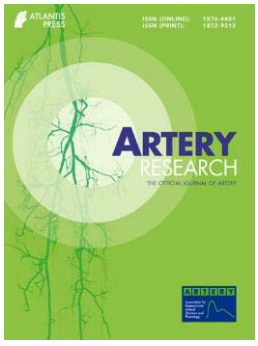

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P20: BRACHIAL AND RADIAL SYSTOLIC BLOOD PRESSURE ARE NOT THE SAME: POTENTIAL IMPLICATIONS FOR VALIDATION PROTOCOLS INCLUDING BRACHIAL CUFF DEVICES AND WRIST-BASED WEARABLES

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P18
AORTIC STIFFNESS IN AORTIC STENOSIS: SHORT TERM HEMODYNAMIC CHANGES AFTER TRANSCATHETER AORTIC VALVE IMPLANTATION

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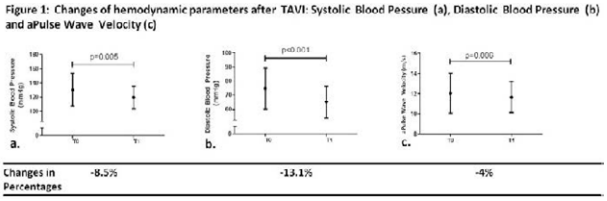
Background: Both aortic valve stenosis as aortic stiffness are moderators of arterio-ventricular coupling and independent predictors of cardiovascular morbidity and mortality. Studies on the effect of Transcatheter Aortic Valve Implantation (TAVI) on hemodynamic parameters are limited. We performed a pilot study to investigate possible short-term hemodynamic changes after TAVI in older patients.
Methods: TAVI Care & Cure is an observational ongoing study including consecutive patients undergoing TAVI procedure. Central and peripheral hemodynamic measurements were measured non-invasively 1 day before (T0) and 1 day after (T1) TAVI using a validated oscillometric method using a brachial cuff (Mobil-O-Graph).
Results: 40 patients were included. Mean aortic valve area at baseline was 0.73 ± 0.18 cm^2. As expected indices of severity of the aortic valve stenosis improved. Systolic blood pressure (SBP) dropped by 8.5%, from 130.3 ± 22.9 mmHg to 119.5 ± 15.8 mmHg ($p = 0.005$). Diastolic blood pressure (DBP) dropped by 13.1 % from 74.8 ± 14.5 mmHg to 65.0 ± 11.3 mmHg ($p < 0.001$). The aPulse Wave Velocity (aPWV) decreased from 12.05 ± 1.99 m/s to 11.6 ± 1.56 m/s ($p = 0.006$)(Fig. 1). Patients with high aPWV at baseline showed a significantly larger reduction in SBP in comparison to patients with low aPWV: - 20.3 mmHg (-14,1%) vs − 3,1 mmHg (-2.6%), respectively ($p = 0.033$). The same trend was found for the DBP: -16.2 (-20.4%) v.s. -4.5 mmHg (-6.3%) for high vs. low aPWV at baseline ($p=0.037$).
Conclusion: We found short term changes of blood pressure and aortic stiffness after TAVI. The amplitude of the changes was the largest in patients with elevated aortic stiffness at baseline.



P19
EFFECT OF GROWTH HORMONE REPLACEMENT IN THE VASCULAR SYSTEM OF ADULT PATIENTS WITH CHILDHOOD ONSET HYPOPITUITARISM

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Objective: To evaluate the human recombinant growth hormone replacement (hrGHr) in the metabolic parameters and vascular system in adult patients with childhood onset hypopituitarism (COH).
Patients and methods: Fifty-one adult with COH were selected for the study. They were divided into 2 groups: 1- hrGHr: 13 male, 14 female with median age 33.2 yrs, rhGHr in adult life with 7.38 yrs median time; 2 - Without hrGHr: 13 male, 11 female with 36.9 yrs median age and without hrGHr in adult life of 10.4 yrs median time. Anthropometric parameters, dual-energy X-ray absorptiometry (DEXA), lipid and glycemic profile, and structural and functional parameters of the arterial vessels (carotid intima media thickness, arterial stiffness and flow mediated dilation) were evaluated.
Results: The diagnosis of obesity and overweight was higher in patients without hrGHr. Among the anthropometric characteristics, the waist-to-height ratio and diastolic blood pressure were higher in patients without replacement ($p = 0.03$ and $p = 0.019$, respectively). In the evaluation of body composition through DEXA, the Fat Mass Index among patients under hrGHr was significantly lower than in patients without hrGHr ($p = 0.029$). Although no statistical difference in the vascular parameters between patients with and without hrGHr, it was observed a trend towards a higher arterial stiffness in the group without replacement ($p = 0.051$). In the group of patients without hrGHr, arterial stiffness had a significant and positive correlation with the time without hrGHr ($p = 0.038$).
Conclusions: These data suggest that the hrGHr in adults with COH may have protective effects on cardiovascular system.

P20
BRACHIAL AND RADIAL SYSTOLIC BLOOD PRESSURE ARE NOT THE SAME: POTENTIAL IMPLICATIONS FOR VALIDATION PROTOCOLS INCLUDING BRACHIAL CUFF DEVICES AND WRIST-BASED WEARABLES

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Introduction: Radial intra-arterial blood pressure (BP) is sometimes used as the reference standard for validation of brachial cuff BP devices, and there is an emerging 'wearables' market seeking to measure BP at the wrist. However, brachial systolic BP may not be a good representation of the radial systolic BP, and this could have implications for appropriate BP validation protocols. This study sought to determine the difference between brachial and radial systolic BP.
Methods: Intra-arterial BP was measured consecutively at the brachial and radial arteries in 168 participants undergoing coronary angiography (aged 62 ± 10 years, 69% male). Intra-arterial BP recordings were made via fluid filled catheter according to guideline recommendations.
Results: Brachial systolic BP was lower than radial systolic BP (136.5 vs 143.9 mmHg; $p<0.001$). Only 40% of participants had a brachial systolic BP within ±5 mmHg to radial systolic BP (138.1 and 138.5 mmHg, $p = 0.15$). Additionally, 25% and 17% of participants had systolic BP differences of 5 to 10 mmHg (132.7 and 139.9 mmHg respectively, $p < 0.001$) and 10 to 15 mmHg (132.2 and 144.4 mmHg respectively; $p < 0.001$). A further 18% had systolic BP differences >15 mmHg (140.3 and 161.3 mmHg; $p < 0.001$).
Conclusion: Radial systolic BP is not representative of brachial systolic BP, with the majority of participants having a systolic BP difference greater than 5 mmHg between brachial and radial arteries. Therefore, if validation testing of BP devices is performed with intra-arterial BP as the reference standard, this should be undertaken at the same site as the brachial cuff or wrist based wearable device.

P21
CHARACTERIZATION OF AN ATHEROSCLEROTIC PHENOTYPE

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Background: Interaction between gentics and epigenetics has been largely described in Atherosclerotic Disease and the relations varies widely according to the population, clinical characteristics and the study type.
Objective: Compare genetic and epigenetic factors in two middle age populations with and without plaques.
Methods: A retrospective cohort study from a database of 6381 p. first ever Non Invasive Vascular Evaluations (NIVE) (IMT, plaques, PWV and Endothelial Function (EF)). We analyzed 1876 p. 40–45 y.o. (29.4%) and particularly 179 (2, 8%) without CV Drugs, 80 w/o (P-) and 99 with C-F plaques (P+).