P1.29: AN IGF2 RECEPTOR GENE POLYMORPHISM MODULATES BLOOD PRESSURE TRENDS OVER TIME IN TYPE 2 DIABETES


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unadjusted results analysed by unpaired t-test, shows that obese individuals have a higher aPWV of 0.207 m/s compared with the control group (P = 0.0338, 95% CI: 0.39 to 0.002). When analysing data in correspondence with a European normal material obese children had an aPWV standard deviation score in the normal range for age and height although higher than the control group in the present study. This study shows that obesity is correlated to a higher aPWV although this effect may disappear after adjustment for possible confounders.

P1.27 NT-PROBNP AND VASCULAR CALCIFICATION IN AFRICAN AND CAUCASIAN MEN: THE SAFREIC STUDY

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Background: The N-terminal prohormone B-type natriuretic peptide (NT-proBNP) is a reliable marker of cardiac strain. In hypertensive heart disease, NT-proBNP levels increase and may lose its protective function. Simultaneously, the vasculature is also subject to hemodynamic stress, resulting in vascular matrix remodelling and stiffening which contribute to further cardiac alterations. Alkaline phosphatase (ALP) is a marker of osteoblast activity and is involved in vascular calcification. We explored the link between NT-proBNP and ALP in African and Caucasian men.

Design and measurements: This study included 128 African (mean age, 41.1 years) and 118 Caucasian (mean age, 36.4 years) men. Conventional measurements were acquired along with serum NT-proBNP and ALP.

Results: NT-proBNP correlated positively with ALP (r = 0.29; p = 0.003) in Africans, but inversely in Caucasians (r = -0.20; p = 0.023). After minimal adjustment (age, body mass index, SBP and arterial compliance), the positive significant correlation of NT-proBNP with ALP remained in African men (r = 0.225; p = 0.014), whereas significance was lost in Caucasian men. Multiple regression analyses confirmed the independent association of NT-proBNP with ALP in African men (R² = 0.37; p = 0.006), as well as in younger African men (R² = 0.26; p = 0.059; n = 96), with no significant correlation in Caucasians.

Conclusions: NT-proBNP is independently and positively associated with ALP in African men. This was however not evident in Caucasian men. These results suggest that African men are susceptible to early vascular calcification and may develop cardiac afterload prematurely.

P1.28 THE ACCUMULATION OF RISK FACTORS OF METABOLIC SYNDROME IS ASSOCIATED WITH THE INCREASE IN ARTERIAL STIFFNESS AMONG MIDDLE-AGED MALE INDUSTRIAL WORKERS

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Early detection of arterial dysfunction is important in preventing cardiovascular diseases. We evaluated the associations of the accumulated cardiovascular risk factors with the cardio-ankle vascular index (CAVI), a new indicator of arterial stiffness.

Methods: The study population consisted of 101 employees in the forest industry (49.8 years of age). CAVI was measured by PWV method (VaSera, Fukuda Denshii, Japan). International Diabetes Association (IDF) criteria for metabolic syndrome were used to dichotomize the cardiovascular (CV) risk variables (http://www.idf.org/metabolic-syndrome). Statistical analyses were performed by SPSS 20.0 for Windows (SPSS, USA). Number of risk factors was used as a grouping variable for group comparisons. Independent-Samples T Test was used to compare means and stepwise multiple regression to evaluate the independent risk factors affecting CAVI.

Results: There were no differences between number of risk factors and CAVI in women. Only the men (N = 72, 49.8 years of age) were included in further analyses. The CAVI of the men with 3 or 4 risk factors was significantly higher than the CAVI of the men without risk factors (p-values 0.025 – 0.005). Men with elevated blood glucose level (B-Gluc) or arterial blood pressure (BP) had significantly higher CAVI than men with normal B-Gluc (p = 0.032) and BP (p = 0.007). In the regression analysis Age (β = -0.455, p = 0.008), B-Gluc (β = -0.237, p = 0.038), systolic blood pressure (β = -0.265, p = 0.010) and waist circumference (β = -0.201, p = 0.064) explained 45.1% of the variation in CAVI.

Discussion: Among middle-aged men the number of CV risk factors is an important determinant of cardiovascular health assessed by arterial stiffness. B-Gluc and BP may have a special negative effect on CAVI. Waist circumference seems to be more useful risk factor for arterial dysfunction in male workers than BMI.