P1.09: HERITABILITY OF RETINAL MICROCIRCULATION IN FLEMISH FAMILIES

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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, figure). Subjects in the highest PWV tertile had a 4-fold higher risk of MACE compared to those in the lowest PWV tertile (adjusted HR 3.97, P=0.035). A PWV value of 7.81 m/sec was associated with a negative predictive value (ability to “rule out” MACE) of 98.1%. Addition of PWV to standard risk factors model yielded correct patient reclassification to higher or lower risk category by 27.6% (P=0.0332) in the whole cohort.

Conclusions: Higher aortic stiffness is associated with increased risk for a MACE in ED patients without known cardiovascular disease. Aortic PWV improves risk prediction when added to standard risk factors and may represent a valuable biomarker of prediction of cardiovascular disease risk in these patients.

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Aims: The aim of this study was to describe the heritability of retinal vessel diameter in complex pedigrees of a Flemish population. We also investigated genetic and environmental correlations of retinal microvascular phenotypes.

Methods: In 413 participants from 70 families (mean age 51.5 years; 50.1% women), randomly recruited from a Flemish population, we post-processed retinal images using IVAN software to generate the central retinal artery and venule equivalents (CRAE and CRVE) and the arteriole-to-venule-ratio (AVR). We used S.A.G.E. Statistical Analysis to estimate heritability and to calculate the genetic and environmental correlations.

Results: In multivariable-adjusted analyses, CRAE decreased with age and mean arterial pressure, and was higher in women than in men. CRVE decreased with mean arterial pressure. Current smokers had higher CRAE and CRVE. These common cardiovascular risk factors only explained 12.7% and 7.3% of the total variance of CRAE and CRVE, respectively. With adjustments applied for these covariables, 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 CRAE 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 CRAE, CRVE and AVR, and significant genetic correlation between CRAE 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.

P1.10
INTERLEUKIN GENETIC POLYMORPHISM IN RELATION TO ATHEROSCLEROSIS IN A FLEMISH POPULATION
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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 intima-media 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 549C/T, IL-1b 4336C/T, IL-4 589G/C, IL-4 receptor (IL-4R) 398A/G, IL-4R 1682T/C, IL-5 482G/A, IL-6 589G/C, IL-6 987G/C, IL-9 4244C/T, IL-10 8700C/A, 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 covariables, carotid IMT was higher in IL-1a C allele carriers (0.624±0.016 vs 0.549±0.038, P=0.045) and in IL-4R A allele counterparts did (0.624±0.016 vs 0.603±0.016, P=0.027). IL-5 G homozygotes had lower femoral IMT than their A allele counterparts did (0.665±0.022 vs 0.728±0.027, P=0.020). Carotid and brachial IMT were lower in IL-9 CC homozygotes than in T allele carriers (0.610±0.016 vs 0.671±0.029, P=0.020; 0.313±0.008 vs 0.348±0.016, P=0.027).