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

J. Halonen, H. Lindholm, H. Sistonen, H. Torpo, T. Lindholm, L. Kallio-Vihersaari, J. Konttinen, T. Kemppainen


To link to this article: https://doi.org/10.1016/j.artres.2012.09.065

Published online: 21 December 2019
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 0.02). When analyzing data in correspondence with a European normal risk 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 SAFFREIC STUDY
R. Kruger 1, R. Schutte 1, H. W. Huisman 1, M. H. Olsen 1, 2, A. E. Schutte 1
1Hypertension in Africa Research Team (HART); North-West University, Potchefstroom, South Africa
2Cardiovascular Prevention Clinic, Department of Endocrinology, Odense University Hospital, Odense, Denmark

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 osteblastic 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 < 0.001) in Africans, but inversely in Caucasians (r = -0.20; p = 0.024). 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 = 0.248; p = 0.005), as well as in younger African men (R² = 0.26; p = 0.375; p = 0.001; n = 96), with no significance 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.

P1.30
HIGH CVD RISK GROUP ARTERIAL FUNCTION MARKERS CORRELATE WEAKLY WITH PWV AND AIxHR75 AS EXCEPTIONS
R. Navickas 1, 2, L. Ryliskyte 1, 2, A. Jakaitiene 1, 2, Z. Visockiene 1, 2, J. Badariene 1, 2, A. Lauercvicius 1, 2
1State Research Institute, Centre for Innovative Medicine, Vilnius, Lithuania
2Vilnius University, Vilnius, Lithuania

Background: With more recent publications it is becoming obvious that arterial function abnormalities are likely to be more pronounced with multiple risk factors. The aim of the study was to assess the relationship between arterial wall markers in high CVD risk subjects.

Methods: A cross-sectional study included patients with metabolic syndrome but with no previous CVD. Arterial stiffness (aortic pulse wave velocity [PWV] augmentation index [AIx]), carotid and ankle-brachial stiffness index [CSCI and CAVI, respectively]), endothelial function (flow-mediated dilatation in brachial artery and finger [RHI]), and carotid intima-media thickness (CIMT) were measured. Univariate and multivariable association assessment between these parameters was performed.

Results: Among 3168 subjects (aged 55.5 ± 69% women) univariate analysis revealed that markers significantly (p < 0.01, Pearson r = 0.1) associated with PWV and AIx are CAVI and RHI, and PWV correlates with AIx. CSCI was significantly associated only with CIMT. No significant interaction between other independent variables was observed. Interestingly, 2/3 of markers revealed higher correlations for male compared to female group. Traditional risk factors (gender, age, blood pressure, BMI etc.) explained only 12-34% of variability for PWV, AIx, and CSCI.

Conclusion: In this high CVD risk group we did not find a definite/strong correlation between most of the arterial markers investigated, possibly because they reflect different stage of the same process or due to varying impact of different factors. Stronger inter-correlation of the arterial markers was observed in men.