P1.07: RELATIONSHIP BETWEEN ECHOES FROM THE CAROTID MEDIA, CLINICAL VARIABLES AND ARTERIAL STIFFNESS: A CROSS-SECTIONAL ANALYSIS


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using Spymhocor Px device, calculated pulse wave velocity (PWV) and determined erythrocyte NKA activity before and after addition of spironolactone (50 mg/day) to the therapy.

In rat aortic explants, treatment with MBG resulted in a two-fold rise in the levels of collagen-1 and a marked reduction in the sensitivity to the vasorelaxant effect of sodium nitroprusside following endothelin-1-induced constriction (EC50 = 0.05 umol/L vs. 1.98 umol/L in vehicle-treated rings; P<0.01). Canrenone blocked effects of MBG on collagen synthesis and restored sensitivity of vascular rings to sodium nitroprusside (EC50 = 1.7 umol/L).

Patients with RH exhibited elevated plasma MBG concentration (0.18±0.02 vs. 0.37±0.05 nmol/mL; P=0.01) and reduced NKA activity (1.9±0.15 vs 2.8±0.1 umol Pi/ml/hr; P<0.01) vs 16 healthy controls. Six-month administration of spironolactone was associated with a decrease in PWV (P<0.001) and systolic/diastolic BP (121.3±7.2 vs 119.3±6.8 mmHg; P<0.01), and restoration of NKA activity (1.9±0.15 vs 2.3±0.11 umol Pi/ml/hr; P<0.01). These results demonstrate that CS-induced vascular fibrosis is a likely target for aldosterone antagonists.

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Background: We aimed at evaluating determinants of the vascular age. Material and Methods: 187 subjects [86 M and 101 W] with CV risk factors were classified into three categories of the Framingham CV Risk (FR). Their mean carotid intima media thickness (CIMT) and arterial stiffness (a.s.) parameters were assessed. The VA was calculated from the CIMT according to the nomograms from the ARIC Study. The subjects were divided into two groups: 1- VA exceeds the chronological age (CA) for at least 5 years and 2 – others.

Results: The VA > the CA in M and W (M: 68.5 y vs 52.4 y, p < 0.001; W: 67.1 vs 55.00, p<0.005). No relationship between the FR category and classification to group 1 or 2 was observed. In both sexes diabetes mellitus (DM) (M: OR 3.10, 95% CI 1.28 – 7.50, p<0.05; W: OR 4.40, 95%CI 1.85 – 10.47, p=0.001) and additionally in W BMI >25 kg/m2 (OR 5.87, 95%CI 2.15 – 15.99, p=0.009) differentiated group 1 from group 2. Increased j (9.36 vs 7.77, p=0.005) and Ep (131.9 vs 110.1, p< 0.05) in M and Ep (132.3 vs 106.5, p<0.05) in W distinguished group 1 from group 2. In the multivariate analysis, DM and elevated BMI in W and DM and increased j in M were proved to be independent predictors of VA > CA.

Conclusions: FR categories did not allow for prediction if the VA > CA. DM appeared as the strongest predictor of the VA > CA.

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The aim of the present study was to examine the relationship between weekly physical activity patterns, obesity and early sub-clinical cardiovascular dysfunction.

For this study, 84 healthy lifelong non-smoking, normotensive subjects (54 male & 30 female) were recruited (age 39±11 years, BMI 25.2±3.3 kg/m²). Weekly physical activity levels were objectively measured over a five day period using triaxial accelerometry (RT3, Stayhealthy, USA). Activity data was categorized as relative time spent being sedentary, lightly active, moderately active and vigorously active1. Body fat composition was estimated using bioelectrical impedance (TBF410GS, Tanita, UK). Augmentation index (Aix, Sphygmacor, Skidmore Medical, UK) and pulse wave velocity (PWV, Vicorder, Skidmore Medical, UK), indices of arterial stiffness, were measured using anplation tonometry. Early/late mitral valve filling velocity (MV E/A) was used to assess cardiac diastolic function (Vivid 7 Dimension, GE, USA).

Mean Aix, PWV, MV E/A ratio, blood fat composition were 13.43±14.32 %, 6.79±0.93 m/s, 5.11±13.23 and 24.54±7.70 %. Spearman’s correlation analysis identified significant correlations between relative time spent being sedentary and Aix r = -0.328 p < 0.0054, PWV r = 0.2174 p < 0.001. MV E/A ratio r = -0.3541 p < 0.027 and % body fat r = 0.3440 p < 0.0017. The results of the study show that people who spend more time being sedentary have greater body fat, greater arterial stiffness and poorer diastolic function. These observations have important implications for public health.

non-MS; the difference in MP was significant also for these latter vs. non-obese with MS. MP was positively correlated with distensibility ($r=0.097$, $p<0.001$) and inversely with Young’s modulus ($r=-0.121$, $p<0.001$); IMT had a negative correlation with both.

Conclusion: Obesity and MS decrease echogenicity of the carotid media. MP is influenced by different parameters than IMT, and conveys different information; it is inversely correlated with intrinsic and total vessel stiffness. Its histological and clinical meaning are to be investigated.

P1.08 PREDICTION OF CARDIOVASCULAR EVENTS WITH AORTIC STIFFNESS IN PATIENTS WITH ERECTILE DYSFUNCTION

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Background: Erectile dysfunction (ED) confers an independent risk for cardiovascular events and total mortality. Aortic pulse wave velocity (PWV) is an important predictor of cardiovascular events and all-cause mortality. We investigated whether PWV predicts major adverse cardiovascular events (MACE) in patients with ED beyond traditional risk factors.

Methods: MACE in relation to PWV were analyzed with proportional hazards models in 344 patients (mean age 56 years) without established cardiovascular disease.

Results: During a mean follow-up of 4.7 years (range 1-8.5), 24/344 participants experienced a MACE. ED population was divided into tertiles according to the PWV values (low tertile <7.6 m/s; middle tertile 7.6-8.8 m/s; high tertile >8.8 m/s). Kaplan–Meier survival analysis showed that PWV was associated with MACE and the difference between the tertiles was significant (Mantel log-rank test: $11.161; p=0.004$). A PWV value of 7.81 m/sec was a 4-fold higher risk of MACE compared to those in the lowest PWV tertile (adjusted HR 3.97, $p<0.004$), 0.339 ($p=0.044$) and 0.272 ($p=0.004$), respectively. The genetic correlation was 0.360 ($p=0.0001$) between CREA and CRVE.

Conclusions: Retinal microvascular phenotypes play an important role in prediction of cardiovascular disease. However, traditional cardiovascular risk factors explained only a little of the variance of retinal microcirculation. Our study showed moderate heritability for CREA, CRVE and AVR, and significant genetic correlation between CREA and CRVE in a Flemish population. This suggested that genetic variants might play an important role in the association between retinal diameter and cardiovascular disease.

P1.09 HERITABILITY OF RETINAL MICROcircULATION IN FLEMISH FAMILIES

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Aims: Atherosclerosis, a chronic inflammatory disease, is the most important cause of cardiovascular morbidity and mortality. Interleukins (ILs) play a crucial role in balancing anti- and pro-inflammatory stimuli. The aim of our study was to investigate the association between intramida-thickness (IMT) and genetic variation in ILs.

Methods: In 360 participants (mean age 41.7 years; 52.8% women), randomly recruited from a Flemish population, we measured carotid (n=348), femoral (n=355) and brachial (n=355) IMT using ultrasound. After amplifying DNA fragments, we genotyped for IL-1a 594C/T, IL-1b 4336C/T, IL-4 589G/C, IL-4 receptor (IL-4R) 398A/G, IL-4R 1682T/C, IL-5R 482G/A, IL-6 572G/C, IL-6 987G/C, IL-9 4244T/C, IL-10 870C/A polymorphisms and IL-13 4045C/T. We applied a mixed model to assess phenotype-genotype associations while accounting for relatedness and covariables.

Results: In multiple regression analyses, IMT in all arteries increased with age, and brachial IMT increased with systolic blood pressure. Women had higher femoral IMT than men. With adjustments applied for these covariates, the heritability estimates of CRAE, CRVE, and AVR were 0.213 ($p=0.044$), 0.339 ($p=0.010$) and 0.272 ($p=0.004$), respectively. The genetic correlation was 0.360 ($p=0.0001$) between CREA and CRVE.

Conclusions: Retinal microvascular phenotypes play an important role in prediction of cardiovascular disease. However, traditional cardiovascular risk factors explained only a little of the variance of retinal microcirculation. Our study showed moderate heritability for CREA, CRVE and AVR, and significant genetic correlation between CREA and CRVE in a Flemish population. This suggested that genetic variants might play an important role in the association between retinal diameter and cardiovascular disease.