P1.10: INTERLEUKIN GENETIC POLYMORPHISM IN RELATION TO ATHEROSCLEROSIS IN A FLEMISH POPULATION

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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; \( p = 0.004 \)). A PWV 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.

**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 intertima-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-1α 594/T, IL-1β 4336/C/T, IL-4 582/C/T, IL-4 receptor (IL-4R) 398A/G, IL-4R 1682T/C, IL-5 482G/A, IL-6 590G/C, IL-6 987C/G, IL-9 4244C/T, IL-10 8705A, 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 systemic blood pressure. Women had higher femoral IMT than men. With adjustments applied for these covariables, carotid IMT was higher in IL-1α C allele carriers (0.624 vs 0.016; \( p = 0.549 \) vs 0.038; \( p = 0.045 \)) and in IL-4R A allele counterparts did (0.665 vs 0.022; 0.603 vs 0.016; \( p = 0.027 \)). IL-5 G homozygotes had lower femoral IMT than their A allele counterparts did (0.665 vs 0.022 vs 0.728; \( p = 0.027 \); \( p = 0.016 \)). Carotid and brachial IMT were lower in IL-9 CC homozygotes than in T allele carriers (0.610 vs 0.016 vs 0.671 vs 0.029; \( p = 0.020 \); 0.313 vs 0.008 vs 0.348 vs 0.016; \( p = 0.027 \)).
Conclusions: In line with experimental studies in animals and high heritability of carotid IMT, we demonstrated that IMT was associated with genetic variations in several interleukin components.

P1.11
CENTRAL SYSTOLIC AUGMENTATION INDEXES AND URINARY SODIUM IN A WHITE POPULATION

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Background: The association between cardiovascular health and salt intake remains controversial.

Methods: In 630 participants (mean age 40.6 years; 51% women), randomly recruited from F. Breton population, we measured sodium and creatinine in 24 hour urine samples at baseline and follow-up (median, 9.7 years) and the carotid and aortic augmentation indexes (AI) standardized to heart rate at follow-up only.

Results: The carotid AI (130.2% vs 113.7%) and aortic AI (145.7 vs 127.4) were higher (P < 0.0001) in women than men and increased with age (10.1% and 8.3% per 10 years). From baseline to follow-up, the urinary sodium concentration increased (10.1% and 8.3%; P < 0.0001) whereas 24 hour urinary sodium did not change (1.54±0.72%; P = 0.19). In cross-sectional analyses of follow-up data, these estimates were 1.26±0.76% (P = 0.038) and 1.52±0.76% (P = 0.045), respectively. In the longitudinal and cross-sectional analyses, the carotid and aortic AIs were unrelated to the 24 hour urinary excretion of sodium (P > 0.43).

Conclusions: Our study showed an inverse association between the AIs in the central arteries and the urinary sodium concentration, but not sodium excretion. Variation of the afferent renal arteries in response to higher sodium concentration is mediated via the connecting tubule glomerular feedback mechanism; this might move reflection sites in the renal arteries more distally and thereby explain our observations.

P1.13
ETHNIC DIFFERENCES IN WAVE INTENSITY AND ARTERIAL STIFFNESS IN THE CAROTID ARTERY

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Background: In comparison with Europeans (E) in the UK, Indian Asian (IA) people have a 1.5 to 2-fold elevated risk of cardiovascular disease (CVD), and the risk of stroke is more than 2-fold higher in African Caribbean (AC) people. Arterial stiffness and wave reflections influence the development of CVD. We therefore investigated whether there are ethnic differences in wave intensity and arterial stiffness that might play a role in the increased risk of CVD.

Methods and Results: 260 participants, aged 59-82 years in the Southall And Brent REvisited (SABRE) population-based study had wave intensity analysis and measurement of stiffness index (β) performed in the left common carotid artery using an Aloka SSD 5500 ultrasound system (ALOKA, Japan) equipped with a 7.5MHz linear array vascular probe and a combined colour Doppler and echo-tracking system. The intensity of the forward compression wave (FCW) due to left ventricular ejection was significantly increased in IA. The peak intensity of the reflected (backward) compression wave (BCW) was significantly larger in AC. β was significantly higher in both IA and AC. The ethnic differences in the FCW and β persisted after adjustment for key CVD risk factors (Model 2).

Conclusion: Both IA and AC have adverse wave intensity and arterial stiffness patterns, independent of conventional CVD risk factors, that may contribute to the increased risk of CVD in IA and AC.

Table 1

<table>
<thead>
<tr>
<th></th>
<th>European</th>
<th>Indian Asian</th>
<th>African Caribbean</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
<td>372</td>
<td>294</td>
<td>134</td>
</tr>
<tr>
<td>LVMI (g/m2.7)</td>
<td>29.7±0.3</td>
<td>28.2±0.4*</td>
<td>29.6±0.6</td>
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<tr>
<td>LVRI</td>
<td>1.52±0.02</td>
<td>1.48±0.02</td>
<td>1.60±0.03</td>
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<tr>
<td>TPR (mmHg/L)</td>
<td>29.5±0.5</td>
<td>33.4±0.5**</td>
<td>36.1±0.8**</td>
</tr>
<tr>
<td>AF (kPa)</td>
<td>22.6±0.5</td>
<td>24.3±0.6*</td>
<td>22.2±0.8</td>
</tr>
<tr>
<td>Ew (W/m2)</td>
<td>45±1</td>
<td>52±2*</td>
<td>49±3</td>
</tr>
</tbody>
</table>

Data are presented as mean±SE and ANCOVA was performed to examine differences between ethnic groups; * = p < 0.05; ** = p < 0.01. Model 1: adjusted for age. Model 2: adjusted for age, sex, heart rate, height, smoking status, diabetes, hypertension and CVD.