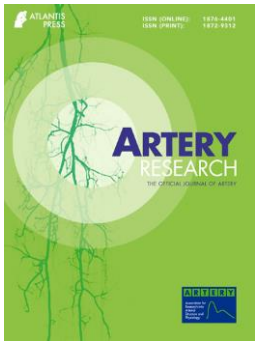

Artery Research

ISSN (Online): 1876-4401 ISSN (Print): 1872-9312
Journal Home Page: https://www.atlantis-press.com/journals/artres

P3.32: THE NUMBER OF METABOLIC SYNDROME RISK FACTORS CORRELATES WITH AORTIC STIFFNESS

Vágovičová Petra, Mlíková Seidlerová Jitka, Filipovský Jan, Mayer Otto, Wohlfahrt Peter, Cífková Renata

To cite this article: Vágovičová Petra, Mlíková Seidlerová Jitka, Filipovský Jan, Mayer Otto, Wohlfahrt Peter, Cífková Renata (2013) P3.32: THE NUMBER OF METABOLIC SYNDROME RISK FACTORS CORRELATES WITH AORTIC STIFFNESS, Artery Research 7:3_4, 135–135, DOI: https://doi.org/10.1016/j.artres.2013.10.119

To link to this article: https://doi.org/10.1016/j.artres.2013.10.119

Published online: 14 December 2019

Prevalence was calculated by applying age specific rates of hypertension to the KHDSS population to determine the total number each method would have detected.
Results: SBP was performed on 671 individuals and ABPM on 138 (21%). Mean±SD age was 52 ±18.5 years, 62% women. Of those who underwent ABPM, 49% were confirmed to have 'hypertension'. The age-standardized hypertension prevalence in KHDSS was 24.6% (95%CI 24.1-25.1) using SBP and 3.9 (95%CI 3.7-4.1) % using ABPM. Use of SBP would lead to an additional 22,323 adults being referred for treatment in the KHDSS.
Conclusion: Use of ABPM drastically reduced the number of individuals potentially requiring treatment. However, because no randomized intervention trials have yet been done in sSA, whether ABPM or repeated SBP are more appropriate targets of treatment requires more data.

P3.31
CORRELATION OF CENTRAL HAEMODYNAMICS WITH HEALTH-RELATED QUALITY OF LIFE

D. A. Vrachatis [1,2,3], A. Argyris [1], A. Papadopoulos [2], T. G. Papaioannou [3], E. Aissopou [1], G. Konstantonis [1], D. Niakas [2], P. Sfikakis [1], A. Protogerou [1]
[1]*Cardiovascular Research Laboratory, First Dpt. of Propedeutic Medicine, National & Kapodistrian University of Athens, Athens, Greece*
[2]*Faculty of Social Sciences, Hellenic Open University, Patras, Greece*
[3]*First Dpt. of Cardiology, National & Kapodistrian University of Athens, Athens, Greece*

Objectives: High blood pressure (BP) levels have been reported to have an inverse association with the health-related quality of life (HRQOL). Moreover, the value of central beyond peripheral haemodynamics has been illustrated by a series of studies. We sought to investigate potential correlations between central haemodynamics and HRQOL.
Methods: Brachial BP was evaluated with an automatic, oscillometric device (WatchBP, Microlife). Central haemodynamics (aortic BP, augmentation index (AIx), augmentation pressure (AP)) were assessed using applanation tonometry (SphygmoCor, AtCor). For HRQOL assessment the EQ5D instrument was utilized. EQ5D estimates five dimensions (mobility; self-care; usual activities; pain/discomfort; anxiety/depression) which are subdivided in three severity levels. These dimensions are transformed in an overall index, MVH-York-A1-tariff (0=worst, 1=best). Additionally, EQ5D involves a visual analogue scale (VAS) in which respondents self-rate their health state (0=worst, 100=best).
Results: A hundred and fifty consecutive subjects (80 males; 55±15 years old; BMI: 27.3±4.4 kg/m^2, 49% hypertensives, 10% diabetics) were included in the study. Average brachial/ aortic SBP was 131±16/ 121±17 mmHg, DBP was 78±9/ 79±9 mmHg. Average AIx/ AIx75bpm was 28.8±14.6/ 23.3±14.3, AP/ AP@75bpm 13.2±8.1/ 9.8±6.7 mmHg. Mean MVH-York-A1-tariff was 0.85±0.18, while VAS was 78.3±13.6. Peripheral haemodynamics were correlated neither with MVH-York-A1-tariff nor with VAS. However, a negative correlation between aortic SBP, AIx, AIx@75, AP, AP@75 and HRQOL indices was observed (Table).
Conclusions: In the present study, aortic SBP, AIx and AP were found to negatively correlate with HRQOL.

HRQOL indices & haemodynamics

	MVH York A1 tariff		VAS	
	C.C.	*p*	*C.C.*	*p*
Brachial SBP, mmHg	0,008	0,928	-0,099	0,238
Brachial DBP, mmHg	0,074	0,377	-0,103	0,218
Aortic SBP, mmHg	-0,061	0,469	-0,193*	**0,020**
Aortic DBP, mmHg	0,078	0,348	-0,102	0,221
AIx	-0,246**	**0,003**	-0,297**	**<0,001**
AIx @75bpm	-0,240**	**0,004**	-0,298**	**<0,001**
AP, mmHg	-0,218**	**0,008**	-0,299**	**<0,001**
AP @75bpm, mmHg	-0,199*	**0,016**	-0,298**	**<0,001**

AIx: Augmentation Index; AP: Augmentation Pressure; CC: Correlation Coefficient; DBP: Diastolic Blood Pressure; MBP: Mean Blood Pressure; PWV: Pulse Wave Velocity; SBP: Systolic Blood Pressure level of significance: *0.05, **0.01

P3.32
THE NUMBER OF METABOLIC SYNDROME RISK FACTORS CORRELATES WITH AORTIC STIFFNESS

Vágovičová Petra [1], Mlíková Seidlerová Jitka [1], Filipovský Jan [1], Mayer Otto [1], Wohlfahrt Peter [2], Cífková Renata [2]
[1]*Department of Internal Medicine II, Charles University, Pilsen, Czech Republic*
[2]*Department of Preventive Cardiology, Institute for Clinical and Experimental Medicine, Prague, Czech Republic*

Objectives: Metabolic syndrome (MS) is a cluster of ≥3 risk factors (RF). The presence of subclinical organ damage increases the risk of cardiovascular disease in patients with MS. Arterial stiffness and wave reflections are independent predictors of cardiovascular disease. The aim of our study was to compare pulse wave velocity (PWV) and parameters of wave reflections in subjects with different number of MS risk factors (definition of MS according to Czech guidelines: arterial hypertension or antihypertensive drug treatment, waist circumference, serum triglycerides or lipid-lowering drug treatment, HDL cholesterol, type 2 diabetes mellitus or impaired glucose tolerance).
Methods: We examined 936 respondents from the Czech general population (post-MONICA study). We measured aortic PWV, augmentation index (AIx) and central augmentation pressure (cAP) using SphygmoCor device. We divided subjects into 5 groups according to number of RF (0,1,2,3, ≥4). We used multivariate linear regression analysis to assess association between the number of RF and PWV, AIx and cAP after adjustment for age, gender, heart rate and MAP.
Results: 334 respondents (35.7 %) had MS. Subjects with MS were older (60.4±9.8 years vs. 51.0±13.6 years, p<0.0001) and had higher PWV than subjects without MS (9.0±2.3 m/s vs. 7.3±2.1 m/s, p<0.0001). After adjustment for covariates, the PWV ($p_{for\ trend}$ <0.0001), and cAP (p=0.025) were higher with increasing number of RF, while AIx was lower (p=0.020).
Conclusions: With growing number of metabolic syndrome risk factors, the aortic PWV and central augmentation pressure increase, while opposite is true for central augmentation index.

P4 Clinical and Basic Science

P4.01
PLASMA FIBULIN-1 IS INCREASED IN PATIENTS WITH ABDOMINAL AORTIC ANEURYSM BUT NOT PERIPHERAL ATHEROSCLEROTIC DISEASE

M.L Hansen [1,4], M.D Thomsen [2], J.S Lindholt [2,3,4], L.M Rasmussen [1,4]
[1]*Department of Clinical Biochemistry and Pharmacology,Odense University Hospital, Odense, Denmark*
[2]*Cardiovascular Research Unit, Viborg Hospital, Viborg, Denmark*
[3]*Department of Cardiovascular- and Thoracic Surgery, Odense University Hospital, Odense, Denmark*
[4]*Centre for Individualized Medicine In Arterial Diseases (CIMA), Odense University Hospital, Odense, Denmark*

Objectives: Fibulin-1 is an extracellular matrix protein that is increased in the arterial wall in diabetes. It is also present in plasma, where it is positively related to blood pressure and predicts mortality. In addition, plasma levels are associated with heart stiffness indices. The aim of this study was to evaluate the relation between plasma fibulin-1 and vascular diseases such as aortic abdominal aneurysm (AAA) and peripheral atherosclerotic disease (PAD).
Methods: Plasma levels of fibulin-1 were measured by ELISA in patients from an ongoing population-based screening trial for AAA, PAD and hypertension in men aged 65-74 years. Samples were obtained consecutively from 477 patients with AAA, 120 patients with PAD and AAA and 197 age-matched controls. AAA is defined as having a maximal aortic diameter > 30 mm and PAD as an ankle-brachial index (ABI) < 0.90.
Results: Plasma fibulin-1 in patients with AAA (86.2 μg/ml ± 1.01 μg/ml, mean±SEM) and controls (81.6 μg/ml. SEM ± 1.01 μg/ml) were significantly different (p=0.004), OR of 5.62 (95% C.I.: 2.29-13.79, p<0.000). In patients with additional PAD no differences in relation to controls was recognized. Fibulin-1 correlated positively to infra renal aortic size (R=0.125, p=0.001), age (R=0.174, p=0.000) and body mass index (R=0.132, p=0.001) but not to low ABI, blood pressure or AAA growth-rate. There was no difference in age between groups.
Conclusion: Plasma fibulin-1 was significantly higher in patients with AAA, but not in patients with additional PAD, which may be explained by an increase in extracellular matrix turnover related to AAA.