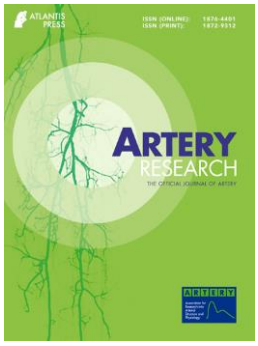

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P5.12: CAROTID-FEMORAL AND BRACHIAL PULSE WAVE VELOCITY IN PERIPHERAL ARTERIAL DISEASE

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P5.10
INFLUENCE OF OBESITY IN THE RELATIONSHIP BETWEEN CAROTID ARTERY FUNCTION AND CENTRAL BLOOD PRESSURE

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Background: Obesity blunts the association of cfPWV with BP, at least in youth. We assessed the impact of BMI in the relationship between carotid artery function (CAF) and central BP.
Methods: Stiffness index (β), Elastic modulus (Ep), Arterial Compliance (AC) and local PWV (PWVβ) were measured at the common carotid arteries by echo-tracking (Aloka prosound alpha 10), and central BP was assessed with the SphygmoCor device. Patients were classified into 3 groups according to BMI (<25 normal weight; ≥25-<30 overweight; ≥30 obesity). Linear regression models, Pearson's correlation coefficient and ANCOVA models (age, gender, heart rate and central PP as covariates) were performed.
Results: 222 patients (mean age 42.8 ± 14.2 years; 93 (42%) women; mean BMI 26.6 ± 4.4; 139 (62.6%) hypertensives, 104 (74.8%) under treatment). BMI categories: 85 (38.3%) normal weight, 88 (39.6) overweight, 49 (22.1%) obesity. Age, HR ,central PP showed significant positive association with CAF parameters. BMI categories and gender were not significantly associated with CAF parameters, except for overweight with PWVβ (p-value 0.02). There was no significant difference in β, Ep, AC and PWVβ between BMI groups after adjusting by covariates. Pearson's correlation coefficient between central SBP and CAF parameters was significantly lower if BMI≥25 (â: 0.46, 0.19, 0.13; Ep: 0.69, 0.43, 0.3; AC: -0.48, -0.37, -0.31; PWVâ: 0.66, 0.48, 0.36 for normal weight, overweight and obesity, respectively; p-value for overweight<0.001, p-value for obesity<0.05).
Conclusions: BMI categories are not closely related to CAF. BMI might blunt the increment of CAF parameters with rising central BP.

P5.11
PROXIMAL AORTIC REMODELING IS ASSOCIATED WITH LEFT VENTRICULAR MASS AND PULSE WAVE VELOCITY IN ESSENTIAL HYPERTENSION

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Background: Hypertension accelerates vascular ageing, leading to aortic stiffening and dilatation. We have few data about ascending aorta diameter (AoAsc) remodeling in hypertension. Recently published reference values for AoAsc enable us to evaluate the remodeling process.
Aim of our study was to evaluate in a cohort of essential hypertensives the association between the AscAo remodeling and markers of hypertension related organ damage as left ventricular mass (LVM) and aortic stiffening (cfPWV).
Methods: 629 essential hypertensives were included (age 53.2±13.4 yo; 73,6% men; Systo-diastolic blood pressure:139/82±16.9/11.4 mmHg). All subjects underwent a transthoracic echocardiography for the evaluation of LVM and AoAsc; we also measured aortic stiffening as carotid-femoral PWV (cfPWV) with validated tonometric device (SphygmoCor). Remodeling of AoAsc was defined as the difference between measured and expected aortic diameters in relation to age, BSA and sex.
Results: In this cohort mean AoAsc diameter was 35.6±5.38 mm, with a mean AoAsc remodeling of 3.26±4.28 mm. AoAsc remodeling was related to systolic, diastolic and mean blood pressure (MBP) (for MBP r=0.11; p=0.024). LVM (r=0.26; p<0.001) and cfPWV (r=0.14; p<0.001) were related to aortic remodeling: in multivariate analysis these associations were confirmed, independently from MBP (LVM:beta 0.23; cfPWV beta 0.18; p<0.05). AoAsc remodeling progressively increased from subjects with normal LVM and geometry to patients with concentric remodeling, eccentric and concentric hypertrophy (ANOVA p<0.001).
Conclusions: Essential hypertension leads to AoAsc remodeling (3 mm), related to both cardiac and vascular (cfPWV) damage: AoAsc remodeling could be a marker of early vascular ageing, carrying a potential prognostic value

P5.12
CAROTID-FEMORAL AND BRACHIAL PULSE WAVE VELOCITY IN PERIPHERAL ARTERIAL DISEASE

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Introduction: Peripheral arterial disease (PAD) is associated through its extensive atherosclerotic burden with both increased arterial stiffness and cardiovascular events. Recently, different non-invasive assessment devices that measure carotid-femoral or brachial pulse wave velocity (PWV) have become commercially available.
Aim: To compare PWV derived from carotid-femoral (cfPWV) or brachial (bPWV) assessments in patients with PAD.
Material and methods: Measurements of PWV with the two different non-invasive methods were performed as part of standard-of-care assessment in outpatients with PAD. Pulse wave velocities were assessed as bPWV by Mobil-O-Graph (ABPM by IEM; Stolberg, Germany), which is a brachial cuff-based method and as cfPWV by Vicorder (SMT Medical, Würzburg, Germany) an oscillometric technique for carotid and femoral pulse wave assessment. Differences between the two methods were compared by Mann Whitney U test and Bland Altman plot. Spearman rank correlation was performed to test for age dependency.
Results: In 67 Patients (35.8% female, mean age 69, range 39-91 years) bPWV (mean 10.5 ± 2.4 m/s) was significantly higher than cfPWV (mean 9.2 ± 2.1 m/s; p= 0.0013). Brachial PWV was related to age (r=0.935, p=<0.0001) whereas cfPWV did not (r=0.311, p=0.116). Bland Altman plot for bPWV and cfPWV resulted in a mean difference of -10.4 (+2 SD (4.31), -2 SD (-6.38)).
Conclusion: In patients with peripheral arterial disease, the gold standard assessment (cfPWV) differs from brachial PWV and lacks correlation with age. Aorto-femoral atherosclerotic burden may in part explain this finding since these arterial segments impact the difference in transit time in the femoral segment.

P5.13
THE RELATIONSHIP BETWEEN APOLIPOPROTEIN B/ APOLIPOPROTEIN A1 RATIO, HIGH SENSITIVITY C - REACTIVE PROTEIN AND SOME COMPONENTS OF METABOLIC SYNDROME IN BULGARIAN POPULATION

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The purpose of this study is to investigate the relations between apolipoprotein B (Apo B), apolipoprotein A1 (Apo A1), high sensitivity C- reactive protein (hsCRP) and the metabolic syndrome (MetS).
This study includes 500 clinically healthy people from Bulgaria - 201 (40,2%) men and 299 (59,8%) women. The following biomarkers are tested: apo B, apol A1, hsCRP, blood glucose, HDL-cholesterol, serum triglycerides (TG), LDL-cholesterol. One way ANOVA test, multiple comparison test of means and multiple logistic regression analyses are used.
The analysis shows that the odds of MetS for women increase by 1.08% for an increase of Apo B level with 1 mg/dl. When the level of hsCRP rises with 0.05 mg/l the odds of MetS for women increase with 1.9%. The odds of MetS for men increase by 4.75% for an increase of Apo B level with 1 mg/dl.
The odds of MetS for women increase by 1.77% for an increase of Apo B/Apo A1 ratio level with 0.01. When the hsCRP level rises with 0.05 mg/l the odds of MetS for women increase with 1.91%.
The hsCRP appears as the strongest indicator of MetS and it is more significant for women. The results for the first model indicate that the odds of MetS increase with rising of Apo B and hsCRP and decrease when Apo A1 increase. The results for the second model show that the odds of MetS increase with rising of Apo B/APO A ratio and hsCRP.

P5.14
IMPACT OF KIDNEY DONATION ON AORTIC STIFFNESS: A FEASIBILITY STUDY

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Background: Aortic pulse wave velocity (aPWV) is an important determinant of cardiovascular risk and predicts survival in patients on dialysis and other patient populations. Aortic stiffening is associated with a progressive decline in renal function whilst renal impairment results in accelerated aortic stiffening. However, existing studies are confounded by co-morbid illness. The aim of the current study was to better understand the impact of a reduction in renal function on aortic stiffness by examining blood pressure (BP) and aPWV in people undergoing donor nephrectomy, prior to, and 12 months following, donation.
Methods: 48 living donors (20 male) were recruited over a 3 year period. The average age was 51±13 years and there were 3 current smokers. Glomerular filtration rate (eGFR) was estimated, and aortic stiffness assessed by measuring carotid-femoral (aortic) PWV.