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### **P.015: AUTOMATED RADIO-FREQUENCY VERSUS MANUAL B-MODE ULTRASOUND COMMON CAROTID INTIMA-MEDIA THICKNESS MEASUREMENTS IN ROUTINE CLINICAL PRACTICE: A DIRECT COMPARISON OF RISK FACTOR RELATIONS AND ASSOCIATIONS WITH FUTURE EVENTS**

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## P.014

**AUGMENTATION INDEX IS A MORE PROMINENT PARAMETER AS COMPARED TO FLOW MEDIATED VASODILATATION FOR THE DETECTION OF ARTERIAL WALL DYSFUNCTION IN YOUNG WOMEN WITH SYSTEMIC LUPUS ERYTHEMATOSUS**

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**Background:** Systemic lupus erythematosus (SLE) is a chronic inflammatory, autoimmune disease, which may lead to arterial dysfunction, and that could be the reason of enhanced development of atherosclerosis and premature aging of the arteries.

**Aim of the study:** was to assess whether aortic augmentation index (Alx) and endothelium-dependent flow-mediated dilatation (FMD) were modified in young age SLE women and which of parameters is more prominent.

**Methods:** We examined 30 SLE women (age  $37.33 \pm 9.22$  years) with moderate disease activity (SLEDAI  $18.40 \pm 8.17$ ) and 66 controls women (age  $37.45 \pm 8.69$  years). Alx was assessed non-invasively by applanation tonometry (Sphygmocor v.7.01, AtCor Medical). The FMD test in a brachial artery was performed by the ultrasound system (Logiq 700, General Electric).

**Results:** In SLE women Alx ( $20.53 \pm 12.40$  vs  $13.50 \pm 10.14$ ;  $p=0.004$ ) was significantly higher as compared to the controls. Linear regression did not indicate direct relationship between arterial wall parameter Alx and presence of SLE. The main explanatory factor for Alx was MBP. FMD was not significant decrease in SLE women compared to the controls ( $9.25 \pm 5.12$  vs  $9.69 \pm 3.29$ ;  $p=0.670$ ) and it depends on vessel diameter, disease duration and body mass index.

**Conclusions:** Alx, not FMD, is a more prominent arterial wall parameter in the group of relatively young SLE women as compared to the controls. Nonetheless, the inclusion of additional factors shows that Alx is better explained by MBP. Relationship between SLE and measures of arterial wall parameters still remains unclear. Although there are evidences at least of indirect impact of SLE on arterial stiffness parameters.

## P.015

**AUTOMATED RADIO-FREQUENCY VERSUS MANUAL B-MODE ULTRASOUND COMMON CAROTID INTIMA-MEDIA THICKNESS MEASUREMENTS IN ROUTINE CLINICAL PRACTICE: A DIRECT COMPARISON OF RISK FACTOR RELATIONS AND ASSOCIATIONS WITH FUTURE EVENTS**

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**Background:** Carotid intima-media thickness (CIMT) serves as an indicator of atherosclerosis and cardiovascular risk in observational and intervention studies. Off-line measurements from stored B-mode images using manual tracing or automated-edge-detection programs are the most applied methods. Direct measurements by automated radio-frequency (RF) approach might be an interesting alternative. We compared these methods in terms of risk-factor relations and associations with future events.

**Methods:** Data from participants of the SMART-study was used. Far wall common CIMT was measured with B-mode and automated RF. Detailed risk factor information was obtained. All participants were followed for occurrence of vascular events (mean follow-up 2.1 years). CIMT was related to risk factors with linear-regression models and to future events with Cox-Proportional-Hazards models.

**Results:** Data were available for 2146 participants. Intraclass correlation between two methods was modest (0.45). The relation between B-mode CIMT with age and systolic blood pressure was twice as strong as compared to RF CIMT. The relation of B-mode CIMT with events was stronger than for RF CIMT: vascular death (1.27 vs. 1.00) and ischemic stroke (1.45 vs. 1.03). In subjects with B-mode measured CIMT < 1.00 mm, RF CIMT showed stronger relationships with vascular death (1.30 vs. 0.80), although B-mode CIMT was stronger associated with ischemic stroke (3.70 vs. 0.97).

**Conclusion:** Given our findings, the choice for either B-mode CIMT or RF CIMT measurements in research is partly driven by type of study-population, expected presence of local atherosclerotic abnormalities, and of the main aim of the study (risk-factors or events).

## P.016

**THE ASSESSMENT OF ENDOTHELIAL FUNCTION IN BRACHIAL ARTERY MAY CONTRIBUTE TO THE DISCRIMINATION OF THE METABOLIC SYNDROME**

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**Purpose:** We aimed to investigate the relationship between the presence of the metabolic syndrome (MetS) and endothelial dysfunction in middle-aged subjects with signs of central obesity but without overt cardiovascular disease.

**Methods:** We studied 176 subjects (age  $49.1 \pm 6.4$ , 40% of males) diagnosed with central obesity according to the IDF criteria. Patients underwent the detailed evaluation of cardiovascular risk factors (including blood tests for high sensitivity C-reactive protein, fibrinogen, serum glucose and lipid profile) and the evaluation of endothelial function by ultrasound assessment of flow-mediated dilatation (FMD) in the brachial artery.

**Results:** Totally 120 subjects (68%) were diagnosed with MetS, 56 (32%) had isolated central obesity or central obesity plus one additional component of MetS. FMD was significantly lower in patients with MetS as compared to the subjects without it ( $6.4 \pm 3.9\%$  and  $7.8 \pm 3.9\%$ ,  $p=0.029$ ), although groups did not differ significantly regarding age, gender, diameter of the brachial artery, family history and smoking status. Serum high sensitivity C-reactive protein (hsCRP) but not fibrinogen was higher in patients with MetS ( $p=0.013$  and  $p=0.47$ , respectively). Logistic regression analysis revealed that the presence of MetS is significantly predicted by the decrease of high density lipoproteins and flow-mediated dilatation ( $p=0.0053$  and  $p=0.0054$ ).

**Conclusion:** Association between impaired endothelial function and the presence of metabolic syndrome suggests that the assessment of endothelial function can have an additive value in the discrimination of patients with MetS.

## P.017

**THE INFLUENCE OF ETHNICITY ON FEMORAL-DORSALIS PEDIS PULSE WAVE VELOCITY: A STUDY COMPARING SOUTH ASIANS AND CAUCASIANS**

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**Background:** South Asians living in the UK have lower rates of peripheral vascular disease (PVD) than Caucasians. The reason for this is unclear. Arterial stiffness is an independent risk factor for CV disease and may precede the development of clinically overt atheroma. Thus a possible explanation for this lower incidence of PVD in South Asians, is that they have increased arterial compliance in the femoral vascular bed compared to Caucasians.

**Method:** We investigated this hypothesis in measuring F-D PWV in 93 male volunteers, matched for age and mean arterial pressure (MAP). 43 healthy Caucasians (HC) and 50 healthy South Asians (HA), free from cardiovascular medication and known PVD were used in the analysis. F-D PWV was recorded using foot to foot pulse wave velocity (PP-1000 Hanbyul Meditech, Korea).

**Results:** F-D PWV was significantly higher in the HC group compared to the HA group ( $10.5 \pm 2.4$  v  $9.4 \pm 1.6$  m/s,  $P=0.019$ ).

**Conclusion:** F-D PWV was significantly lower in South Asians living in the UK compared to matched Caucasians. This finding may account for the decreased incidence of PVD seen in this ethnic group. In addition these data support the hypothesis that increased arterial stiffness may predispose to atheromatous disease.

## P.018

**ABDOMINAL AORTIC ANEURYSMS AND THEIR EFFECT ON ARTERIAL WAVE REFLECTION AND MORPHOLOGY**

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