Kandou General Hospital Manado*

²Heart and Vascular Center Awal Bros Hospital Makassar

Abstract

Background: Glycated hemoglobin (HbA1c) is associated with an increased risk of cardiovascular disease. Studies showed that HbA1c is more useful than fasting plasma glucose levels for assessing coronary artery disease (CAD) risk and mortality. The relationship between HbA1c levels and atherosclerosis in some studies were found significant in patients with diabetes.

Objective: The aim of this study was to examine the relationship between HbA1c levels and the complexity of coronary artery lesions among the patients with diabetes mellitus (DM).

Methods: This retrospective study enrolled a total of 38 consecutive type 2 DM patients who underwent the elective coronary angiography and had their HbA1c levels measured at the Awal Bros Makassar Hospital between July 2013 and August 2014. The complexity of the coronary artery lesions was evaluated using the modified gensini score. Spearman correlation were used to analyze the association between the measured HbA1c levels and modified gensini score.

Results: Of 38 patients included in this study, the mean age was 59 ± 8 years. There were no significant differences in baseline characteristic. There was also no significant correlation between LDL and modified gensini score. The HbA1c levels and modified gensini score were found correlated ($r = 0.298$; $p = 0.035$).

Conclusion: HbA1c is significantly associated with the complexity of coronary lesions among patients with DM. In this respect, our findings may demonstrate the importance of maintaining an optimal HbA1c level in order to withhold coronary artery disease progression.

Keywords: HbA1C, modified gensini score, coronary artery disease.

V. Poster Presentation

PP 1.13. One year Behavioral Intervention for Uncontrolled Hypertension: A Cross Sectional study in Bengkulu, Indonesia

Surya Marthias¹, A.C. Meriyenes¹, A.Y. Putri¹,
M.L. Palupi¹, Noviyanti¹, T.A. Pakasi²

¹ Scientific and Research Organization,

Student Council of the School of Medicine University of Indonesia, Jakarta

² Department of Community Medicine,

School of Medicine University of Indonesia, Jakarta

Abstract

Background: Hypertension has become a significant problem with prevalence of 31.7% among adult in Indonesia. Although effective drugs are available, management of hypertension is still inadequate. In Bengkulu, hypertension accounted for higher of incidence rate and estimated 85 to 90% are uncontrolled with low compliance to anti hypertensive medication.

Objective: This study is carried out to identify factors contributing to uncontrolled hypertension and analyzed effect of intervention on drug consumed, systolic blood pressure (SBP) level, and 1-year coronary heart disease (CHD) risk.

Methods: A cross sectional study was conducted on 2012 to 2013 with total 102 patients age 50-80 with sustained uncontrolled hypertension in Primary Health Care, Lebong District, Bengkulu. Patient were recruited using consecutive sampling and given standardized questionnaire before and after one year behavioral intervention. Questionnaire had been validated with alpha-cronbach 0,74. Guided discussion had done monthly in Centre of Geriatric as part of intervention for both groups, followed by evaluation of drug consumed. We conduct analysis effect in SBP and 1-year CHD risk among compliers and to compare with an intention-to-treat analysis.

Results: Of 102 respondents, 55% were compliers who had significant increased in consuming drug regularly (74% vs 26%), increased in knowledge score (54% vs 46%), and had lower baseline SBP (133 vs 155 mmHg) compared with noncompliers. The effect of intervention significant for SBP among compliers ($p=0,04$) with reduction of SBP at least 1,2 mmHg in a mean, but not significant different for 1-year CHD risk ($p>0,05$). Factor absence of symptoms (70%) significantly contribute to uncontrolled hypertension ($p=0,02$). However, family support in this regional was also played significant role that influenced patient to consumed drug regularly.

Conclusion: Patients with positive knowledge and attitude are more likely to comply with treatment and could significantly reduce SBP in a year. Educational programs focusing on modificating preventable risk factors and compliance towards antihypertensive drugs should be carried out to reduce the mortality and morbidity associated with the disease.

Keyword: behavioral, complier, knowledge, systolic blood pressure, uncontrolled hypertension.

PP1.14. Clinical Profile of Hypertensive Patients in a Public Hospital in Bintuni, West Papua, Indonesia

Dedy Lizal, GY Daimboa, and S Imaculata

Bintuni Public Hospital, Teluk Bintuni, West Papua, Indonesia

Abstract

Background: Prevalence of hypertension, as the most important risk factor for cardiovascular disease, keeps increasing in Indonesia. However, little is known about hypertension in a remote area like Papua, which has different racial and cultural background. This study aimed to describe clinical profile of hypertensive patients in Bintuni Public Hospital, West Papua, Indonesia.

Methods: It was a descriptive retrospective study, in which medical records of all hypertensive patients in Bintuni Public Hospital, for the period of September 2012 to August 2013, were studied.

Results: Total number of samples was 346 patients, in which 247 patients met the study criteria and were analyzed. There were 127

(51.4%) males and 120 (48.6%) females. The mean age was 53.1 ± 10.1 years. The majority of patients were Non-Papuan (62.3%), low-educated (64.4%), and unemployed (39.3%). There were 217 (87.8%) patients who had uncontrolled blood pressure, 68 (27.5%) patients had hypertensive crisis, 43 (17.4%) patients had diabetes mellitus, and 47 (19.0%) patients had left ventricular hypertrophy. Stroke was the most common complication of hypertension. Papuan had higher proportion of coronary artery disease ($p<0.05$), lower diastolic blood pressure at diagnosis ($p<0.05$), and better diastolic blood pressure control ($p<0.05$), than Non-Papuan. Majority of patients (63.2%) were found to be on monotherapy.

Conclusion: The study reveals poor blood pressure control and high proportion of hypertensive crisis among hypertensive patients in Bintuni Public Hospital, which might be caused by undertreatment. There were some clinical profile differences between hypertensive Papuan and Non-Papuan that need further investigation.

Keywords: descriptive, hypertension, Papua.

PP1.15. Risk Factor-Free Adult Woman With Non-ST Elevation Myocardial Infarction As The Byproduct Of Solitary Myocardial Bridging

Bayushi Eka Putra¹, A Yusri²

¹ Medical research unit, Faculty of Medicine University of Indonesia, Jakarta, Indonesia

² Cardiology, dr. Kanujoso Djatiwibowo General Hospital, Balikpapan, Indonesia

A 40 years old Asian woman came into the emergency room (ER) because of chest discomfort since one day ago. There was neither previous history of chest pain nor any metabolic diseases. Patient was still experiencing regular menstrual period and denied history of smoking. ECG showed an incomplete right bundle branch block without significant ischemic response. Complete blood count showed no abnormality and cardiac marker was high (CK-MB 85 U/L), indicating a subendocardial myocardial infarction. Three litres of oxygen was administered via nasal canule along with 5 mg sublingual isosorbide dinitrate (ISDN), 300 miligrams of aspirin, and 300 miligrams of clopidogrel. One miligram of morphine was administered intravenously because there was no significant improvement of symptom relieve from isosorbide. Chest X-Ray showed cardiomegaly, while echocardiography indicated anteroseptal hypokinetic with preserved ejection fraction (EF: 69.9%). Coronary angiography showed "milking effect" in proximal part of LAD. No sign of stenosis found in right coronary artery.

Patient was diagnosed with myocardial bridging. Therapeutic option for symptomatic patient with myocardial bridges differ in every center since there has been no guidelines been established. There are three options for clinical management for patients with symptomatic myocardial bridging: medical therapy, cardiac catheterization, and surgery. The patient was treated with bisoprolol as first line medical intervention and discharged after two days of symptom-free.

This case is presented to raise the awareness of myocardial bridging as one of differential diagnoses in myocardial infarction.

Keywords: Myocardial bridging, NSTEMI, milking effect, coronary angiography.

PP1.16. A 39 year old Man with Infective Endocarditis with Positive Antineutrophil Cytoplasmic Antibodies (ANCA) : A Case Report

Roni AT, Abdullah Afif Siregar, Zulfikri M, Nizam A, Aldino SA

Department of Cardiology and Vascular Medicine, Faculty of Medicine,
University of North Sumatra/ Haji Adam Malik Hospital,
Medan, Indonesia

Infective endocarditis triggers the development of multiple immunological reactions, including the formation of autoantibodies. Certain categories of autoantibodies triggered by endocarditis, for example, antineutrophil cytoplasmic antibodies (ANCA), may cause secondary diseases that require special diagnostic approaches and at times special interventions. Formation of ANCA secondary to endocarditis has been linked to vasculitis and renal disease.

We report a case of an Indonesian man with symptoms peteckie on his extremities. This condition has been experienced since a year ago. History of progressive breathlessness, arthralgia, and fever were found. Physical examination showed a grade 3/6 PSM in apex to axilla and a grade 3/4 EDM in ULSB. The ECG showed sinus rhythm with LVH. The CXR showed cardiomegaly and congestion. TTE found vegetations in aortic and pulmonary valves. Medication in ward were ceftriaxone, gentamycin, furosemide, Aspar K and Ascorbid Acid. His previous treatment was in Island Hospital in Penang with initial working diagnosis was an ANCA associated vasculitis. He was noted to have a positif ANCA/PR3 and was commenced on prednisolone, cellcept and imuran by his consultant haematologist in Indonesia. He has been on this concoction of immunosuppression for a year. His blood test show that he has renal impairment. He had a renal biopsy with conclusion vasculitic nephropathy. Blood cultures in 3 sets were all positive for a gram positive cocci/alpha haemolytic streptococcus. After further examination, this patient was diagnosed with subacute bacterial endocarditis.

A patient presents with fever, arthralgia, peteckie and the ANCA test positive, appropriate steps should be taken to exclude infection (especially IE) before confirming the diagnosis of ANCA-associated vasculitis and embarking on long-term immunosuppressive therapy.

Keywords: antineutrophil cytoplasmic antibodies, infective endocarditis, vasculitis.

PP1.17. The Impact of Abdominal Obesity on Creatinine Serum Elevation in Patient with Hypertension

Aprivita Gayatri¹, Bambang Dwi Putra¹,
Budhi S Purwowiyoto¹, Nyoto Widyo Astoro²

¹ Department of Cardiology and Vascular Medicine,
Faculty of Medicine University of Indonesia, Jakarta, Indonesia

² Department of Internal Medicine,
Gatot Soebroto Central Army Hospital, Jakarta, Indonesia

Abstract

Background: Hypertension and abdominal obesity are part of metabolic syndrome's component and many study showed that metabolic syndrome will increase risk of chronic kidney disease. Each of those components has their own mechanism to influence the development of kidney disease.

Objective: To study the impact of abdominal obesity and hypertension which both are strong risk factor for kidney disease on creatinine serum elevation as a marker of kidney function.

Methods: A cross sectional study was conducted in National Cardiovascular Center Harapan Kita and Gatot Soebroto Central Army Hospital Jakarta using 1200 medical records data of hypertension patient between 2009-2014. Waist circumference,

creatinine serum, body weight and height, history of diabetes, dyslipidemia, and smoking, also medication regimen such as ACE-inhibitor, CCB, beta blocker, diuretic, statin were obtained at baseline and included in a multivariate logistic regression analysis.

Result: There were 1010 inclusion hypertension patients enrolled in this study, comprising 500 (68.7%) patients with abdominal obesity were male, 486 (66.8%) patients had dyslipidemia, 523 (71.8%) patients were obese. Multivariate logistic regression analysis showed significant association between abdominal obesity in hypertension patient with increased creatinine serum level > 1.2 mg/dl (p=0.002, confidence interval 1.19 – 2.14) and decreased GFR <60ml/min/1.73m² (p=0.0001, confidence interval 1.65 – 2.94). Abdominal obesity in hypertension patient had risk of 1.6 fold creatinine serum elevation and 2.2 fold estimated GFR reduction.

Conclusion: Fat deposit accumulation in kidney combined with high intra-abdominal pressure on abdominal obesity leading to kidney injury and increased blood pressure. Therefore, hypertension and abdominal obesity are combination of strong risk factor in causing further kidney damage.

Keywords: hypertension, creatinine serum level, abdominal obesity.

PP1.18. Is There Any Role of Bromocriptine in Indonesian Peripartum Cardiomyopathy? Experiences in Our Case Series

Wibisono Firmanda, Rony Mario Candrasatria, Bambang Budi Siswanto

Department of Cardiology and Vascular Medicine,
Faculty of Medicine University of Indonesia,
and National Cardiovascular Center Harapan Kita, Jakarta, Indonesia

Management of peripartum cardiomyopathy is still challenging despite conventional evidence based therapy of heart failure since half of the cases showed incomplete recovery, condition that may influence further quality of life and next pregnancy due to high recurrency rate. Some literatures showed bromocriptine has benefit in improving the outcome of this potentially life threatening condition. However, there is no data about efficacy of bromocriptine in Indonesian population. We report a case series of peripartum cardiomyopathy. First patient, 39 years old multiparity woman came with acute decompensated heart failure one day after delivery. Second patient, 28 years old multiparity woman came with acute lung oedema five days after delivery. Both patients received judicious diuretics, ACE inhibitor, β -blocker, mineralocorticoid antagonist and bromocriptine. Upon hospitalization and follow up, both patients recovered clinically. First patient had significant improvement in left ventricle ejection fraction. Second patient, despite the improvement in functional status, did not show a significant improvement in left ventricle ejection fraction. In conclusion, optimal heart failure therapy following the guideline should be given in peripartum cardiomyopathy. However, the role of bromocriptine in peripartum cardiomyopathy in Indonesian population should be validated further by larger trial.

Keyword: peripartum cardiomyopathy, heart failure guidelines, bromocriptine.

PP1.19. Hyponatremia in Heart Failure: Choices of Management

TM Haykal, Rarsari Soerarro, Nani Hersunarti,
Bambang Budi Siswanto

Department of Cardiology and Vascular Medicine,
Faculty of Medicine, Universitas Indonesia
National Cardiovascular Center Harapan Kita, Jakarta, Indonesia

Hyponatremia is a common comorbidity in heart failure. It is a predictor of increased mortality, rehospitalization, and length of stay in the hospital. Management of hyponatremia is a crucial aspect in treating heart failure patients.

Objective: To present choices of management of hyponatremia in heart failure by considering the pathophysiological process.

The first patient is a heart failure patient with severe symptomatic hyponatremia. Her sodium level was 117 mmol/L. She was treated with AVP antagonist with a good outcome. Her sodium level increased to 139 mmol/L and she was clinically treated. The second patient was a heart failure patient with severe asymptomatic hyponatremia. Her sodium level was 121 mmol/L. She was treated with strict fluid restriction and increased dose of loop diuretic. Her sodium level increased to 138 mmol/L and she was clinically treated. Hyponatremia in heart failure is caused by hemodilution where there is an increased level of fluid (hypervolemic state). Choices of management of hyponatremia in heart failure patients include fluid restriction, increased dose of loop diuretic and AVP antagonist.

Keywords: hypervolemic hyponatremia, heart failure, AVP antagonist, diuretic.

PP1.20. A Pregnant Women With Severe Pericardial Effusion Caused by Tuberculosis Infection: A Case Report

Parwata Jaya and IGN. Putra Gunadhi

Department of Cardiology & Vascular Medicine, Faculty of Medicine, Udayana University, Sanglah Hospital, Denpasar, Bali, Indonesia

Pericardial effusion has been reported in the first and second trimester in 15 to 20 percent of pregnancies. Tuberculosis is around 3,8% as a caused of pericardial effusion In Italy at 1996-2004 (1). Pericardiocentesis is especially recommended when a purulent, tuberculous, or neoplastic pericarditis is suspected, or in patients, who remain symptomatic, despite medical treatment⁽²⁾.

A-28 years first pregnant 28-29 weeks women, complained with shortness of breath doesn't change with changing position since 1 week before admission. The physical examination reveal blood pressure 120/80 mmHg, normal heart sounds. The electrocardiogram (ECG) showed sinus tachycardia with low voltage. Echocardiography showed severe pericardial effusion (largest diameter 3,2 cm at inferior segment) with RA & RV collapse, MV & TV Variantion >25%, normal valve & normal systolic LV & RV Function. She was diagnosed with severe pericardial effusion with tamponade sign and planning to done pericardiocentesis. Internal medicine was diagnosed the patient with pericardial effusion caused by tuberculosis after confirm with positif ADA pleural fluid laboratorium results. Category I oral anti tuberculosis and metil prednisolone 16 mg bid was given to the patient.

Wide varieties of etiologic forms of pericardial disease occur sporadically in pregnant women⁽³⁾. The incidence of tuberculosis pericardial effusion was 14,1%⁽⁴⁾. Cardiac tamponade, present in 10% of patients with tuberculous pericardial effusion in a study conducted in South Africa⁽⁵⁾. M-mode and two-dimensional Doppler echocardiography remain the standard noninvasive diagnostic methods for detection of pericardial effusion and tamponade⁽⁶⁾.

Most Pericardial disorders are managed during pregnancy as in nonpregnant patients. Pericardiocentesis should be performed only for very large effusions causing clinical signs of cardiac tamponade or if presence of suppurative, tuberculous or neoplastic pericardial effusion is suspected. Echocardiographic guidance of pericardiocentesis is preferred to fluoroscopic guidance in order to avoid fetal X-ray exposure⁽¹⁾.

Tuberculous pericardial effusion usually develops insidiously,

presenting with nonspecific systemic symptoms. M-mode and two-dimensional Doppler echocardiography remain the standard noninvasive diagnostic methods for detection of pericardial effusion and tamponade. Most Pericardial disorders are managed during pregnancy as in nonpregnant patients. Echocardiographic guidance of pericardiocentesis is preferred to fluoroscopic guidance in order to avoid fetal X-ray exposure.

PP1.21. Evaluation of a Hypertension Program at Primary Health Care in Indonesia: Influences on the Patients' Self-Compliance and Lessons Learnt

Novita Gemalasari Liman¹, Chici Pratiwi¹, Muchtaruddin Mansyur²

¹ Faculty of Medicine, Universitas Indonesia, Jakarta, Indonesia

² Community Medicine Department, Faculty of Medicine, Universitas Indonesia, Jakarta, Indonesia

Abstract

Background: Despite the high burden of hypertension cases in Indonesia, no studies have focused on establishing the qualified primary health care program. Early 2013, a primary health care in Jakarta started a hypertension program, which provides free health care for low-income hypertensive patients. This pilot study aimed to evaluate and share learnings from a newly implemented program.

Method: A program evaluation survey was conducted in May 2013 among eight health care staffs. Questionnaires were completed in regards to their views and experiences with the program. The primary outcome was the effect of the program on engaging the hypertensive patients, the current challenges, and the alternative solutions. Data on the respondents' opinions of program implementation was extracted and analysed using Ishikawa diagram and scoring matrix.

Results: After the new program was launched, the number of hypertensive patients who routinely meet the scheduled appointments increased about 25%. The main challenges in undergoing the hypertension program were patients' medication and control compliance, limited consultation time, and limited facilities for detection of complications. Of the four alternative solutions, the development of education-oriented control book was believed to have the highest efficacy and efficiency.

Conclusion: The patients' self-compliance increased when the new hypertension program was presented. The implementation of an education-oriented control book is one strategy to improve health education and promotion aspect but requires a ready team of volunteers, acceptance and significant time to develop.

Keywords: hypertension, program evaluation, primary health care.

PP1.22. Unusual Cases of Peripartum Cardiomyopathy Manifesting as Possible Thromboemboli Phenomena: Case Series

Kelvin Marwali¹, M Sirait¹, S Sumantri^{1,2},
I Pardede¹, Sunanto Ng^{1,2}

¹ Siloam General Hospital

² Faculty of Medicine, Universitas Pelita Harapan,
Lippo Village, Tangerang, Indonesia

Peripartum cardiomyopathy (PPCM) is a rare reversible idiopathic cardiomyopathy towards the end of pregnancy or in the months following delivery when no other cause of heart failure is found with a reported incidence of 1 per 3000 to 1 per 4000 live births and a fatality rate of 20%–50%. We report three cases of LV

thrombus in patients with PPCM.

Case I: 38 year old, parturient one, female consulted from pulmonologist with dyspnea for two weeks after three month post-partum. On day two patient was hemiplegic. MRI showed large ischemic area of right hemisphere. She refused thrombolytic treatment.

Case II: 21 year old, parturient one, female presenting with pain and numbness on left foot. She also complained worsening dyspnea two weeks post-partum. Bedside 2D ultrasound showed LV thrombus. CT angiography showed occlusion as high as right external iliac artery. Heparin was started.

Case III: 30 year old, parturient three, female presenting with shortness of breath for one month after three month post-partum. Echocardiography showed LV thrombus. She was started on LMWH.

Case I: She died after worsening of emboli stroke. **Case II:** She was referred to another hospital for further management. **Case III:** She was discharged to home.

Patients with PPCM may rarely be predisposed to thromboembolic phenomenon due to blood stasis resulting from the hypercoagulable state of pregnancy and depressed left ventricular systolic function. Early detection and anticoagulation may prevent life threatening embolization.

PP1.23. Unstable Ventricular Tachycardia on Malaria Falciparum Patient with Quinine Infusion Therapy: A Case Report From Type C Hospital in Indonesia

Charles Saputra¹, Leonora Johana Tiluata², Dhinar Kemas Ariawidjaja³, Anggoro Djangkaru⁴

¹ General Physician at RSUD Atambua, Belu, East Nusa Tenggara, Indonesia

² Departement of Cardiology and Vascular Medicine, Prof. Dr. WZ Johannes General Hospital, Kupang, East Nusa Tenggara, Indonesia

³ Departement of Internal Medicine, Faculty of Medicine, University of Gadjah Mada, Sardjito General Hospital, D.I.Yogyakarta, Indonesia

⁴ Departement of Anesthesia, Faculty of Medicine, University of Sebelas Maret, Moewardi General Hospital, Surakarta, Central Java, Indonesia

The incidence of prolonged QT interval is approximately 10% of all patients who receive quinine infusion which manifest as slight QRS widening until VT/VF.

53 year-old male presented with dyspnea, weakness, and generalized seizure. The patient was diagnosed with malaria falciparum infection treated with quinine infusion because intolerant with oral regimen. Examination in the ward found the patient in seizure, and shock condition. Airway and breathing was clear. IV fluid challenge was attempted but there was no improvement on haemodynamics. The ECG showed monomorphic ventricular tachycardia (VT). Laboratory findings showed positive malaria falciparum, normal liver and renal function. The patient was on unstable VT, we decided to perform precordial thump. The pulse became stronger, and then the patient was transferred to the ICU and synchronized cardioversion was performed immediately. Midazolam 3 mg was given prior to synchronized cardioversion at 100 J. The ECG returned back to sinus rhythm with prolonged QT interval and improved peripheral perfusion. The patient was hospitalized for 5 days then was

Quinine is an anti malarial drug that have potential malignant arrhythmia effect, but still being used in rural because of the

availability. Health care providers must be careful of using this drug and be ready for management of arrhythmia.

Keywords: malaria, quinine, arrhythmia, ventricular tachycardia, cardioversion.

PP1.24. Cardiorenal Syndrome: Treat The Heart Get The Kidney Back. Case Series

Aulia Rizki Maulana, Nani Hersunarti, Bambang Budi Siswanto, Rarsari Soerarro, and Amiliana Mardiani Soesanto

Department of Cardiology and Vascular Medicine, Faculty of Medicine University of Indonesia – National Cardiovascular Center Harapan Kita, Jakarta, Indonesia

Cardiorenal syndrome is a condition that occurs due to the interaction between cardiac and renal function impairment. Renal dysfunction is a common and progressive complication of heart failure, with a clinical course that typically fluctuates with the patient's clinical status and treatment. Understanding the mechanism involved in the cardiorenal syndrome will allow us to target therapies that interrupt this dangerous feedback cycle. The role of renin-angiotensin-aldosterone system (RAAS) blocker and diuretics for management of heart failure is beneficial to improve renal dysfunction.

We reported two cases of 54 years old man and 57 years old man with renal impairment due to worsening of the heart function. For case one, after optimal fluid management and therapy of heart failure with RAAS blocker, there was an improvement in clinical condition and renal function. For case two, after stabilized blood pressure, postponed some drug can worsen renal function and provide optimal treatment of heart failure, in addition, improved nutrition and controlled blood glucose were also carried out, there was an improvement in clinical condition and renal function. The appropriate holistic management of cardiorenal syndrome for this two cases was done and there was an improvement in clinical condition and renal function.

In cardiorenal syndrome, clinician have to understand about the importance of optimal therapy heart failure for improvement of renal function, give better prognostic on heart failure and reducing number of hospitalization and mortality.

Keywords: cardiorenal syndrome, management, heart failure.

PP1.25. Characteristics of Patients Hospitalized for Heart Failure in Agoesdjat General Hospital, Ketapang, West Borneo, Indonesia

Albert Sudharsono¹, Bonita Effendi², Bambang Budi Siswanto³

¹ General Practitioner, Agoesdjat General Hospital, Ketapang, West Borneo

² Epidemiology Department, Faculty of Public Health, Universitas Indonesia

³ Harapan Kita National Cardiovascular Center, Jakarta, Indonesia

Abstract

Background: Heart failure (HF) is a challenging problem worldwide. Based on Indonesia National Basic Health Research 2013, the prevalence of HF was 0.13%. Prevalence of HF is raising consequent to an increased number of older individuals, history of heart and vascular disease.

Objective: This study is conducted to determine the characteristics and comorbidities of patients hospitalized with heart failure in Agoesdjat General Hospital.

Methods: This is a cross sectional study with descriptive analysis from medical record in July-December 2014. Total sampling consisted of hospitalized adult patients diagnosed with heart failure. The classification of acute decompensated heart failure (ADHF) is based on the presented signs and symptoms according to The European Society of Cardiology guidelines. All documented data were analyzed using SPSS ver 18.0.

Result: We included 58 completed medical records of hospitalized patients diagnosed with heart failure. Generally patients were hospitalized with worsening condition of HF which is ADHF (75.9%), while others were chronic HF. The age of hospitalized patients was mostly 41-60 years (44.4%), with higher prevalence in men (58.6%). Patients presented with signs of congestion such as: dyspnea (77.6%), angina (12.1%), fatigue (5.2%), ascites (3.4%), and hemiparesis (1.7%). Comorbidities include chronic kidney disease (17.2%), diabetes mellitus (13.8%), COPD (12.1%), dyspepsia (8.6%), and infection (5.2%). Mean length of hospitalization was 5 ± 2.9 days.

Conclusion: Admitted patients with HF have a remarkably signs of congestion and fluid retention. The prevalence of HF in Agoesdjam Hospital mostly occurred in younger group of age than data from Indonesia National Basic Health Research 2013.

PP1.26. Correlation between Wall Motion Score Index and Anatomical M-mode Systolic Thickening with Functional Capacity in Post-Myocardial Infarction Patients with Heart Failure

AF Rahimah and Budi S Pikir

*Department of Cardiology and Vascular Medicine,
Soetomo General Hospital – Medical Faculty, Airlangga University,
Surabaya, Indonesia*

Abstract

Background: Resting measurement of left ventricular ejection fraction is not sufficient to predict exercise capacity in cardiac patients. Therefore, wall motion score index (WMSI) and anatomical M-mode (AMM) systolic thickening post myocardial infarction was studied to determine its correlation with functional capacity.

Methods: A cross-sectional study of 33 consecutive post-MI patients with class I-II NYHA heart failure visiting cardiology outpatient clinic of Dr. Soetomo Hospital, Surabaya. A resting echocardiogram was taken, followed by a symptom limited treadmill stress test employing Naughton protocol. Echocardiographic parameters taken were WMSI and AMM systolic thickening of basal- and mid-LV segments. Appropriate statistical analyses were used to determine the correlation of between WMSI and AMM systolic thickening with exercise capacity.

Results: Study subjects were 69.7% males with age 58.45 ± 6.2 years old and BMI 24.07 ± 3.2 kg/m². Proportion of hypertension was 60.6%, smoking 51.5%, diabetes mellitus 42.4% and dyslipidemia 42.4%. WMSI was 1.68 ± 0.45 , mean AMM systolic thickening $39 \pm 13\%$, and exercise capacity 3.69 ± 1.8 METs. There was moderate negative correlation of WMSI and a moderate positive correlation of AMM systolic thickening with functional capacity ($r = -0.466$, $r = 0.415$ consecutively; $p < 0.05$).

Conclusion: WMSI and AMM systolic thickening were correlated with functional capacity in post-MI patients with heart failure.

Keywords: wall motion score index, WMSI, anatomical M-mode, AMM, systolic thickening, functional capacity, myocardial infarction, heart failure.

PP1.27. Correlation between Neutrophil to lymphocyte ratio (NLR) with Mortality, Heart Failure and Rehospitalization in Patients with Acute Coronary Syndrome

AAA Firdaus and A Soebagio

*Department of Cardiology and Vascular Medicine Department,
Soetomo General Hospital – Faculty of Medicine, Airlangga University,
Surabaya, Indonesia*

Abstract

Background: Neutrophil-to-lymphocyte ratio (NLR) has emerged as the potent inflammatory marker, which might be of prognostic value in cardiac- and non-cardiac diseases.

Methods: A 6-month prospective study was done on 55 consecutive ACS patients visiting emergency department of Soetomo General Hospital, Surabaya. Outcomes (mortality, heart failure and rehospitalization) were observed. Appropriate statistical analyses were used to determine correlation between NLR with these outcomes.

Results: Study subjects were 82% males with age 54.21 ± 10.08 years old and BMI 23.31 ± 2.6 kg/m². Proportion of smoking was 80%, hypertension 54.5%, diabetes mellitus 30.9%, dyslipidemia 18.2%, STEMI 76.4%, UA/NSTEMI 23.6%. Leucocyte count was $12,082.73 \pm 2,923.9$ /mm³, neutrophil $8,799.60 \pm 2,546.9$ /mm³, lymphocyte $2,201.18 \pm 915.9$ /mm³, with NLR 4.68 ± 2.4 . Proportion of heart failure was 54.5%, rehospitalization 9.1% and mortality 21.8%. Logistic regression revealed moderate correlation of NLR with mortality ($p = 0.04$; $r = 0.315$) but not with heart failure and rehospitalization ($p > 0.05$).

Conclusion: NLR was moderately correlated with mortality in ACS patients.

Keywords: Leucocyte, neutrophil, lymphocyte, neutrophil to lymphocyte ratio, acute coronary syndrome, heart failure, rehospitalization, mortality.

PP1.28. Infective Endocarditis with Vasculitis Nephropathy and Positive Antineutrophil Cytoplasmic Antibodies (ANCA): A Case Report

AT Roni¹, AA Siregar¹, SA Aldino¹, H Hariman H², S Nasution S³

¹ *Department of Cardiology and Vascular Medicine*

² *Department of Clinical Pathology*

³ *Sub Division Nephrology Department Internal Medicine,*

Faculty of Medicine, University of Sumatra Utara /

Adam Malik Hospital, Medan, Indonesia

Infective endocarditis triggers the development of multiple immunological reactions, including the formation of autoantibodies. Certain categories of autoantibodies triggered by endocarditis, for example, antineutrophil cytoplasmic antibodies (ANCA), may cause secondary diseases that require special diagnostic approaches and at times special interventions. Formation of ANCA secondary to endocarditis has been linked to vasculitis and renal disease.

We report a case of an Indonesian man with symptoms of ptechia on his extremities since a year ago. He had history of progressive breathlessness, arthralgia, and prolonged fever. Physical examination showed a grade 3/6 PSM in apex to axilla and a grade 3/4 EDM in ULSB. The ECG showed sinus rhythm with LVH. The CXR showed cardiomegaly and lung congestion. TTE found vegetations in aortic and pulmonic valves. The previous laboratory examination (Blood routine examination; ANCA/PR3 ; Blood culture; Urinalysis; Renal biopsy) from various hospital showed he had infective endocarditis,

congestive heart failure, anemia, skin vasculitis, vasculitis nephropathy and renal impairment. He got treatment with antibiotics, immunosuppressant, corticosteroid and supportive medication and showed successful improvement. The patient recommended to aortic valve replacement operation for aortic regurgitation, unfortunately he refused it.

An infective endocarditis patient with vasculitis complication and others complication had been presented. The integrated management through various specialties and sub speciality for this patient gave good result.

Keywords: antineutrophil cytoplasmic antibodies, infective endocarditis, vasculitis.

PP1.29. Role Of Red Blood Cell Distribution Width As Prognostic Factor In Acute Decompensated Heart Failure: A Mini Systematic Review

Eka Adip Pradipta¹, FS Ramaditya¹, HR Nursanti¹, IT Padesma¹, SB Premiaji¹, Bambang Budi Siswanto²

¹Faculty of Medicine, University of Indonesia, Jakarta, Indonesia

²Department of Cardiovascular, National Cardiovascular Centre Harapan Kita, Jakarta, Indonesia

Abstract

Background: Acute decompensated heart failure (ADHF) is a common etiology for hospitalization associated with high mortality and re-hospitalization rate. An early, accurate, and simple prognostic marker examination is pivotal in optimizing patient management, reducing mortality and re-hospitalization rate. Recently, red cell distribution width (RDW) was reported to have a strong relationship with heart failure prognosis.

Therefore, this study aim to identify the role of RDW as a prognostic factor in acute decompensated heart failure patients.

Method: A structured search on Pubmed, EBSCO, Pubget, and Cochrane database were conducted on 26 June 2013. Human cohort studies were included, while studies with congenital heart disease, malignancies, or hematologic disease were excluded. After conducting article screening towards 53 abstract according to the inclusion and exclusion criteria there were 13 articles left, in which 5 of them were included in this study.

Result: Of all study included, four of them are prospective cohort meanwhile the other one is a retrospective cohort. Studies by Jackson et al (HR 1.06 95% CI 1.01-1.11, p=0.022), Pascal-Figual et al (HR 1.074 95% CI 1.021-1.127, p=0.004), Kimmenade et al (HR 1.03 95% CI 1.02-1.07, p=0.04), Oh et al (HR 1.140 95% CI 1.042-1.247 p=0.004), Makhoul et al (HR 1.15 95% CI 1.08-1.21, p<0.001) showed that RDW value on admission or early on hospitalization is an independent predictor of mortality and re-hospitalization in ADHF patients

Conclusion: RDW value early on hospitalization provides subtle yet significant information in predicting mortality and re-hospitalization rate in ADHF patients.

PP1.30. Correlation between Left Ventricle Function with Functional Capacity in Post Myocardial Infarction Patients with Heart Failure

Irma Sudirman, Budi S Pikir

Department of Cardiology and Vascular Medicine, Soetomo General Hospital-Medical Faculty, Airlangga University, Surabaya, Indonesia

Abstract

Background: The myocardial infarction (MI) alters left ventricular function, which may reflect on functional capacity.

Methods: A cross-sectional study was done on 33 consecutive post-MI patients with class I-II NYHA heart failure who visiting cardiology outpatient clinic of Dr. Soetomo Hospital, Surabaya. A resting echocardiogram was taken, followed by a treadmill stress test employing Naughton protocol. Assessment of left ventricle function as determined by 2D and doppler transthoracic echocardiography. We evaluated impaired exercise capacity using validated Borg Scale among study subjects. Analyses were conducted to determine correlation of left ventricle function with exercise capacity.

Results: Study subjects 69.7% were males, mean age was 58.45±6.2 years, BMI 24.07±3.2 kg/m², prevalence of hypertension was 60%, diabetes mellitus 42%, dyslipidemia 42%, and smoking 21%. EF by Biplane was 40.55±8.3%, E/A ratio 1.0±0.5, deceleration time 221.79±71.1m/s, E/E' 11.46±5.82, LV stiffness 0.18±0.1, MPI 0.63±0.2, and exercise capacity 3.69±1.8 METs. Among patients, there were strong correlation between EF by Biplane and exercise capacity (r = 0.507; p = 0.004) and moderate inverse correlation between MPI and functional capacity (r = -0.463; p = 0.007). There was no correlation between resting indices of diastolic function with functional capacity.

Conclusion: Left ventricle systolic and global function were correlated with functional capacity in post myocardial infarction patients with heart failure.

Keywords: left ventricle function, functional capacity, myocardial infarction, heart failure.

PP1.31. Correlation of Six Minute Walking Test Functional Capacity With Non Invasive Hemodynamic Performance In Heart failure

Kino, A Sahim, M Yanni, and M Syafr

Department of Cardiology and Vascular Medicine Faculty of Medicine, Andalas University/ Dr. M. Djamil General Hospital Padang, Indonesia

Abstract

Background: Heart failure is a complex clinical syndrome arising from or structural abnormalities and cardiac function. Impaired left ventricular function indirectly affect the functional capacity of the 6-minute walking test. Data showing the correlation of 6 minutes walking test functional capacity with no left ventricular function, so we need a study to assess and prove it.

Methods: This study is an analytic correlative with cross sectional design. Subjects were patients with diagnosis heart failure in Heart Center Installation of Dr. M. Djamil General Hospital Padang from March to April 2014. Patients with heart failure who meet the inclusion and exclusion criteria were taken consecutively performed 6-minute walking test examination and non-invasive hemodynamic performance immediately after the 6-minute walking test. Pearson correlation test was used to analyze the functional capacity correlation with left ventricular ejection fraction, stroke volume, cardiac output, cardiac index, and systemic vascular resistance.

Results: A total of 67 patients with heart failure, patients who met the inclusion and exclusion criteria are as many as 22 patients. Basic demographic data and showed that the mean age of study subjects was 58.36 years ± 8.37. Six minute walking test conducted on the subject showed that the mean distance of 6 minutes walking test was 328.09 ± 55.85 meters, with a mean of functional capacity was 5.70 ± 1.03 Mets. Bivariate analysis showed correlation results in left ventricular ejection fraction, stroke volume, cardiac output, cardiac index, and systemic vascular resistance to functional capacity of 6 minutes walking test was not statistically significant, with a

correlation coefficient of -0.368, respectively (p 0.092), 0.134 (p 0.552), -0.011 (p 0.962), -0.082 (p 0.718), and -0.054 (p 0.812).

Conclusions: There was no correlation of 6-minute walking test functional capacity with left ventricular ejection fraction, stroke volume, cardiac output, cardiac index, and systemic vascular resistance in heart failure.

Keywords: Functional Capacity of 6-minute walking test, left ventricular ejection fraction, stroke volume, cardiac output, cardiac index, systemic vascular resistance.

PP1.32. Radial and Ulnar Artery Diameters in Smoker and Nonsmoker Population

I Suhartono¹, B Budiono², JA Pangemanan¹, AL Panda¹, E Moeljono¹

¹ Cardiovascular Department,

Faculty of Medicine Sam Ratulangi University, Manado, Indonesia

² Cardiovascular Department, Awal Bros Makassar Hospital, Indonesia

Abstract

Background: Radial artery has been widely used as an alternative access site for cardiac catheterization and intervention. Ulnar artery was selectively used as another alternative approach.

Aim: To evaluate radial and ulnar artery diameters in smoker and nonsmoker population.

Subjects and methods: This was a retrospective study in which we measured the inner diameter of right radial and right ulnar artery by using radial and ulnar angiography on patients visiting our catheterization laboratory for either coronary diagnostic or therapeutic procedure from April 2013 to March 2014. 88 male patients who met the inclusion criteria were divided into smoker and nonsmoker group. Age, anthropometric data and coronary artery disease risk factors were collected from those patients.

Results: The mean right radial artery diameter was not significantly different between smoker and nonsmoker patients (2.04±0.46 vs 2.08±0.43, p 0.712). We also found no differences from the mean right ulnar and left main coronary artery diameters between smoker and nonsmoker group. We tried to compare those arteries of heavy smoker to nonsmoker group and found the same results.

Conclusion: We concluded that there were no differences in right radial, right ulnar and left main coronary arteries between smoker and nonsmoker group.

Keywords: Radial and ulnar artery, smoking, angiography, anthropometric data, coronary heart disease risk factors.

PP1.33. Knowledge, Attitude, and Practice of Healthcare Providers in Primary Health Care for Prevention and Management of Hypertension in Agam District, West Sumatra January 2015

Rissa Umy Setiani, Rini Istisakinah, Ruth Grace Aurora, and Teguh Kristian Perdamaian

Faculty of Medicine University of Indonesia, Jakarta, Indonesia

Abstract

Background: Poor-controlled hypertension can cause complications such as stroke and myocardial infarction. Severe complications associated with delayed diagnosis, which can be reduced by early detection and management, especially in primary health centre. The aim of this study is to explore the knowledge, attitude, and practice (KAP) of primary healthcare providers in hypertension prevention and management in Agam District.

Method: This study used a cross sectional design. Primary data is obtained by answering KAP questionnaire about hypertension. Acquired data then analyzed by descriptive approach to get the baseline characteristics, and then continued with univariate analysis to determine the relationship between the KAP outcomes with some demographic factors.

Result: Total respondents are 97 (= 36.07 y.o; 14.4 % men, 85.6% women), which are primary healthcare providers in Agam District PHCs. The length of this study is one month (January 2015). The respondents mainly occupations are midwife (60.8%) and nurse (29.9%). Most of respondents had Bachelor Degree (24.7%) and Diploma Degree (69.1 %). Data analysis shows that most of respondents have good knowledge, attitude and practice about hypertension (67%, 95.9% and 66%, respectively). Further analysis between the KAP and the level of education did not show any significant relationship (p> 0.05; Kruskal-Wallis).

Conclusions: This study shows that a large percentage of healthcare providers in Agam District have good knowledge, attitude and practice regarding hypertension. Further comparison study may be needed to address the impact of KAP in managing hypertension.

Keywords: Hypertension, KAP (Knowledge, Attitude and Practice), Agam District, Healthcare Provider.

PP2.10. Hydrothermal Non-Linear Waves Using Bekki-Nozaki Amplitude Holes Equation as A Clinical Non-Invasive Predictor For Interventricular Septum Wall Dysfunction Related to Cardiac Excitation

Ricardo Adrian Nugraha, M Jonatan M

AMSA Indonesia Research Study Group

Introduction: Interventricular septal wall motion abnormalities are frequently observed in patients with ischemic heart disease. Nevertheless, standard diagnostic, such as MRI and Echocardiography still remains invasive and expensive. For future, we are proposing using propagating non-linear mechanical waves produced by cardiac excitation.

Methods: Systematic review. Trials were searched in computerized general databases (PUBMED, SCIEDIRECT, etc) by searching keywords or check bibliographies.

Results: In a multivariate analysis, fibrous tissue and thickening of septal wall were associated with cardiac malformation. Compare to Doppler Techniques & 3D-Echocardiography, this methods (HNLW) had an odds ratio 1.28 (95%CI, 1.21-1.35) in detection early stage of interventricular septal wall dysfunction. Likewise, the sensitivity of HNLW in detection cardiac malformation is greater than contrast enhanced 3D-Eco, respectively 86% to 78% (p<0.05; 95%CI). Unfortunately, the specificity of HNLW is significantly lower than 3D-Eco with 90%:98%. Completely, the specificity and sensitivity of HNLW in detection ischemic heart disease in non-septal wall is 94% and 78% in anterior and antero-septal walls, and 99% and 47% in lateral wall.

Discussion: Bekki-Nozaki holes that we already observed aren't stable structures connecting two infinite phase winding solutions. The high accuracy of this tool can be understanding due to the sensitivity of the wave's velocity in the high temperature. The wave's velocity can easily decrease if they go through the fibrous tissue around the muscle-wall.

Conclusion: Hydrothermal non-linear wave is more accurate than echocardiography in detecting abnormal cardiac excitation and thickened septal muscle.

Keywords: Bekki-Nozaki Amplitude Holes, Cardiac Excitation, Nonlinear-Waves Equation.

PP2.11. The Role of Cardiac Magnetic Resonance (CMR) Imaging to Assess and Predict Improvement of Myocardial Function Following Percutaneous Coronary Intervention

A.A. SG. Mas Meiswaryasti Putra, Manoefris Kasim

Department of Cardiology and Vascular Medicine University of Indonesia-National Cardiac Centre Harapan Kita, Jakarta, Indonesia

Abstract

Background: Percutaneous coronary intervention (PCI) has become a mainstay in the treatment of patients with coronary artery disease (CAD). Although increasingly complex lesions and higher risk patients are being successfully treated percutaneously, restenosis and disease progression continue to cause significant morbidity. CMR is reliably identifies patients most at risk of a poor long-term outcome and offers some alluring possibilities for the evaluation of completeness of revascularization.

Methods: A summary of case records of a patient with stable CAD presenting to outpatient clinic NCC Harapan Kita and a review of available literature on the subject using electronic journal database for relevant literature search.

Results: A 60 years old male patient experienced recurrent chest pain. Patient with history of repeated ISR at proximal LAD and has done several PCI since 1999-2009. Imaging technique CMR was performed to evaluate myocardial function following PCI with results rest mild hypo perfusion at septal, anterior,lateral; stress inducible ischemia at septal, anterior, apex, lateral; scar tissue at septal with transmuralitly 20% and scar volume 8%;normal function of LV. It was eligible to revascularize at LAD and LCx territory. The chosen revascularization technique according in this patient was CABG due to history of repeated ISR after DES implantation in proximal-mid LAD.

Conclusion: Cardiac MRI sets good measurements for determination of myocardium viability and offers the promise of perhaps improved methods to predict the potential recovery of LV function with complete revascularization without extensive radiation exposure to the patient.

Keyword: Cardiac MRI, PCI, ISR, stable CAD.

PP2.12. Truncus Arteriosus Type III/A3: A Case Report

A. Ghofur¹, A. Utamayasa A², MA Rahman², T Ontoseno²

¹ *Department of Cardiology and Vascular Medicine*

² *Cardiology Division-Department of Pediatric Medicine, Airlangga University School of Medicine-Soetomo General Hospital, Surabaya, Indonesia*

Truncusarteriosus (TA) is an uncommon congenital cardiovascular anomaly that is characterized by a single arterial trunk overrides a large outlet ventricular septal defect (VSD).The pulmonary arteries originate from the common arterial trunk distal to the coronary arteries and proximalto the first brachiocephalic branch of the aortic arch. The TA classification by Collett and Edwards includes TA types I-IV. Van Praaghs classification scheme also includes 4 primary types.Prevalence approximately 1% of all congenital heart defects among live births,and type I-II of TA more common than type III-IV. The median age at death without surgery was 2 weeks to 3 months, with almost 100% mortality by age 1 year.Surgical management consists of complete repair with closure of VSD. Surgical palliation by banding of the pulmonary artery rarely used today. We report the case of a 3-year-old woman patient with a subtype of Collet and Edwards type III or type A3 of Van Praaghs,who survive beyond

first year of life.The origin of left branch pulmonary artery arise from the common trunk, with pulmonary blood supply to the right lung provided by a systemic to pulmonary arterial collateral. Surgical palliation by banding of the left pulmonary artery was a used strategy due to the consideration of anatomical and surgical technique difficulties.

Keywords: Truncus Arteriosus.

PP2.13. The Heart Stopping Tick After Fire Attack: A Case Report, Focus on Etiology

A. Ghofur dan I Gde Rurus Suryawan

Departement of Cardiology and Vascular Medicine, Airlangga University School of Medicine-Soetomo General Hospital, Surabaya, Indonesia

Total atrioventricular block (TAVB), a disorder of the cardiac conduction system in which atrioventricular conduction is completely absent. This is a relatively rare disorder and can cause potentially serious problem. The likely underlying causes include fibrous replacement tissue in the conduction pathway, electrolite abnormalities, some medications and inflamatory processes. Burn injury is a complex traumatic event with various local and systemic effects, affecting several organ systems beyond the skin. The pathophysiology of the burn patient shows the full spectrum of the complexity of inflammatory response reactions. In the acute phase, inflammation mechanism may have negative effects because of capillary leak, the propagation of inhalation injury and the development of multiple organ failure. We report here on a 45- year-old man, who was admitted to dr Soetomo hospital with the diagnose Combustio Gr II AB 41.5%. Electrocardiogram showed TAVB with the heart rate of 42 beats/min. TAVB might be associated with various inflammatory condition, but the exact mechanism by which the burning process causes conduction disturbance still unknown.

Keywords: Burn injury, TAVB.

PP2.14. A 51 Years Old Man with Left Atrial Myxoma That Obstruct Mitral Outflow During Diastole : A Case Report

Teuku Fauzan Atsari, Anggia C, Nizam Z, Zulfikri M, Afif S

Department of Cardiology and Vascular Medicine, Faculty of Medicine, University of Sumatera Utara / Haji Adam Malik Hospital, Medan, Indonesia

Primary tumours of the heart are rare across all age groups, with a reported prevalance of 0.001% to 0.03%. About 75% of all primary cardiac tumors are regarded as benign neoplasms, cardiac myxoma accounts for at least half of them. Cardiac myxoma most commonly occurs in the left atrium, Recent meta-analysis showed that 83% of cardiac myxomas occur in the left atrium.

We report a case of an Indonesian man with symptoms of breathlessness and history of stroke. Physical examination showed rales over bases of both lungs. The ECG showed sinus rhytm and atrial extra systole. The CXR showed cardiomegaly and bulging on the pulmonary artery segment. Transthoracal Echocardiography demonstrate a mobile mass within left atrium with size 3.97 x 3.9 cm that attach to interatrial septum that obstruct mitral outflow during diastole. The surgery was performed as soon as the diagnosis was made and histopathologic examination revealed cardiac myxoma. The condition post operation was stable and allowed for discharged.

The treatment of symptomatic cardiac myxoma is prompt surgical

resection of the tumor. Surgery must be performed as soon as the diagnosis was made considering the possibility of embolisation and sudden death.

Keywords: LA Myxoma, Cardiac Myxoma, Mitral Outflow.

PP2.15. The Role of Cardiac Magnetic Resonance Assessing Viability in Patient with Chronic Heart Failure due to Coronary Artery Disease

Yogi PR¹, Safir¹, Manoefris Kasim²

¹ Resident of Cardiology and Cardiovascular Medicine,

Department of Cardiology and Vascular Medicine, Faculty of Medicine Diponegoro University, Dr. Kariadi General Hospital Semarang, Indonesia

² Division of Non Invasive and Imaging, National Cardiac Center Harapan Kita Jakarta, Indonesia

Cardiac magnetic resonance (CMR) has the unique ability to evaluate several markers of myocardial viability that are of proven value. Reliable and accurate assessment of myocardial scar burden, coronary perfusion, and contractile reserve by CMR are all becoming well established.

We reported a woman 50 years old that underwent CMR to assess myocardial viability. She had a history of recent acute coronary syndrome, prior coronary intervention 1 stent in LCx and 1 stent in RCA with total occlusion in LAD, poor LV function (ejection fraction 22%) and good RV function. CMR result showed there was scar tissue at septal and anteroseptal with transmural 75% and scar volume 20%, scar tissue at inferolateral with transmural 30% and scar volume 8% and late MVO at anteroseptal from mid to base. We gave suggestion to revascularize at LCx and RCA. Schwitzer and Arai reported that scar transmural more than 50% will make recovery myocardial segment only 10%, and scar transmural less than 25% improve myocardial segment until 80%.

Keywords: Cardiac magnetic resonance, viability, scar transmural

PP2.16. Role of Cardiac CT Examination in the Diagnosis of Type I Persistent Truncus Arteriosus: A Case Report

TM Haykal, Ganesja M Harimurti, Oktavia Lilyasari, Poppy S Roebiono

Department of Cardiology and Vascular Medicine, Faculty of Medicine, Universitas Indonesia

National Cardiovascular Center Harapan Kita, Jakarta, Indonesia

Over 80% infants with truncus arteriosus die within the first year of life without treatment because uncorrected persistent truncus arteriosus worsens over time. The patient who survive beyond the first year are going to have progressive pulmonary vascular obstructive disease. This implies that early diagnosis and detailed identification over cardiovascular structural anomaly is important. Reviewing cardiac CT examination in a case of type I persistent truncus arteriosus.

A 3 months old male baby presented with signs and symptoms of congestive heart failure and increased pulmonary blood flow. Echocardiography examination confirmed the diagnosis of type I persistent truncus arteriosus. However, due to suspected anomaly of the left pulmonary artery based on chest X-ray and echocardiography examination, an additional examination was needed. Cardiac CT examination was performed and there was no anomaly in pulmonary artery.

Cardiac CT examination is better than echocardiography in

visualizing pulmonary artery and its branches. Cardiac CT examination was preferred over catheterization because it is less-invasive. Cardiac CT examination is a useful diagnostic tool in the diagnosis of persistent truncus arteriosus for detailed identification of structural abnormality.

Keywords: Truncus Arteriosus, diagnostic evaluation, Cardiac CT examination.

PP2.17. Uncorrected Tetralogy Of Fallot in 20 Years Old Woman With Pregnancy

Titus Kurnia Hariadi TK, S Multazam, A Syukri, J Pattimang, and P Tandean

Departement of Cardiology and Vascular Medicine, Faculty of Medicine Hasanuddin University, Makassar

Pregnancy in patient with uncorrected TOF is rare and is associated with high rate of maternal morbidity (62,5%) and mortality (10%), also have significant effects on fetal outcome .

A 20-year old woman, G1P0 with uncorrected Tetralogy of Fallot presented at 26 weeks gestation with history of syncope and cyanotic. The patient experienced three times syncope during pregnancy especially when patient doing heavy work activity. Syncope last for 5-10 minute. Patient also had history of breathlessness on moderate activity. Peripheral cyanotic experienced since birth especially when the patient cried.

Patient had underweight nutritional status with BP 100/70 mmHg, HR 110x/min, RR 26x/min, resting oxygen saturation was low 85 %, normal heart sound with grade 3/6 ejection systolic murmur at Inter Costal Space II, and Left Lower Sternal Border radiated to Right Sternal Border, patient had Clubbing finger. Electrocardiogram shows Sinus Tachycardia HR 110 bpm, RAD, ICRBBB. The Echocardiogram shows Situs Solitus, RV Hypertrophy, Big sub Aortic VSD with bidirectional shunt, Overriding Aorta 50%, Small PDA 0.3 cm, TR severe, PS moderate-severe, LVEF 61%. The decision made from Obstetric and Cardiology division were to continue pregnancy until 32 week gestation with observation. After two month, patient underwent successful caesarean delivery. The baby was survive with small for gestational age

Uncorrected Tetralogy of Fallot in pregnant 20 years old woman had been reported. Good outcome can be achieved with adequate care from intensive multidisciplinary management. The decision was made to continue pregnancy until 32 weeks gestation. Two month after, patient underwent successful caesarean delivery.

Keywords: Uncorrected Tetralogy of Fallot, Pregnancy

PP2.18. Conjoined Twin with Single Heart, Single Atrium: A Case Report

Suryawati, Eka Guna Wijaya

Cardiology Pediatric Division, Department of Cardiology and Vascular medicine, Medical Faculty of Udayana University, Sanglah Hospital, Denpasar, Bali, Indonesia

The incidence of conjoined twin ranging from one in 50.000 to one in 200.000, which accounts for 1% of monozygotic twin pregnancies. Twins are classified according to the major site of union. Thoracopagus twins are the most common type, accounting for 40% of cases, followed by omphalopagus, in this case is thoracoomphalopagus with cardiac anomaly group C: fused atrium, separated ventricle.^(1,2,3)

We reported a case of new born conjoined twin thoracocephalic baby with cardiac congenital anomaly, single heart, single atrium, separated ventricle, tiny apical VSD. Baby 1: Pulmonary atresia, moderate vertical duct, moderate atrioventricular regurgitation. Baby 2: Mild valvular pulmonary stenosis, small vertical duct, mild atrioventricular regurgitation. Patient can not be separated. Treatment conservative with fluid and nutrition and oxygenated using CPAP.

In our case, cardiac anomaly is group C: fused atria and separated ventricle. The deoxygenated blood from right sided and left sided vena cava through fused atria then flow crossing atrioventricular valve entered ventricle. There is pulmonary atresia in the 1st baby. Deoxygenated blood from left ventricle flow through aorta to the systemic (baby 1) and crossing to right ventricle via tiny ventricular septal defect. At the second baby, deoxygenated blood from right ventricle through stenosis pulmonary artery to the lung then via pulmonary vein to fused atrium. Mixing blood is flow through aorta to the systemic circulation.

This rare anomaly within conjoined twin single heart, single atrium, separated ventricle. It can not be separated. The therapy is conservative to maintain haemodynamic and oxygenation using CPAP without high fraction of oxygen flow.

Keywords: Conjoined twin, single heart single atrium separated ventricle.

PP2.19. Dextrocardia with Situs Inversus and Multiple Congenital Cardiac Abnormalities in a 31-Year-Old Man: A Case Report

Steven Alviano Yuwono¹, K Marwali², ANM Wibowo¹,
D Hadi¹, WJP Harry¹, H Lim², Antonia Anna Lukito³

¹ Faculty of Medicine, Universitas Pelita Harapan, Tangerang, Indonesia

² Siloam General Hospital, Lippo Village, Tangerang, Indonesia

³ Faculty of Medicine, Universitas Pelita Harapan, Tangerang, Indonesia;
Siloam General Hospital, Lippo Village, Tangerang, Indonesia

Dextrocardia with situs inversus totalis is an uncommon condition characterized by heart facing to the right and mirrored all visceral organs with incidence 1:12,000 childbirth. Among those, only 3-5% cases are accompanied with congenital heart disease and it is rarely multiple cardiac abnormalities.

31-year-old male presented to emergency department with abdominal pain for the past two months, a month history of diarrhea along with shortness of breathes. He was previously healthy, birth history was unremarkable and never been diagnosed with cardiac abnormalities. Examination showed respiratory rate 29 times/minute, heart rate 113 beats/minute, central cyanosis, increased JVP, clubbing fingers, peripheral edema and grade 3/6 pansystolic murmur best heard at right lateral sternal border, SpO₂ 65%. Hemoglobin of 11.77g/dl, low hematocrit of 35.4% and low erythrocyte of 3.72 10⁶/μL. Electrocardiography showed feature of dextrocardia, predominantly negative P wave in lead I and positive in lead aVR (Fig. 1).

Further diagnostic studies were done. Chest X-ray showed dextrocardia. Echocardiography results revealed dextrocardia with right-sided cardiac apex, 3cm ventricular septal defect, overriding aorta, right ventricular hypertrophy, tricuspid regurgitation and right to left shunt. Abdominal ultrasound confirmed situs inversus with right-sided spleen and left-sided liver.

Patient was undetected for complex congenital abnormalities reaching adulthood without receiving any surgical or medical correction. Early detection for congenital heart disease is important to prevent worsening progression of the disease and to increase quality of life for people with congenital heart disease.

Keywords: dextrocardia, situs inversus, adult, congenital heart disease.

PP2.20. Balloon Dilatation and Stenting in Treating Left Pulmonary Artery Stenosis Following Surgical Repair in Complex Congenital Heart Disease: A Case Report

Sisca Natalia, Poppy S. Roebiono, Indriwanto Sakidjan,
Oktavia Lilyasari, and Ganesja M. Harimurti

Department of Cardiology and Vascular Medicine,
Faculty of Medicine Universitas Indonesia
National Cardiovascular Center Harapan Kita, Jakarta

Left pulmonary artery (LPA) stenosis is categorized as branch peripheral pulmonary stenosis. This significant stenosis may cause a general reduction in pulmonary blood flow or unbalanced distribution to the two lungs, increased right pulmonary artery (RPA) and vena cava pressures, and potential failure of univentricular surgical repair in complex cyanotic congenital heart disease (CHD) patients. Repair of the obstruction should be performed by surgical patch enlargement or percutaneous transluminal angioplasty using balloon expandable stent to enlarge the narrowed areas.

We present our first experience of balloon dilatation and stenting in a patient with refractory residual LPA stenosis following surgical repair of the bifurcation pulmonary stenosis.

An 8 year old boy was diagnosed as pulmonary atresia, double inlet left ventricle, large muscular ventricular septal defect, patent ductus arteriosus (PDA), and small size confluent pulmonary arteries with bifurcation stenosis at 1 year of age. He underwent right Blalock-Taussig (BT) shunt to enlarge the pulmonary arteries, which then followed by a bidirectional cavo-pulmonary shunt, PDA and BT shunt ligation, and pulmonary artery bifurcation repair at 3 years old. Due to significant residual proximal LPA stenosis found on cardiac catheterization study preparation for Fontan operation 2 years later, another surgical patch repair of the branch pulmonary artery stenosis was done. Yet, this proximal LPA stenosis was still existed on evaluation a year after. The pulmonary arteriography revealed the diameter of RPA 10 mm, and precisely the location of the LPA stenosis with diameter of 4 mm at proximal and 8 mm at distal. Balloon dilatation and LPA stenting was then performed through the right jugular vein. We use high pressure balloon expandable stent (OTW omnilik elite stent) size 10mm x 19mm to enlarge the obstruction. Once the stent had been correctly positioned the balloon was inflated to deliver the stent over the stenosis in the vessel without complication. Post intervention pulmonary arteriography showed no significant residual stenosis with good flow to LPA branches. The diameter of proximal LPA became 8 mm with distal 8 mm, and RPA 10 mm. The patient was discharged in a good condition awaiting for Fontan operation.

The placement of stents to relieve LPA stenosis for good outcome of univentricular surgical repair in complex cyanotic CHD is feasible, safe and effective. For this reason, we expect that in the future percutaneous balloon dilatation and stenting will be the alternative mode of management for branch pulmonary artery stenosis at our center.

Keywords: left pulmonary artery stenosis, balloon expandable stent.

PP2.21. Tetralogy of Fallot with Subarachnoid Hemorrhage and Cerebral Infarction: A Case Report

S Indriani, AA Nursidqi, P Wulandari, R Myrtha,
MT Nugraha, and Subandi

Departement of Cardiology and
Vascular Medicine Sebelas Maret University/
Dr Moewardi Hospital, Surakarta, Indonesia

Tetralogy of Fallot (TOF) is the most common form of cyanotic congenital heart disease, with overall incidence accounting for 10% of all congenital heart disease. Patient with grown-up cyanotic congenital heart disease are at increased risk of thromboembolic cerebrovascular event.

A 19-years- old female patient with uncorrected Tetralogy of Fallot was hospitalized due to weakness of the right upper and lower limbs, unable to talk and history of unconsciousness. General examination revealed an asthenic plethoric patient, centrally cyanosed with grade 4 digital clubbing, pulse was regular with a rate of 80 bpm, blood pressure was 100/70 mmHg. On the examination of the precordium, the apex was not displaced, the S2 was single, the systolic ejection murmur was heard in left sternal border. The lungs were clear. Chest radiograph showed an enlarged boot shape heart with pulmonary oligemia. A MSCT scan revealed large subarachnoid hemorrhage and left middle cerebral artery territory infarct.

Long standing cyanotic lesions can cause polycythemia which increase the risk of thromboembolism and cerebral infarction. But the association between TOF and subarachnoid hemorrhagic are unknown. This report highlights the necessity for physicians to be alert for uncommon acute stroke.

PP2.22. Complete Dissolution of Large Atrial Thrombus. Potential Role of The Emerging Oral Fibrinolytic Agent?

Rony Mario Candrasatria¹, Manoeffris Kasim²

¹ Resident of Cardiology and Vascular Medicine, Faculty of Medicine University of Indonesia, and National Cardiovascular Center Harapan Kita.

² Department of Cardiology and Vascular Medicine, University of Indonesia and National Cardiovascular Center Harapan Kita.

The searching for ideal fibrinolytic agents that has characteristics of fibrin specific activity, easy administration, and low bleeding adverse effect continues until present. Increasing evidence showed a promising efficacy and safety of oral lumbrokinase as a fibrinolytic agent. To the best of our knowledge, no report of the adjunctive use of lumbrokinase on atrial thrombus is available. We report a case of 32 years old male with severe mitral stenosis, atrial fibrillation, and history of ischemic stroke. Patient had received warfarin previously for the prevention of stroke. A thrombus of approximately 8 cm² was found in trans-thoracic echocardiography. Lumbrokinase was added into therapy. After one month treatment, echocardiography showed reduced thrombus into approximately 3.8 cm². Upon follow up in second month, the thrombus was no longer found without any spontaneous echo contrast. Clinically, there was no significant adverse effects. In conclusion, the use of lumbrokinase as an adjunctive therapy may play a potential role in atrial thrombus management. Larger clinical trial is advised to confirm the efficacy.

Keywords: atrial thrombus, oral fibrinolytic agent, lumbrokinase.

PP2.23. Rupture of Right Sinus Valsava Aneurysms in Adolescent: A Case Report.

Risalina Myrtha¹, Savithri Indriani¹, Laurent F. Yuwono¹, Heru Sulastomo¹, Niniek Purwaningtyas¹, Sri Lilijanti Widjaja²

¹ Department of Cardiology and Vascular Medicine

² Division of Pediatric Cardiology, Department of Child Health.,

Faculty of Medicine, Universitas Sebelas Maret, Dr Moewardi General Hospital, Surakarta, Indonesia.

Sinus of Valsalva aneurysms (SVA) are extremely rare cardiac anomalies that may be acquired or congenital. Aneurysms usually remain asymptomatic unless they are complicated by rupture.

To report a case of ruptured right SVA in adolescent.

A 10-years-old boy was referred to Moewardi General Hospital because of dyspnea and undocumented paroxysmal supraventricular tachycardia. Before hospitalized, he felt progressive worsening dyspnea. He had history of similar breathlessness since a year before. He did not take any medication regularly. Blood pressure was 100/60 mmHg, tachycardia. There was to-and-fro murmur grade 4/6 at third and fourth intercostal space left parasternal line. There was no sign of congestion. The ECG was sinus rhythm 72 bpm, normoaxis, and left ventricular hypertrophy (LVH). The laboratory finding was normal. Chest x-ray (CXR) showed cardiomegaly. Echocardiography showed LV dilatation, rupture of the right SVA into right ventricle, moderate pulmonic and aortic regurgitation. The diagnosis was rupture of the right SVA. Patient was referred for rupture of SVA repair.

Symptoms occur in 80% of patients, most commonly between 30 and 45 years of age. SVA ruptures in 35%, leading to acute symptoms in one fourth of the patients. The age at presentation determines the severity of symptoms. Sudden onset of acute dyspnea might be due to a ruptured SVA. From the case above, symptoms occurred in earlier age. The optimal management is surgical repair. The mean survival in patients with an untreated ruptured SVA is about four years.

Keywords: ruptured right sinus valsava aneurysms, adolescent.

PP2.24. Role of Echocardiography to Diagnosis of an Aorto-Right Atrial Fistulization

Rina Mawarti, Agus Subagio

Department of Cardiology And Vascular Medicine , Dr. Soetomo General Hospital/Medical Faculty Airlangga University, Surabaya, Indonesia

The Aorto-right atrial fistulization (ARAF) lies in a group of abnormal vascular connections of the aorta named aortocameral fistulas. This is relatively rare but important pathophysiologic conditions with varied clinical presentations.

A 20-year-old man, was referred to dr Soetomo hospital because of congestive heart failure since 6 months before, 2 weeks ago progressively worsening. Using two-dimensional and Color Doppler Trans Thoracic Echocardiography (TTE) and TEE pre operative demonstrated continues flow from aorta to RA, severe RA and RV enlargement. An aneurismal rupture sinus Valsalva into RA has been diagnosed. On the basis of the echocardiographic findings, urgency surgical intervention done to helpful in relieving symptoms. At surgery, we found the patient had an ARAF. The aortic valve was thin with severe regurgitation. There were no abnormalities on the aortic root or the ascending aorta. The patient underwent successful closure of ARAF and replacement of the prosthetic aortic valve. Follow-up outpatient clinic, 12 mounts , the patient was doing well.

TTE can be used as an early detection tool to recognize of a communication between the aorta and the RA include ARAF. In this case, such a condition might be mistaken for an aneurismal rupture sinus Valsalva, with use of TTE alone. TEE is useful noninvasive method to further define or confirm the diagnosis.

PP2.25. Case Report: Medical and Ethical Considerations in Pregnancy with Severe Mitral Stenosis

Rima Rinanty and Prihati Pujowaskito

Department of Cardiology and Vascular Medicine of Dustira Military Hospital, Cimahi, Indonesia

A 37 year old multiparae on her 33 weeks of gestation was admitted into the ER with chief complaint of shortness of breath since 3 days before admission. She was diagnosed with severe mitral stenosis (MS) 9 months before admission, Her Echocardiography revealed severe MS with MVA 0.63cm², aortic regurgitation, tricuspid regurgitation with myopathy state EF : 36 %. Three weeks prior to admission she went to our clinic complained about shortness of breath, but she refused to be hospitalized. Her blood pressure at the time of presentation was undetectable, Heart rate : 200x/m, Respiration 35x/m, oxygen saturation 96%. Laboratory results were within normal limit. The electrocardiogram showed rapid atrial fibrillation. She was diagnosed with severe mitral stenosis, acute pulmonary edema and cardiogenic shock and planned to do Cardioversion but she and the baby died.

Severe MS with significant symptoms is associated with increased maternal and neonatal mortality. Maternal mortality risk is between 0 and 3%. Prematurity rates are 20-30%, intrauterine growth retardation 5-2- % and still birth 1-3%. All patients with moderate or severe MS (even asymptomatic) should be counseled against pregnancy and intervention should be performed pre pregnancy, favouring percutaneous interventions.

There is still no evidence base for specific recommendations, the option must be offered to the patient for further consideration. There are several factors that cause her death including a strong sense to maintain her pregnancy remembering her prior pregnancy came out fine, her gestational weeks already approaching term and there is still lack of acceptability of therapeutic abortion in our society especially when it associated with religion. This patient came to our clinic three weeks ago from Obsgyn department consulted because of her shortness of breath, there was no indication from their department to terminate her pregnancy although we declared her pregnancy as a high risk. She refused to be hospitalized.

Pregnancy termination is a difficult medical and ethical issue that arises most often in the care of patients with NYHA class III-IV. These are complex issues requiring constant communication and discussion. Thus every women of childbearing age are strictly to do pre pregnancy or even pre marital consulting especially for those who already diagnosed with cardiovascular disease.

PP2.26. Hypertrophic Cardiomyopathy in Neonate with Secundum Atrial Septal Defect, and Respiratory Distress of Newborn

Magma Purnawan Putra¹, S Hendyanto¹,
Jamaluddin¹, B Iskandar², Alasiry, E²

¹ Department of Cardiology and Vascular Medicine,

Faculty of Medicine Hasanuddin University, Makassar, Indonesia

² Department of Pediatric, Faculty of Medicine Hasanuddin University,
Makassar, Indonesia

Hypertrophic cardiomyopathy is a type of cardiomyopathy, usually autosomal dominant familial disorder of hypertrophic heart muscle. HCM occurs at a rate 5/1million children.

A full term neonate was born by sectio caesarea (SC) due to previous SC and diabetic mother. Then, he was referred to NICU Wahidin Hospital with diagnose Respiratory Distress and Hypoglycemia. The mother had antenatal care routinely and took insulin. The baby was consulted to cardiology subdivision because murmur was founded, also to exclude the causes of tachypneu.

The neonate was 3.4kg weight and 46cm length. HR 144/min, afebris, tachypneu with respiratory distress, no cyanosis, crackles, normal heart sounds with grade 3/6 ejection systolic murmur at the middle-lower left sternal borders. There was no cardiomegaly

in chest x-ray. The Echocardiogram shows asymmetrical LV hypertrophy IVSd 12.8mm, LVPWd 6.2mm, normal ventricle cavity, LVEF 84%, diastolic dysfunction, and LVOT peak gradient 12.8mmHg without SAM, and small secundum ASD. We gave no cardiology intervention to this patient, because the current signs and symptoms indicated the main problem wasn't in the heart. Until the 11th day the patient was getting better, even now he doesn't need ventilator support, and his oxygen saturation is 98% in room air without signs of respiratory distress.

HCM in neonates with secundum ASD had been reported. He had respiratory distress of newborn, until the 11th day in NICU the patient was getting better without cardiology intervention.

PP2.27. Management of Intracranial Hemorrhage in Patients with Valvular Heart Replacement Surgery: Case Series

LD Pradipta¹, AA Lukito²

^{1,2} Heart Center, Siloam Hospitals Lippo Village, Tangerang, Indonesia

Intracranial hemorrhage is uncommon following open-heart surgery.^{1,2} Anticoagulation therapy is associated with a high risk of bleeding but in the absence of antithrombotic treatment, patients with mechanical heart valves are exposed to a very high thromboembolic risk. The reported absolute risk of intracranial with anticoagulation is 0.3% to 1.0% per year and the associated mortality is about 60%. However there are no clear guidelines on emergency treatment of anticoagulant-related intracranial hemorrhage in patients with mechanical heart valve.^{1,2,3}

First case is a 75 y.o. male referred to our hospital presented with one day motoric aphasia. He had aortic valve replacement six days prior. The laboratory revealed his INR was 6. MRI brain non-contrast showed right temporo-parieto-occipital subdural hematoma without midline shift.

Second case is a 49 y.o. male suddenly complaint about left sided hemiparesis after mitral valve replacement surgery 2 days prior. The laboratory revealed his aPTT was 114 seconds which was more than 3 times from patient's control. CT brain revealed intracerebral hemorrhage in right frontal lobe without midline shift.

Those patients got warfarin with INR target approximately 1.5, neither thrombosis nor recurrent bleeding occurred, while conservative management was taken for the intracranial hemorrhage. Repeat cranial CT revealed absorbed hemorrhage and they were discharged after few days later.

Patients with intracranial hemorrhage after heart valve replacement without midline shift can be managed conservatively by tailoring anticoagulant therapy based on daily INR.

PP2.28. Brugada Syndrome: An Abandoned Cause of Syncope – A Case Report

Leo Dedy Pradipta¹, I Pardede²

Heart Center, Siloam Hospitals Lippo Village, Tangerang, Indonesia

Brugada syndrome is an autosomal dominant inherited arrhythmic cardiac disorder characterized by ST elevation with successive negative T wave in the right precordial leads without structural cardiac abnormalities. It can be potentially lethal and eminently treatable entity that may present with palpitations or syncope. Most have benign conditions and a favourable prognosis, however, those with a cardiac cause of syncope have one year mortality rates between 18% and 33%, substantially higher than the 0%–12% for

non-cardiogenic syncope and 6% for unexplained syncope. A 40-year-old female was in her usual state of health when she suddenly collapsed while sitting in the car. After few minutes later she woke up and then brought to our hospital but did not feel any complaint after that occasion. No family history of either cardiac disease or sudden death. In admission, she was somnolent, vital sign was normal, and no abnormalities found in physical examination. A 12-lead electrocardiography showed characteristic high take-off ST segment elevation followed by a positive T-wave that form saddle back configuration in V2. Laboratory, chest X-ray, CT brain non-contrast, and echocardiography were normal. She was diagnosed as Brugada syndrome type 2, then admitted to intensive room and got intravenous amiodarone. She was discharged after her condition more stable and referred to have electrophysiology study to further evaluation. Brugada syndrome can be considered as the cause of syncope. The diagnosis via electrocardiography is of great importance in preventing adverse events and stratifying risk.

PP2.29. Pregnancy and Childbirth Successfully in Woman 23 Year Old Female with Tetralogy of Fallot and Pulmonary Atresia: A Case Report

HW Parlindungan¹, SM Silaban¹, Abdullah Afif Siregar¹, R Tala²

¹ Department of Cardiology and Vascular Medicine

² Department Obstetric and Gynecologic, Faculty of Medicine, University of Sumatera Utara, Adam Malik Hospital, Medan, Indonesia

Tetralogy of Fallot with pulmonary atresia (TOF-PA), is one of the most complex forms of TOF. It is also known as complex pulmonary atresia when major aortopulmonary collateral arteries (MAPCAs) are present. Patients with TOF-PA pose a formidable management and therapeutic challenge, especially in pregnancy. Pregnancy in woman with TOF-PA has high risk for both mother and fetus, like maternal cardiac complications, premature birth, and spontaneous abortion.

We reported the case of a 23 years old pregnant woman who previously diagnosed with TOF, pulmonary atresia, and MAPCAs since she was 1 year old. She had pregnancy, and got heart failure with NYHA functional class II-III during pregnancy. She got regular medication such as furosemide, digoxin, and spironolactone. From obstetrician follow up showed no fetal growth anomaly. At 35th week of gestation, lung maturation of fetal was established and then the patient was planned to undergo a cesarian section (SC). The CS operation was successfully and a male baby was born with 7/9 APGAR score and 1580 gr body weight. After 5 months, the baby condition had improved, but the baby actually had an atrial septal defect (ASD).

Pregnancy in cyanotic congenital heart disease are classified as high risk condition for both mother and fetus. The integrated care by cardiologist and obstetrician throughout the pregnancy, delivery, and postpartum period, and good compliance from the patient, can be reduced the risk for both mother and child.

Keywords: Pregnancy, Labor, Tetralogy of Fallot, Pulmonary Atresia, MAPCAs.

PP2.30. Successful First Labor of a 23 Year Old Female with Tetralogy of Fallot and Pulmonary Atresia: A Case Report

HW Parlindungan, SM Silaban, Abdullah Afif Siregar, Zulfikri Mukhtar, NZ Akbar

Department of Cardiology and Vascular Medicine,
Faculty of Medicine of North Sumatera University,
Haji Adam Malik General Hospital, Medan, Indonesia

Tetralogy of Fallot with pulmonary atresia (TOF-PA), is one of the most complex forms of TOF. It is also known as complex pulmonary atresia when major aortopulmonary collateral arteries (MAPCAs) are present. Patients with TOF-PA pose a formidable management and therapeutic challenge, especially in pregnancy. It has been suggested that pregnancy in patients with congenital heart disease has high risk for both mother and fetus, like maternal cardiac complications, premature birth, and spontaneous abortion.

We reported the case of a 23 years old pregnant woman who previously diagnosed with TOF, pulmonary atresia, and MAPCAs since 1 year old life. During pregnancy, the patient was categorized with NYHA functional class II and got regular medication such as furosemide, digoxin, and spironolactone. From obstetrician follow up showed no fetal growth anomaly. At 35th week gestation, lung maturation of fetal was performed and then the patient was planned to undergo a cesarian section. The operation was success and a male baby was born with 7/9 APGAR score and 1580 gr body weight. After 5 months, the patient had improved in condition, but the baby actually had an atrial septal defect (ASD).

Pregnancy in cyanotic congenital heart disease are classified as high risk condition for both mother and fetus. But by careful and integrated care by the experienced cardiologist and obstetrician throughout the pregnancy, delivery, and postpartum period, and good compliance from the patient, the risk can be reduced and both mother and child was able to survive.

Keywords: Pregnancy, Labor, Tetralogy of Fallot, Pulmonary Atresia, MAPCAs.

PP2.31. Progeria Syndrome with Mitral Regurgitation

Herlina Dimiati

Pediatric Cardiology Division, Child Health Department,
Faculty of Medicine, Syiah Kuala University,
Dr. Zaenael Abidin Hospital, Banda Aceh, Indonesia

Progeria is a rare combination of dwarfism and premature aging. The incidence is one in several million births. It occurs sporadically and is probably an autosomal recessive syndrome. We present a rare case of progeria with Mitral regurgitation.

A 15-year-old girl child presented with failure to thrive and inability to squat for the past three to four years and she had not attained menarche, developed areata alopecia over the past two years. The perinatal history was uneventful. She was apparently normal till five year of age when the parents started noticing the above features. She had normal intelligence. No family history of similar complaints could be elicited. General examination revealed the child to be of short stature and malnourished. Eyes appeared prominent with hypoplastic chin. Micrognathia, the finger nails were thin and brittle, absent secondary sexual characteristics. Systolic murmur was audible at the mitral area. ECG revealed LVH with strain pattern, while echocardiography showed mitral regurgitation. Based on the history and clinical findings a provisional diagnosis of progeria and mitral regurgitation was made.

Keywords: dwarfism, progeria, Mitral regurgitation..

PP2.32. Tetralogy of Fallot; Embryologic Development and Clinical Spectrum, A Case Report

Haris Munirwan¹, Ganesja M Harimurti¹

¹Department of Cardiology and Vascular Medicine,
Faculty of Medicine, University of Indonesia
National Cardiovascular Center Harapan Kita, Jakarta, Indonesia

Tetralogy of Fallot (TOF) is the most common cyanotic congenital heart disease. Clinical manifestations depend on the degree of obstruction of the right ventricular outflow track and the extent of interventricular defect. This article compares two cases of TOF. First patient came with clinical manifestation of cyanotic that compared to the second patient with no cyanotic. Physical examination revealed no marked differences except cyanotic symptoms in first case. Supportive examination revealed significant differences in both of ECG and CXR. Echocardiography showed marked anatomical differences in those cases which was the shunt that pass through the gap of interventricular septum. Left to right shunt in second case caused biventricular hypertrophy and sufficient blood flow to the pulmonary which explained why the second patient came with no symptom. Understanding embryologic development and clinical spectrum of TOF is important to be able to treat the disease with proper management.

Keywords: Tetralogy of Fallot, anatomical differences, clinical manifestation, diagnostic approach.

PP2.33. Association of Echocardiography Parameters in Mitral Stenosis Patients with Atrial Fibrillation and Sinus Rhythm

David Ramli, Y Karani, Kino, C Wijaya, I Mahendra,
W Erlanda, M Syafri

Department of Cardiology and Vascular Medicine Faculty of Medicine
Andalas University / Dr. M. Djamil General Hospital, Padang, Indonesia

Abstract

Background: Mitral stenosis is one of the causes of atrial fibrillation. There are several factors that underlie the occurrence of atrial fibrillation in mitral stenosis. Mitral stenosis affects the diameter of the left atrium. Dilatation of the left atrium is one of the factors that cause atrial fibrillation. Atrial fibrillation can influence echocardiography finding in mitral stenosis patient. The aim of this study was to compare the characteristics of mitral stenosis patients with atrial fibrillation and sinus rhythm.

Method: We examined 56 patients mitral stenosis with atrial fibrillation and sinus rhythm. The study was a comparative analysis study with cross sectional design. All patients with mitral stenosis who underwent echocardiography from January to December 2014 in Cardiovascular Non Invasive Diagnostic Division of Dr. M. Djamil General Hospital Padang were included in this study. The results were analysed using SPSS to determine the association between echocardiography parameters in patients with mitral stenosis with atrial fibrillation and sinus rhythm.

Results: From 56 patients included in this study, atrial fibrillation present in 28 (50%) patients. The mean age was 49.93 ± 15.69 years old with 56.4% were women. Based on echocardiography parameters, the average value MVQE was 1.03 ± 0.65 with the average value of planimetry and MV PHT were 1.19 ± 0.61 and 1.29 ± 1.00 , respectively. The average value of mean pressure gradient was 9.90 ± 4.63 with the average value of Wilkins score and left atrial diameter were 8.6 ± 2.36 and 52.28 ± 13.95 , respectively. The mean value of ejection fraction was 49.39 ± 16.68 and mean MPAP was 35.85 ± 9.35 . Using statistical analysis, we found that reduced ejection fraction and increased mean pulmonary arterial pressure were significantly associated with occurrence of atrial fibrillation in mitral stenosis ($p = 0.000$ and 0.037 , respectively), while the value of MVQE, planimetry, MV PHT, mean pressure gradient, Wilkins

scores and left atrial diameter were not associated with occurrence of atrial fibrillation.

Conclusions: In this study, we found that there were significant differences in ejection fraction and mean pulmonary arterial pressure between atrial fibrillation and sinus rhythm in patients with mitral stenosis.

Keywords: mitral stenosis, atrial fibrillation, ejection fraction, mean pulmonary artery pressure, planimetry, mean pressure gradient, pressure half time, Wilkins score.

PP2.34. Successful Management in A Rare Case of Discrete Subaortic Stenosis in Adult Male: A Case Report

Andrico Tobing¹, Marshall², N Sitohang¹, A Sitepu¹,
N Akbar¹, AA Siregar¹, Z Mukhtar

¹ Department of Cardiology and Vascular Medicine

² Department of Cardiothoracic Surgery,

Faculty of Medicine, University of Sumatera Utara, Adam Malik Hospital,
Medan, Indonesia

Discrete subaortic stenosis (D-sAS) is likely an acquired cardiac disorder which requires anatomic precursors at Left Ventricle Outflow Tract (LVOT) level and a genetic background. D-sAS occurs usually within the first decade, provoking rapidly progressive LVOT obstruction and secondary aortic regurgitation (AR). The form of D-sAS consists of a membranous diaphragm or fibromuscular ring encircling the LVOT just beneath the base of the aortic valve. D-sAS has been considered for a long time exclusively a disease in infancy and childhood and few reports and small series have described in adulthood and elderly.

A 42 year-old man presented with exertional dyspnea and chest pain since 2 years ago. No family history of heart disease. Physical examination showed heart failure sign with increase JVP a grade 3/6 ESM at URSB radiated to carotid area, and a grade 3/6 PSM at LLSB. The ECG showed left atrial enlargement, left and right ventricle hypertrophy. The chest X-ray showed cardiomegaly, prominent aortic segment, and pulmonary congestion with right pleural effusion. Echocardiography showed severe subaortic stenosis with pressure gradient 77,56 mmHg, moderate AR, severe tricuspid regurgitation, mild mitral regurgitation, pulmonary hypertension, concentric LV hypertrophy, dilatation another chambers and preserved ejection fraction. The surgical intervention was performed with resection of fibrous tissue of the subaortic stenosis, aortic valve replacement and tricuspid valve repair. After the procedure, the patient was stable and the post operative echocardiography showed good result with no leakage of prosthetic aortic valve.

We reported a rare case of discrete subaortic stenosis in an adult man who complained the symptoms of heart failure. According to the guideline, the decision to perform the surgical intervention is mainly determined by severity of LVOT obstruction, involvement of AR and patient's clinical features. The surgical intervention was done with good result in this patient and regular follow up assessment is recommended to evaluate the recurrence stenosis.

Keywords: discrete subaortic stenosis, left ventricular outflow tract, resection.

PP2.35. A 28 Year Old Man with Rupture Congenital Anomaly Aneurysm of Right Coronary Sinus of Valsava into Right Ventricle: A Case Report

AS Adhitya, CA Andra, AC Lubis, N Akbar,
Z Mukhtar, and AA Siregar

*Department of Cardiology and Vascular Medicine, Faculty of Medicine,
University of Sumatera Utara/Adam Malik Hospital, Medan, Indonesia.*

A sinus of valsalva aneurysm is a rare cardiac anomaly that may be congenital or acquired, a coexisting cardiac lesion might be present. If the aneurysm ruptures, it causes symptoms of dyspnea. Echocardiography is useful for diagnosis. The treatment of choice is surgery.

We reported a case of a young adult with sudden onset of dyspnea. There was no history of trauma and sign of infection. Physical examination showed a continuous loud murmur in upper right sternal border. The ECG showed Sinus rhythm with RAD. The CXR showed cardiomegaly. The 2-DE and color doppler Transthoracic Echocardiography (TTE) revealed a ruptured aneurysm of right coronary sinus of valsalva causing left to right shunt into the right ventricle, the ventricular septum showed no defect. The right coronary sinus showed an aneurysm with an opening of 7 mm leading into right ventricle. He was diagnosed as ruptured congenital anomaly aneurysm of right coronary sinus of valsalva. Patient treated with conservative diuretic therapy while waiting for surgical procedure.

We reported a rare case of a 28-year-old man with ruptured congenital anomaly aneurysm of right coronary sinus of valsalva. The diagnosis was established by 2-DE and color doppler TTE, supported by sudden onset of dyspnea and a continuous loud murmur on physical examination.

Keyword: Aortic aneurysm, aortic rupture, echocardiography, sinus of valsalva.

PP4.24. Association Between Leucocyte Count and Infarct Size in Patient with Acute Coronary Syndrome Based on Wall Motion Score Index

S Indriani, Alfa Alfin Nursidiq, Pipiet Wulandari,
Risolina Myrtha, Heru Sulastomo, Niniek Purwaningtyas

*Department of Cardiology and Vascular Medicine,
Sebelas Maret University, Surakarta, Indonesia*

Abstract

Background: Acute Coronary Syndrome (ACS) is common and affects a significant number of people annually. As white blood cells, leucocyte is a hallmark of inflammatory reaction in patients with ACS, we investigated the association between leucocyte count on admission and infarct size based on Wall Motion Score Index (WMSI) in patient with Acute Coronary Syndrome (ACS).

Methods: A retrospective study was conducted from 1 January 2015 to 12 February 2015, in ACS patients who admitted to Moewardi General Hospital, we examined patients with ST segment elevation, non-ST segment elevation and unstable angina. Blood samples obtained in the first hours on admission in the emergency room, echocardiography was performed on day 3–5. Leucocyte count was divided into 2 groups more than 10,000 cells/mL (group I) and less than 10,000 cells/mL (group II).

Results: 27 patients were included in this study, there were 20 male and 7 female. With mean age (55.0±13.5) in group I and (59.7±7.8) in group II. Mean of WMSI was different between two groups (1.35±0.27) in group I and (1.47±0.55) in group II, but not statistically different $p=0.803$. Creatinin Kinase Myocardial Band (CKMB) level between two groups was significantly different (63.98 ± 80.37ng/ml vs 29.08±69.07ng/ml), with $p < 0.01$.

Conclusion: This study shows that there are no association between

leucocyte count and WMSI, but there is association between leucocyte count and CKMB level. More data are required to establish the correlation between leucocyte count and WMSI.

PP4.25. Acute Myocarditis in Dengue Shock Syndrome: A Case Report

Hendy Wirawan, IGN Putra Gunadhi

*Department of Cardiology and Vascular Medicine, Faculty of Medicine
University of Udayana, Bali, Indonesia*

Viral infections often cause effects on the heart and common cause of myocarditis. Dengue is a viral disease transmitted by mosquitoes. Complications of cardiac have been reported in dengue-affected patients, which include atrioventricular conduction disorders, supraventricular arrhythmia, and myocarditis.

Patient male 15 years old was referred with dengue haemorrhagic fever day 8 with shock. History of 8 day fever. Shortness of breath since 3 days, getting better by upright position. Clinical examination were found increase of jugular venous pressure and rales two third of both lung. An electrocardiogram showed sinus tachycardia 126x/minute. Chest radiograph disclosed heart enlargement (CTR 65%) and congestion of both lung. Bed side echocardiography showed left ventricle systolic dysfunction with ejection fraction 43% and global hypokinetic wall motion. Laboratory data showed positive of serology antidengue and cardiac marker. Patient treated with supportive therapy and heart failure medical regimen for 5 days and discharge from hospital with clinically stable and re-echocardiography showed global normokinetic wall motion and normal ejection fraction.

Many studies report that more severe myocardial dysfunction on dengue DSS compared with DHF or non-shock DHF. Pathophysiology of myocardial cell injury in dengue illness is not yet fully understood, it may result either from direct Dengue virus (DEN) invasion of the cardiac muscles or a cytokine-mediated immunological response, or both. Although it was self-limiting under supportive treatment, acute myocarditis in dengue can be severe and produce fatal outcome. Early recognition of myocardial involvement in dengue illness, prompt restoration of hemodynamic instability while avoiding fluid overload. **Keywords:** Acute myocarditis, dengue haemorrhagic fever, dengue shock syndrome.

PP4.26. Percutaneous Coronary Intervention (PCI) Stenting in a Patient With Spontaneous Right Coronary Artery Dissection: A Case Report

Krisna Jayantika and Bagus Ari Pradnyana

*Department of Cardiology and Vascular Medicine, Faculty of Medicine,
Udayana University, Sanglah Hospital, Denpasar, Bali*

Spontaneous coronary artery dissection (SCAD) is a rare non-traumatic and non-iatrogenic cause of angina pectoris, acute coronary syndrome or sudden cardiac death, with incidence between 0.1-1.1%. Non-atherosclerotic origin were mostly found, and associated with female, young age, peripartum period, oral contraceptive use, systemic inflammatory disease, and involvement of Left Anterior Descending (LAD) coronary artery. Meanwhile, atherosclerotic SCAD were less found and associated with traditional risk factor for CAD, male, older age, and involvement of Right Coronary Artery (RCA).

A case of old male, 54 y.o. routinely control to cardiology polyclinic Sanglah Hospital complaining typical angina chest pain when do

moderate to heavy exercise. Patient with hypertension, Type II DM, and history of acute anterior MCI undergo primary PCI with 2 stent DES at proximal-distal LAD at February 2014. Angiography that time also revealed stenosis 80% at distal Left Circumflex (LCx) artery, stenosis 80% at distal RCA, and atherosclerotic plaque dissection at mid RCA. No history of trauma, aortic dissection, heart surgery, or systemic inflammatory disease. Patient undergo elective PCI at February 2015, with successful direct stenting 1 stent DES at plaque dissection, angiography evaluation shows no residual dissection. Patient was discharged the day after procedure, with no complication and no complaint at mobilization.

Coronary angiography is the standard diagnostic tool to diagnosed atherosclerotic SCAD. If angiography difficult to interpret, Intravascular Ultrasonography (IVUS) can be used distinguish false lumen and atherosclerotic plaque (Oliveira SM et al., 2009). Management of SCAD remain controversial, since no guidelines was established. He was and planned to do elective PCI. In patient with high risk and ongoing ischemia, PCI with stenting is recommended as therapy. (Khan et al., 2006). SCAD itself was considered to have a disastrous prognosis since the majority of cases were diagnosed at autopsy. Early diagnosis and appropriate management may significantly improve outcome (Maeder M, 2005).

We reported a case of atherosclerotic SCAD at RCA in old male, hypertension, and type II DM patient with PCI as a therapy with no residual dissection as a result.

PP4.27. Relationship Between Hyperglycemia And Inflammation In Patients With Acute Coronary Syndromes (ACS)

Anditasari F, Djafar Z, Jamaluddin, Munizu M, Kabo P*, Mappangara I*

Dept. of Cardiology & Vascular Medicine, Faculty of Medicine, Hasanuddin University

Abstract

Background: Hyperglycaemia in patients with ACS is associated with increased cardiovascular (CV) risk. Hyperglycaemia in patients with ACS may be associated with increased systemic inflammation. Leukocytes are the major cellular mediators of inflammation and their elevated count is associated with higher CV event rate in ACS patients. Thus, it is possible that there is a relationship between hyperglycaemia and high leukocyte count among patients with ACS. Objective: To investigate the relationship between hyperglycaemia and leukocyte count in patients with ACS.

Methods: Glucose level and leukocyte count on admission were measured in 60 patients with ACS admitted in January 2014 – Maret 2014 to emergency room Dr. Wahidin Sudirohusodo Hospital. Patients were divided into two groups, with hyperglycaemia (glycaemia on admission ≥ 140 mg/dL) and with normoglycaemia (glycaemia on admission < 140 mg/dL), then leukocyte count was compared to hyperglycemia and normoglycemia patients.

Results: Hyperglycaemia was noted in 41 (68.3%) patients. Rates of leukocyte count in overall sample is $12.27 \pm 3.54 \times 10^3$. Mean of leukocyte count significantly different between normoglycaemic and hyperglycaemic patients, both overall sample ($9.34 \pm 2.58 \times 10^3$ vs $13.63 \pm 3.10 \times 10^3$, $P < 0.0001$) and non-DM patients ($9.34 \pm 2.58 \times 10^3$ vs $14.08 \pm 3.20 \times 10^3$, $P < 0.0001$). There was no significant different in mean leukocyte count between DM and non-DM in ACS patients with hyperglycaemic ($12.38 \pm 2.54 \times 10^3$ vs $14.08 \pm 3.20 \times 10^3$, $P = 0.121$).

Conclusion: A significant positive correlation can be seen between hyperglycaemic and leukocyte count on admission in ACS patient in whom with or without DM.

Keywords: Hyperglycemia, leukocytes, inflammation, ACS.

PP4.28. ST Elevation Myocardial Infarction with Massive Thrombus Burden in Young Adult with Antiphospholipid Syndrome: A Case Report

Dicky Yulianda, Y Saragih, A Raynaldo, AC Lubis, N Akbar, Zulfikri Mukhtar, and AA Siregar

Department of Cardiology and Vascular Medicine, Faculty of Medicine, University of Sumatera Utara / Adam Malik Hospital, Medan, Indonesia

ST segment elevation myocardial infarction occurs when a coronary artery becomes blocked by a blood clot, causing the heart muscle supplied by the artery to die. The antiphospholipid syndrome (APS) comprises clinical features such as coronary artery disease (CAD) due to hypercoagulable complication. Several studies have demonstrated that hypercoagulability of APS patients predisposes to high rate of thromboembolic events causing significant morbidity and mortality.

A case of a 29 years old man with symptoms of angina chest pain. He had no risk factor of CAD. Electrocardiogram was consistent with anterior and septal myocardial infarction. Initial Creatinine Kinase-MB and troponin measurements were positive. Echocardiogram showed a hypokinetic anterior and septal wall of the heart. Coronary angiography revealed total occlusion with massive thrombus burden of his left anterior descending artery, which was successfully recanalized by percutaneous coronary intervention. We found positive result for Anti $\beta 2$ Glycoprotein I IgM suggesting the antiphospholipid syndrome.

We have reported an uncommon case of a 29 years old man with coronary artery disease and antiphospholipid syndrome. These findings warrant further laboratory examination of antibody at least 12 weeks apart to confirm the diagnosis.

Keyword: ST elevation myocardial infarction, antiphospholipid syndrome, young adult.

PP4.29. Autolysis Thrombus on ST-segment Elevation Myocardial Infarction in a 63 year old man : A Case Report

Dylan Hadi¹, K Marwali², SA Yuwono¹, ANM Wibowo¹, WJP Harry¹, Sunanto Ng³

¹ Faculty of Medicine, Universitas Pelita Harapan, Lippo Village, Tangerang, Indonesia

² Siloam General Hospital, Lippo Village, Tangerang, Indonesia

³ Faculty of Medicine, Universitas Pelita Harapan, Tangerang; Indonesia ; Siloam General Hospital, Lippo Village, Tangerang; Indonesia

Abstract

Background: The national health research report in 2013 (Risksdas) stated that the prevalence of coronary heart disease (CHD) in Indonesia is 0,5%. STEMI can occur when resting coronary flow is disrupted due to lesion diameter of $>90\%$ which can be caused by thrombus formation. However, transient occlusion followed by thrombus autolysis may produce fluctuating symptoms on unstable angina (UA) or non ST-segment Elevation Myocardial Infarction (NSTEMI), while there is insufficient data on thrombus autolysis in STEMI.

Methods: A 63 year old male with a history of acute myocardial infarction (AMI) came presenting with chest pain since 2 hours ago before admission. He had these symptoms since 2 weeks ago but this morning his symptoms worsened. He was given dual platelet therapy of Clopidogrel 300mg and Aspirin 160mg and a catheterization was done soon after. Laboratory results which showed increased leukocyte count of $15.53 \times 10^3/\mu\text{L}$ and elevated cardiac enzymes

(CK 194 U/L, CK-MB 26.6 U/L, and TroponinT-Hs 960 pg/mL) while ECG results showing ST-Elevation on leads V1-V4 supported the diagnosis of Anteroseptal STEMI.

Results: Coronary angiography showed irregular RCA with no significant stenosis (30%) and irregular LCX with no significant stenosis, while LAD showed irregularity, TIMI 2 flow with minimal residual thrombus along LAD and enoxaparin was given. These results may suggest the probability of thrombus autolysis occurring in the LAD.

Conclusion: The mechanism of autolysis thrombus on STEMI needs further investigation and may account for the TIMI 2 flow and residual thrombus present on LAD.

Keywords : Male, STEMI, Autolysis, Residual Thrombus.

PP4.30. The Considerations of Dual Antiplatelet Therapy Discontinuation in Newly Drug-eluting Stented Patients: Case Series

H Lim^{1,2}, K Marwali², A Thengker², MW Hadi²,
A Susanto², Antonia Anna Lukito^{1,2}

¹ Faculty of Medicine, Pelita Harapan University, Tangerang, Indonesia

² Siloam Hospital Lippo Village, Tangerang, Indonesia

Stent thrombosis is a catastrophic complication, and the perioperative management of such patients is a major clinical issue. Cessation of antiplatelet therapy is the most significant predictor of perioperative stent thrombosis (ST), however, bleeding also negatively affects prognosis and adherence to antiplatelet therapy after acute coronary syndrome.

Case I: 53 yo male on third month of dual antiplatelet therapy (DAPT) after primary PCI drug eluting stent (DES) placement in LM-LAD was re-admitted with NSTEMI. Platelet function test (PFT) by VerifyNow showed 57 PRU after loading dose of 300 mg clopidogrel and 362 ARU for aspirin, indicated hyper-responsiveness to DAPT. He experienced epistaxis then and eventually diagnosed as neoplastic of unknown behavior in cavum nasi. An urgent biopsy procedure was suggested to be done several days just after NSTEMI event.

Case II: 51 yo male on second week DAPT after elective DES placement in LAD, OMI and RCA, was consulted for traumatic lumbar compression fracture preoperative management.

Case I: The pre-biopsy management was switching DAPT to enoxaparin prior to surgery and then switch back to DAPT after surgery. Fortunately there was no acute coronary event during the switching.

Case II: The orthopedic surgery was suggested to be postponed to at least 6 months after DAPT.

Low on-antiplatelet reactivity was associated with increased risk of bleeding. Maintaining DAPT in appropriate duration is the mainstay of ST prevention. If the non-cardiac surgery is urgent and the risk of postponing surgery is outweighs the risk of ST, the potential strategies include treatment with aspirin alone, bridging therapy with aspirin and/or heparin/LMWH, or bridging therapy with heparin/LMWH alone, depending on the nature bleeding risk of the surgery.

PP4.31. Acute ST-segment Elevation Myocardial Infarction (STEMI) in 25 year old Male: A Case Report

Kelvin Marwali¹, M Sirait¹, Sunanto Ng²

¹ Siloam General Hospital, Tangerang, Indonesia

² Faculty of Medicine, Universitas Pelita Harapan, Lippo Village, Tangerang, Indonesia

Background: STEMI is a major cause of cardiovascular mortality worldwide. Coronary atherosclerosis begins early in life, but acute coronary syndrome in young adult uncommon. Its incidence varies from 2% to 10%.

Methods: 25 year old heavy smoker male was referred to our emergency department with continuous severe retrosternal chest pain since 17 hours with nausea and dyspnea before admission. Initial Electrocardiography (ECG) taken at a private hospital showed anterior extensive ST-segment elevation. Ticagrelor 180 mg, Aspirin 160 mg, ISDN 5 mg, Ramipril 1,25 mg, and Fondaparinux 7,5 mg were given. Laboratory result showed a high haemoglobin count of 18.78 g/dL, hematocrit of 57.16% and erythrocyte of $6.96 \times 10^6/\mu\text{L}$ suggesting polycythemia. Elevated leucocyte count of $17.23 \times 10^3/\mu\text{L}$ and cardiac enzymes (CK 2909 U/L, CK-MB 378 U/L, troponin T hs 3573 pg/mL) support the diagnosis of STEMI.

Results: Emergent coronary angiography revealed the presence of total occlusion in proximal LAD and high thrombus burden. Thrombosuction, pharmacoinvasive (Heparin and Intergilline) and balloon angioplasty were done resulting in TIMI 1 flow. Echocardiography three days later showed hypokinetic in anterior and apex region, decrease contractility of LV function with LVEF 45%.

Conclusion: ACS in young patients is an uncommon condition with a variety of possible aetiologies and distinct risk factors. Smoking could be the most important modifiable risk factor in young patients with STEMI. Hereditary thrombophilia may have contributed in thrombotic process.

PP4.32. An Omnious ECG Pattern of Harbringer of Infarction: A Case of Wellens' Syndrome

Kelvin Marwali¹, M Sirait¹, VA Damay^{1,2}, and Sunanto Ng^{1,2}

¹ Siloam General Hospital

² Faculty of Medicine, Universitas Pelita Harapan, Lippo Village, Tangerang, Indonesia

Wellen's syndrome is a characteristic T-wave either deeply inverted or biphasic on an electrocardiogram (ECG) in a patient with intermittent chest pain. These findings reliably suggest a high-grade stenosis of the proximal left anterior descending (LAD) coronary artery.

56 year old longstanding hypertensive female present to our emergency department with intermittent stabbing chest pain radiating to the back at rest lasting around 20 – 30 minutes since three days prior admission. ECG showed biphasic t-waves in V2 and V3; ST-segment depression in V4-V6. Laboratory findings was normal except blood glucose of 287.7 mg/dl and cardiac enzymes were elevated (CK 177 U/L, CK-MB 25.4 U/L, troponin T hs 306.6 pg/mL).

Urgent coronary angiography showed subtotal occlusion in proximal LAD, 80% mid and 60% proximal stenosis in LCX, and less than 30% distal stenosis Left Main; diffuse proximal to mid 40-60% stenosis. Balloon angioplasty and a bare metal stent was deployed in proximal LAD resulting in TIMI 3 flow.

Wellen's syndrome presents with characteristic EKG findings that we need to recognize due to the significant percentage of patients who will develop anterior wall myocardial infarction if aggressive intervention is not undertaken.

PP4.33. Incidence of Pericardial Effusion Following Myocardial Infarction as Determined by Two Dimensional Echocardiography

Rima Rinanty, Rizki Davi, Prihati Pujowaskito

Department of Cardiology and Vascular Medicine of
Dustira Military Hospital, Cimahi, Indonesia

Abstract

Background: Pericardial effusion (PE) is not an uncommon finding in serial echocardiographic evaluation of patients with AMI, especially when infarction is anterior and extensive. In our hospital setting frequency, time course and outcome of PE after AMI are unknown. The objective of this study was to determine the frequency of pericardial effusion after first myocardial infarction.

Method: This was an observational study. Total 45 patients admitted into our Dustira Hospital Emergency Department diagnosed with first acute myocardial infarction with consistent ECG findings and treated with or without thrombolytic. This study was performed from August 2014 to January 2015. Pericardial effusion was considered to be present when separation between two pericardial layers is present throughout the cardiac cycle on two dimensional echocardiography, Mild PE < 5 mm, Moderate PE 10-20 mm, Large PE > 20 mm. Patients were evaluated within 0 and days 14. Images were obtained in standard parasternal long & short axis and apical four chambers view. Echocardiographic findings were interpreted by our experienced Cardiologist.

Results: 45 patients, 9 were females, with mean age 60 years old (sd: 9.13). 1 patient from thrombolytic group was not found to have any effusion at all that time, while 44 others was.

22 patients who were treated with thrombolytic, 4 were not found to have anterior echo free space, 18 were found to have it with average distance of 0.4933 cm (sd: 0.205). 7 were not found to have posterior echo free space, 15 were found to have it with average distance of 0.6333 cm (sd: 0.383). 10 were not found to have lateral echo free space, 12 were found to have it with average distance of 0.609 cm (sd: 0.294). 23 patients who were untreated with thrombolytic, 3 were not found to have anterior echo free space, 20 were found to have it with average of 0.5952 cm (sd: 0.213). 10 were not found to have posterior echo free space, 13 were found to have it with average distance of 0.7384 cm (sd: 0.275). 8 were not found to have lateral echo free space, 15 were found to have it with average distance of 0.66 cm (sd: 1.804).

Conclusion: Pericardial effusion was recorded in 98 % of the patients with first AMI. All patients are classified into mild PE. PE is a common occurrence in patients with AMI. It is strongly suspected that it is caused by the inflammation process of AMI.

PP4.34. Case report: A 23 year old man with ST- Elevation Myocardial Infarction

Ruswandiani, O Litanto, Fatchurochman, O Akbar

Department Cardiology, Salamun Hospital, Bandung, Indonesia

Coronary heart disease is one of the most common cause of death worldwide. Acute myocardial infarction (AMI) among young is relatively uncommon. We present a case of acute myocardial infarction in 23 years old male. This is our first case in young patients for acute coronary syndrome.

A 23 year old male came to our ER with chief complaint typical angina since 3 hours ago. A past diabetes mellitus, hypertension, dyslipidemia and family history were not found. He is a heavy smoker, almost 20 ciggarets/day. Vital signs were normal. BMI 32. Physical examination within normal limit. Electrocardiography showed ST-elevation in anteroseptal dan high lateral wall. Cardiac markers were positive. From echocardiography showed that hipokinetic

segmental in anteroseptal wall and there was no pericardial effusion, EF 47 %, MR trivial. He didn't want to refer to another hospital for angiography. We treated him as acute myocardial infarction and we treated him with Clopisan (Clopidogrel), Aptor (Aspilet), Arixtra (Fondaparinux sodium), Crestor 20(Rosuvastatin), Concor 2,5 (bisoprolol), Cedocard (nitrates) intravenous. He was discharged after 7 days of treatment and in a good condition.

Smoking, along with obesity were strong risk factors in this patients. The current management and aggressive risk factor modification may allow better prognosis in the future also a good prevention strategies in patients at risk for premature coronary disease.

PP4.35. Acute Coronary Syndrome in Pregnancy: A Case Report

Sheila Witjaksono, S Hendyanto, M Purnawan, E Hartanto,
D Indraprasta, and AH Alkatiri

*Departement of Cardiology and Vascular Medicine,
Medical Faculty of Hasanuddin University,
Wahidin Sudirohusodo General Hospital, Makassar, Indonesia*

Acute coronary syndrome (ACS) in pregnancy is rare, but its associated with high incidence of morbidity and mortality of both mother and fetus. The combination of normal physiological changes of pregnancy and more prevalent cardiovascular risk factors are increasing its incidence. The incidence of myocardial infarction in pregnancy has been estimated to be 6.2 per 100 000 deliveries with a mortality rate of 5.1%–11%

A 36-year old pregnant woman with multiparous and 20-22 weeks of gestation, admitted to hospital with prolonged typical chest pain. History of angina pectoris since 9 months ago. Patient has a family history of heart disease, dyslipidemia, and obese.

On physical examination there was hypotension, tachycardia, tachypnea. ECG shown sinus tachycardia and infero et anterolateral wall ischemic. On laboratory examination there was high in troponin level (738 ng/ml). TTE shown lateral hypokinetic, EF 50%, and diastolic dysfunction. The patient was treated with aspilet, clopidogrel, and LMWH. After hospitalized for 5 days, her condition improved and stable until now.

We had reported a rare case, NSTEMI in pregnancy. The diagnosis based on anamnesis, ECG and cardiac biomarker. The patient was given aspilet, clopidogrel, and LMWH. The medication is suitable because no prolonged chest pain, and fetal condition is good overall.

PP4.36. Association of Left Ventricular Ejection Fraction with In-hospital Mortality Among Patients with Acute ST-segment Elevation Myocardial Infarction

Fandi Ahmad¹, Novi Ariyanti¹, Isman Firdaus²,
Dafsah A. Juzar², Daniel P.L. Tobing², Dian Zamroni²,
Irmalita², Surya Dharma², and Siska S.Danny²

¹ *Residents of National Cardiovascular Centre Harapan Kita,
Jakarta, Indonesia*

² *Cardiologist of National Cardiovascular Centre Harapan Kita,
Jakarta, Indonesia*

Abstract

Background: Left ventricular ejection fraction (LVEF) is an important prognostic factor in patients with acute ST-segment elevation myocardial infarction (STEMI). LVEF should be assessed in all STEMI patients since reduced LVEF is a known predictor of clinical poor outcomes. Although reperfusion therapy has been found effective in the reduction of complications of STEMI, LVEF

impairment is a common consequence of an acute coronary event. Aim: To assess the prevalence of LVEF among STEMI patients and its association with in-hospital mortality.

Methods: This study included 261 STEMI patients between September 2014 and January 2015. Data was collected from Registry of Acute and Intensive Cardiac Outcome (RAICOM) at Intensive Cardiovascular Care Unit (ICVCU) National Cardiovascular Center Harapan Kita. LVEF was determined among these patients, who were divided into three groups according to LV function: (1) severely impaired (LVEF <40%); (2) moderately impaired (LVEF 40-50%); and (3) normal (LVEF ≥50%).

Results: Among 261 STEMI patients, LVEF were classified as severely impaired in 93 patients (35.6%), moderately impaired in 81 patients (31%), and normal LVEF in 87 patients (33.3%). 173 patients (66.3%) undergoing revascularization both percutaneous coronary intervention and fibrinolytic and 130 patients (49.8%) were anterior STEMI. LVEF was associated significantly with increased of in-hospital mortality among STEMI patients ($p = 0.023$).

Conclusion: This study demonstrates that STEMI patients with severely impaired LVEF (<40%) were associated with a higher incidence of in-hospital mortality.

Keywords: STEMI, LVEF, in-hospital mortality.

PP4.37. The Challenges in Delivering Reperfusion Therapy of ST-Elevation Myocardial Infarction (STEMI) Patients Presenting in West Jakarta iSTEMI Network

D.A. Juzar¹, D. D. Ariwibowo², R. Dewayani², A. Priyana², Stephanie Salim², Doni Firman³, Sunarya Soerianata³, et. al

¹ Department of Cardiology and Vascular Medicine, Faculty of Medicine, University of Indonesia,

National Cardiovascular Center Harapan Kita, Jakarta, Indonesia

² Research Assistant iSTEMI Program

³ Department of Cardiology and Vascular Medicine, Cengkareng, General Hospital, Jakarta, Indonesia

Abstract

Introduction: No-reperfusion therapy in STEMI has been associated with higher mortality and adverse outcomes. From our network, 43.8% of STEMI patients are still not offered any reperfusion therapy, some of them are considered “ineligible for reperfusion”. We would like to observe whether the same challenges were also found in the iSTEMI (Indonesia STEMI) Network, a regional STEMI network pilot program in West Jakarta.

Material and methods: Prospective study and observation was conducted within 20 health facilities in the West Jakarta iSTEMI Network starting from July to December 2014. Data were analyzed with SPSS version 16.0 software and presented in percentage.

Results: From 290 patients in the network who did not receive reperfusion therapy, 72.41% patient were presented late (onset > 12 h). Of the 27.6% patients, who were considered eligible for reperfusion, 7.6% patients refused to undergo the procedure, 6.2% had spontaneous reperfusion and 2.7 % refused in terms of the cost issue. The other 2.4% patients died before reperfusion therapy started. Absolute fibrinolysis contraindications were also observed in 2.4% cases. Other variables revealed were advanced age (>75 years), simple inferior, anemia, high creatinine level, lack of reperfusion facility and bed availability after procedure.

Conclusion: Late-presenting patients which were ineligible for reperfusion still remained the major challenges for no reperfusion. Among eligible patients, refused consent contributed significantly higher than the other reasons mentioned. It demonstrated that the local community awareness of heart attack is still very low and

needed to be further encouraged. We also observed that factors contributing in no reperfusion STEMI were also overlapping, for example people presented late because worrying about the costs. Hence, community at risk was expected to join the national health insurance beforehand. In the current invasive-driven reperfusion era, if scientific evidence and clinical guidelines are well applied, more eligible STEMI patients should receive reperfusion therapy.

PP4.38. A Prospective Review of Acute Coronary Syndrome in Indonesian Rural Area

Riomardo Sitorus¹, N Sofyan¹, R Hamonangan², T Pakasi³

¹ Internal Medicine Departments, Tc-Hillers Hospital, Maumere, Indonesia

² Internal Medicine Departments, Cipto Mangunkusumo Hospital, Jakarta, Indonesia

³ Public Health Departments, Faculty of Medicine University of Indonesia, Jakarta, Indonesia

Abstract

Background: Acute Coronary Syndrome (ACS) is prevalent in Indonesia. Mortality due to ACS is related with health facility and service provision throughout the country. This study investigated the cases of ACS in Maumere, East Nusa Tenggara, one of the poorest province in Indonesia.

Methods: Data was collected from all ACS admissions in T.C. Hillers General Hospital, Maumere, between February 2014 and July 2014. We assessed patient characteristics, including baseline demography, risk factors, chief complaints, diagnosis, management, and outcomes.

Results: There were 121 patients admitted with ACS with mean (SD) age was 60 (13) years. Men (55.4%) were slightly more prevalent than women. Only 25.6% of patients received more than 9 years of education and 31.4% were unemployed. Hypertension was the most common risk factor (65.3%) followed by smoking (47.9%). Education level is significantly associated with most risk factors and chest pain characteristics ($p < 0.05$). ST-elevated Myocard Infarct (STEMI) was the most prevalent diagnosis (35.5%) and significantly associated with smoking and male gender. Most ACS patients (80.2%) only received oral therapy with none received Primary Percutaneous Coronary Intervention (PCI) which might impact the rate of mortality (9.1%).

Conclusion: ACS is quite prevalent in this hospital with hypertension and smoking as the main risk factors. Education level is mostly low and significantly associated with risk factors and chest pain characteristics. ACS management is not optimal and might account for high mortality rate associated with this condition.

PP4.39. A 47 Years-Old Man with Deep Vein Thrombosis after Thrombolytic Therapy: A Case Report

Indraprasta D, Hendyanto S, Witjaksno S, Hartanto E, Mappahya AA

Department of Cardiology and Vascular Medicine, Medical Faculty of Hasanuddin University/

Dr.Wahidin Sudirohusodo General Hospital, Makassar, Indonesia

Deep Vein Thrombosis (DVT) that occurred after thrombolytic therapy had not been reported yet and theoretically this should not been happened because one of DVT treatment is thrombolytic therapy itself. We report a patient that suffered DVT in the arm after thrombolytic therapy without prior history of DVT.

A 47-year old man admitted with palpitation, chest pain, dyspnea, diaphoresis. Risk factor was smoking cigarettes. Physical examination shown hypotension, tachycardia, tachypnea, rales at midbase of both lungs, cold extremities. ECG shown AVNRT. We give cardioversion therapy and successful return to sinus rhythm and shown ST-elevation in anteroseptal wall. Laboratory examination shown leukocytosis, raised of Troponin T. Chest X-Ray showed Cardiomegaly with oedem pulmonal, dilatatio et elongatio aortae. We give thrombolytic therapy with 1.500.000-unit Streptokinase intravenously. After that blood sample was taken. One day after, patient complain swelling and painful in his left arm, side that was given thrombolytic therapy. Physical examination showed swelling, bullae, opened wound with blood permeation. Echovascular showed thrombus at axillary vein, but D-Dimer was <0,1, and there was decreasing of Haemoglobin value from 15,1 gr/dl(10-12-2014) to 11,2gr/dl(11-12-2014). We diagnosed with DVT(well score is 3). We give heparinization and after 9 days the symptoms relieve and the swelling decreasing. We check echovascular control and the thrombus was disappeared.

We had reported a very rare case, a man with DVT post thrombolytic therapy. The diagnosis was established with anamnesis, physical examination, laboratory examination, echovascular, and Well score. The patient was given heparinization for 9 days and getting better.

PP4.40. Infarct Related Artery in ST-Segment Elevation Myocardial Infarction (STEMI) Inferior, Right Ventricle, and Postero-Lateral

Desak Gede Widayawati, Bayu Setia, and Ketut Rina

Departement of Cardiology and Vascular Medicine, Faculty of Medicine, University of Udayana, Sanglah General Hospital, Bali

The culprit lesion in acute myocardial infarction inferior is almost either in the right coronary artery (RCA) or left circumflex coronary artery (LCx). Electrocardiography (ECG) is one of reliable tools to diagnose STEMI. With ECG, we can predict which infarct related arteries are occluded. There are some ECG algorithms to identify infarct related artery in STEMI inferior, for example Fiol criteria and Tierala criteria.

A 36 years old man admitted to hospital with chief complaint substernal chest pain, radiated down to his left arm. Patient used to smoke 3 pack per day. His hemodynamic was stable and his physical examination was within normal limit. Electrocardiogram showed ST elevation in lead II, III, aVF, V5, V6, V4R, V5R, V6R, V7, V8, and ST depression in lead I, aVL, aVR, and V1-V3. CKMB was > 40.00 ng/mL and troponin was >2.000 ng/mL. Patient was diagnose with STEMI inferior, right ventricle, and posterolateral. He was managed with fibrinolytic therapy but failed and we did rescue PCI. Coronary angiography showed normal left main, normal RCA, normal LAD, and stenosis 97% in LCx. Percutaneous coronary intervention (PCI) with 1 stent drug eluting stent (DES) deployment was performed in the proximal LCx.

Various ECG algorithms have been suggested to predict culprit lesion in STEMI inferior patients. In our case, using Fiol algorithm, the culprit lesion was predicted at RCA because there was ST depression in lead I > 0,5mm and using Tierala algorithm, the infarct location also was in RCA because ST elevation in lead II less than in lead III, no ST elevation in lead V1, ST depression in lead V2, and ST depression di lead aVR less than lead aVL. Using all above criterias, we predicted RCA as the infarct related artery. But the coronary angiography finding was different with LCx as the infarct related artery. Salem et al reported ST depression in lead aVR predicted culprit artery occlusion with high sensitivity and specificity for LCx.

As in our case, the infarct related artery was LCx. .

In STEMI inferior patients, we can use Fiol and Tierala criterias to predict infarct related artery in most cases. But those algorithms have limitation, as in our case, therefore we can use another criteria such as ST depression in lead aVR. .

PP4.41. Interesting Case Of Post PCI Patient With Chronotropic Incompetence

A Z.Dahlan¹, S. Sinambela¹, Badai Tiksnadi¹, Sunaryo Sastradimaja², Augustine Purnomowati¹, Fauzi Yahya¹, Toni Aprami¹

¹*Dept of Cardiology and Vascular Medicine*

²*Dept of Physical Medicine & Rehabilitation, Padjadjaran University, Bandung*

Chronotropic incompetence (CI) in patient with CVD although was a rare case in our daily practice but extremely a serious mortality predictor, so that need more attention.

We reported a 55 year old-man with SAP CCS II post PCI 3 times that underwent exercise-based cardiac rehabilitation (EBCR) phase II. We diagnosed CI while doing a maximal treadmill test with Bruce protocol to stratification risk before entrance phase II. The result of Maximal HR was only 103 bpm (64% of age-predicted MHR) at functional capacity 8.9 METs and Borg Scale 18. The patient underwent 12 times (twice weekly) supervised CR programme of aerobic moderate continuous training on a treadmill with intensity 50-80% HRR (Heart Rate Reserve). Finally, improvement of functional capacity as 12.4% was final capacity was 10.2 METs, with Maximal HR 115 bpm (69% of age-predicted MHR).

This case interest us about: first, occurrence CI and second, the management. The underlying mechanism for CI in this patient is still misunderstood. Available data suggest roles for reduced beta-blocker density and/or sensitivity secondary to increased sympathetic drive. The management of CI is still unknown, but EBCR proven can improve functional capacity. The mortality rate will decrease in every increasing of functional capacity. Although the achievement improvement of 12.4% (better than previous study), the other method of exercise such as High Intensity Interval Training (HIIT), should be efforted to reach higher functional class to meet this patient's high-intensity work demand.

Closed-supervision exercise-based cardiac rehabilitation can improve functional capacity in patient with chronotropic incompetence, that hopefully can improve outcome.

Keywords: chronotropic incompetence, exercise based -cardiac rehabilitation, functional capacity.

PP4.42. Atypical Chest Pain in 53 years old Woman: A Case Report

ANM Wibowo¹, K Marwali², SA Yuwono¹, D Hadi¹, WJP Harry¹, V Damay³, and Antonia Anna Lukito³

¹*Faculty of Medicine, Universitas Pelita Harapan, Lippo Village, Tangerang, Indonesia*

²*Siloam General Hospital, Lippo Village, Tangerang, Indonesia*

³*Faculty of Medicine, Universitas Pelita Harapan, Tangerang, Indonesia; Siloam General Hospital, Lippo Village, Tangerang, Indonesia*

Angina occurs when the heart is lacking of oxygen due to the blockage of at least one of the coronary arteries. Thus, the diagnosis and management has to be done immediately. However, atypical

angina is often misdiagnosed and it occurs in around 20.5% in women with coronary heart disease. Several studies showed that men are more likely to have coronary intervention than women.

53 years old women with history of asthma was admitted to emergency department with upper abdominal discomfort radiating to lower chest since 12 hours which does not alleviate with rest along with dyspnea and weakness before admission. Initial Electrocardiography showed ST-segment elevation in Lead I, AVL, V5, V6 as well as ST-segment depression in V1 as seen in Figure 1, Chest X-Ray revealed cardiomegaly with cardiothoracic ratio 57%. Laboratory result showed increased leukocyte count $15.53 \times 10^3/\mu\text{L}$ and cardiac enzymes (CK 5426 U/L, CK-MB 576.1 U/L, Troponin T hs 2304 pg/mL) support the diagnosis of ST-segment Elevation Myocardial Infarction (STEMI).

Percutaneous Coronary Intervention revealed the presence of total occlusion in intermediate artery with thrombus at ostial, 50% occlusion at proximal LAD, and stenting was done. This results in TIMI 2 flow.

Atypical angina is frequently found in woman with STEMI and is often misdiagnosed. Early management in this special group is needed.

Keywords: atypical angina, chest pain, STEMI, woman.

PP4.43. Association of Total Bilirubin with Cardiac Adverse Event in Acute Coronary Syndrome Patients

Kuncoro Bayu Aji¹, H Arifianto¹, AA Nursidiq¹, S Indriani¹, and T Wasyanto²

¹ Cardiology Resident, Medical Faculty of Sebelas Maret University - Dr. Moewardi Hospital, Surakarta, Indonesia

² Cardiologist, Medical Faculty of Sebelas Maret University - Dr. Moewardi Hospital, Surakarta, Indonesia

Abstract

Background: Previous studies have shown that the serum total bilirubin (TB) concentration was inversely related with stable coronary artery disease, diabetes mellitus, hypertension, and metabolic syndromes. The relation between TB levels major adverse cardiac events in patients with acute coronary syndrome (ACS) is not known well. The aim of this study is to explore the association between the level of TB and cardiovascular event in patients with ACS.

Methods: A cross-sectional study was conducted on 75 consecutive patients with ACS from January 2014 to March 2014 who admitted in Dr. Moewardi General Hospital, Surakarta. TB was measured at first 24 hour of admission and the study population was divided into tertiles. It will observed for acute heart failure, mortality and arrhythmia as major adverse cardiac events.

Results: The high TB group (n = 38) was defined as a value in the upper second quartile (>0.57 mg/dl) and the low TB group (n=37) as any value in the lower 2 quartiles (<0.57 mg/dl). The acute heart failure rate was significantly greater in the high TB group than in the low TB group (86.8% vs 67.6%) odds ratio (OR) 3.17; confidence interval (CI) 0.99-10.16, $p = 0.046$. But there were no association between TB level with mortality and arrhythmia.

Conclusion : High TB is independently associated with acute heart failure in patients with ACS.

Keywords: Bilirubin, acute coronary syndrome, cardiac adverse event.

PP4.44. A Type A Aortic Dissection Mimicking an Acute Myocardial Infarction: A Case Report

Marwan Nasri, Syaifullah, Y Saragih, Z Efendi, T Siagian, M Ginting, Parlindungan Manik, Zulfikri Mukhtar, and Abdullah Afif Siregar

Department of Cardiology and Vascular Medicine, Faculty of Medicine, University of Sumatera Utara/H. Adam Malik Hospital, Medan, Indonesia

Aortic dissection is a rare case but catastrophic condition, often presenting with chest pain and eletrocardiographic myocardial ischemic signs. An accurate diagnosis and treatment are essential for outcome. In many medical centers where thrombolytic therapy, antiplatelets, heparin or percutaneous coronary angioplasty are the first line therapy for acute coronary syndrome (ACS), but the outcome may be catastrophic in situation such as aortic dissection.

We report a case of a 69 years old woman presenting with chest pain. She was referred to the emergency room with clinical suspicion of ACS but the initial treatment for ACS was postponed because this patient was suspected of having an aortic dissection. This patient was referred for further investigation, and D-dimer was negative. From MSCT diagnosis aortic dissection de Bakey I (StanfordA) was established.

This case report focused the importance of high suspicion of aortic dissection as a possible alternative diagnosis in presence of chest pain and eletrocardiographic myocardial ischemic signs, even though the D-dimer test result was negatif. Therefore, clinicians must always be aware for aortic dissection because clinical manifestation might resemble ACS.

Keywords: Aortic dissection; Myocardial infarction

PP4.45. Classic Modifiable Risk Factors in Indonesian Women with Acute Coronary Syndrome: Our Standpoint to Fight the Disease.

Vito A. Damay, N Wahjoepramono, S Marleen, A Albertus, J Sarip, A Budiman, T Veony, and Antonia Anna Lukito

Faculty of Medicine, Pelita Harapan University/Siloam Hospitals Lippo Village, Tangerang, Indonesia.

Abstract

Background: Acute Coronary Syndrome (ACS) is among the leading cause of mortality in Indonesia, but the prevalence in women is often underrated. The future landscape in Coronary Artery Disease prevention should include steps to modify risk factor in women. This study is aimed at describing the modifiable risk factors in Indonesian women with ACS.

Methods: Data were collected from medical records of all admitted patients with ACS in December 2013- 2014.

Results: The study included 269 patients with ACS. Among the subjects, 61 (22.7%) are women. The mean age of women was 61 ± 9.5 years, statistically older than male subjects (57 ± 10)years ($p= 0.01$). Hypertension is the most common modifiable risk factor (37; 60.7%) in women, followed by Diabetes Mellitus (DM) and Dyslipidemia (19; 31.1% and 18; 29.5%). Among all ACS subjects, 174 (64,7 %) are smokers, and smoking is the most common risk factor found in men with ACS with 164 subjects (78.8%)($p<0.001$), whilst only 10 female patients smoke (16.4%). In women below 55 years old with ACS; 11 (68,7%) subjects have hypertension.

Conclusion: Hypertension is the most common modifiable risk factor in women and the most common risk factor identified in relatively younger women with ACS. Tobacco use is the highest overall risk factor but not for women. Other than the massive anti-tobacco campaign nowadays, early awareness and management of modifiable metabolic risk factors should be a priority and an important standing point in the prevention of ACS in Indonesian women.