P125: ESTIMATION OF MEAN ARTERIAL PRESSURE IN NON-INVASIVE STUDIES

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respective). Carotid-radial PWV reliably declined only in the 1st group (from 9.5 ± 1.8 to 8.8 ± 1.1 m/s; p = 0.034).

Conclusion: Addition of rosuvastatin to a fixed lisinopril/amiodipine combination has proved to be more effective than lisinopril/hydrochlorothiazide plus rosuvastatin combination in terms of impact on central aortic systolic BP and carotid-radial PWV.

P123
UNATTENDED AND ATTENDED BP VALUES AND VASCULAR AND CARDIAC ORGAN DAMAGE
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It has been suggested that measurement of “unattended” blood pressure values may provide advantages over conventional BP measurement; some hypertension guidelines now suggest this approach as the preferred one for measuring office BP. Data on the relationship between unattended BP and cardiovascular events are less solid as compared to those obtained with attended BP; only few studies suggested that unattended BP might be more strictly correlated with hypertensive target organ damage than “attended” BP. Aims: to evaluate the relationship between “attended” or “unattended” BP values and target organ damage in 261 subjects attending the outpatient clinic of an ESH-Excellence-Centre. BP values were measured by the physician with an automated oscillometric device (Omron HEM9000Ai, mean of 3 measurements), after 5 minutes of rest; thereafter, the patient was left alone and unattended BP was measured automatically after 5 minutes (3 measurements at 1 minute interval).

Results: mean age was 61 ± 16yrs, BMI 26.1 ± 4.2, 60% female, 88% hypertensives (64% treated). Systolic unattended BP was lower as compared to attended SBP (130.1 ± 15.7 vs 138.6 ± 17.2 mmHg). Left ventricular mass index (LVMI) was similarly correlated with unattended and attended SBP (r = 0.132 and r = 0.133, p < 0.05 respectively). LVMI was similarly correlated with unattended and attended SBP (r = 0.277 and r = 0.299, p < 0.05 respectively). Carotid IMT was significantly and similarly correlated with both attended and unattended BP values (r = 0.172 and r = 0.153 for attended and unattended SBP, p < 0.05 and: r = 0.459 and r = 0.436 for attended and unattended PP, p < 0.001). The differences between correlations were not statistically significant.

Conclusion: Measurement of BP “unattended” or “unattended” provides different values, being unattended BP lower as compared to attended BP. Our results suggest that attended and unattended BP values are similarly related with cardiac and vascular hypertensive target organ damage.

P124
CENTRAL BLOOD PRESSURE MEASUREMENT: PARADIGM SHIFT
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Introduction: It is estimated that currently 17 million deaths annually in the world occur due to cardiovascular disease (CV), about one third of all deaths. 9.4 million are related to arterial hypertension (HA). The use of methods that allow the early identification of structural and functional cardiovascular alterations can improve the strategy of treatment and control of these patients.

Description: LSO, 65 years old, female, white. Ringing in the ear and headache. Hypertension for 18 years and panic syndrome using Candesartan 8 mg, Fluoxetine 20 mg and Alprazolan 0.5 mg. In 06-2016, presenting blood pressure (BP): 172 x 104 mmHg. Candesartan was elevated to 16 mg, Initiative Rosuvastatin 10 mg (C-reactive protein:16 and LDL-C:142), targeted improvement of lifestyle habits. ABPM 2 weeks after normal. Returned on 10-2017 with tachycardia and dizziness. She stopped Fluoxetine and Rosuvastatin plus a combination of medications: 1.8 to 8.8 mmHg and augmentation index (AI): 50 was performed. Felodipine -2.5 mg was started even with the new normal ABPM. 4 months later new measures with central BP:128 and AI = 33-table 1.

Conclusion: The treatment of HA depends on the choice of the drug and early onset with reduction of BP and CV outcomes 3.4. The central BP has greater relevance in the reduction of BP and cardiovascular outcomes than the peripheral BP 5.6. Keywords: Hypertension; Central Blood Pressure; Arterial Stiffness.

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P125
ESTIMATION OF MEAN ARTERIAL PRESSURE IN NON-INVASIVE STUDIES
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Background: Mean arterial pressure (MAP) is required for many hemodynamic calculations. Most automated devices do not report MAP and a form factor (FF) is used to estimate it from systolic and diastolic blood pressure (BP). The appropriate choice of FF in the brachial artery is controversial: 0.33 is the traditional value, but invasive measurements report a value of 0.4. [1] Non-invasive studies have provided some support for FF = 0.4 but have usually not measured MAP directly, nor used brachial blood pressure waveforms, or accounted for BP measurement errors. We addressed these issues in a sample of white Europeans drawn from the Southall and Brent Revisited study.

Methods: BP was measured using a PulseCor device (USCOM). Form factors (FFosc and FFwave) were calculated as (MAP-diastolic BP)/(systolic BP-diastolic BP) using MAPosc calculated by oscillometry and MAPwave calculated as the waveform mean respectively.

Results: Data are mean ± SD of 527 observations (Table 1). Fosco was lower than FFwave and use of FF = 0.4 (MAP0.4) overestimated MAPosc. Allowing for measurement errors based on [2-3] gave estimates of MAPwave that were more similar to MAPosc.

P127 SPATIAL VARIATION OF RESERVOIR PRESSURE IN CHILDREN ASSESSED WITH HIGH FIDELITY PRESSURE MEASUREMENT IN FIVE AORTIC LOCATIONS
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Objective: To assess whether reservoir pressure (Pres) in young individuals with a compliant aorta is uniform throughout the aorta, as has recently been reported in older adults with cardiovascular disease (1).

Methods: High fidelity pressure was measured with a Verrata wire (Philips Volcano) in 5 aortic locations (ascending-to-abdominal) via pull-back in 11 children with a normal aorta (age 10.4 ± 4.9 years, mean ± SD). Pres was calculated using the ‘pressure-only’ approach (2), with exponential fitting over the whole of diastole (1) (WholeDia) or the period when pressure declined in an approximately exponential fashion (ExpDia).

Results: ExpDia produced a better fit than WholeDia (R2 = 0.99 ± 0.01 vs 0.91 ± 0.11, P < 0.001). P_inf amplitude (ΔP_es) in the ascending aorta from WholeDia fitting (12.0 ± 4.1 mmHg) was less than with ExpDia fitting (19.0 ± 5.2, P = 0.001). The zero-flow asymptotic pressure (P_inf) obtained from the fitting procedure was negative (non-physiological) in 76% (WholeDia) and 44% (ExpDia) of recordings, but fixing P_inf to 37 mmHg (average of both P_inf) produced a better fit than WholeDia (R2 = 0.99 ± 0.001). P_inf amplitude (ΔP_es) in the ascending aorta from WholeDia fitting (12.0 ± 4.1 mmHg) was less than with ExpDia fitting (19.0 ± 5.2, P = 0.001). The zero-flow asymptotic pressure (P_inf) obtained from the fitting procedure was negative (non-physiological) in 76% (Whole-Dia) and 44% (ExpDia) of recordings, but fixing P_inf to 37 mmHg (average of both P_inf) produced a better fit than WholeDia (R2 = 0.99 ± 0.001). Pres amplitude (ΔP_es) in the ascending aorta from WholeDia fitting (12.0 ± 4.1 mmHg) was less than with ExpDia fitting (19.0 ± 5.2, P = 0.001). The zero-flow asymptotic pressure (P_inf) obtained from the fitting procedure was negative (non-physiological) in 76% (WholeDia) and 44% (ExpDia) of recordings, but fixing P_inf to 37 mmHg (average of both P_inf) produced a better fit than WholeDia (R2 = 0.99 ± 0.001). P_inf amplitude (ΔP_es) in the ascending aorta from WholeDia fitting (12.0 ± 4.1 mmHg) was less than with ExpDia fitting (19.0 ± 5.2, P = 0.001). The zero-flow asymptotic pressure (P_inf) obtained from the fitting procedure was negative (non-physiological) in 76% (WholeDia) and 44% (ExpDia) of recordings, but fixing P_inf to 37 mmHg (average of both P_inf) produced a better fit than WholeDia (R2 = 0.99 ± 0.001).

Conclusion: In young individuals, P_inf was sensitive to the fitting period and often resulted in non-physiological P_inf values. Regardless of calculation method or alignment, P_inf was not uniform along the aorta.

References

P128 RADIAL INTIMA-MEDIA THICKNESS ASSESSMENT BY ULTRA-HIGH FREQUENCY ULTRASOUND AND AUTOMATED IMAGE-ANALYSIS IN HEALTHY VOLUNTEERS
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Background: Ultrahigh-frequency ultrasound may represent a powerful tool for investigating the arterial properties of medium and small-size arteries. Aim of this study was: 1) to evaluate intra- and inter-operator reproducibility of radial artery vascular parameters (intima-media thickness — IMT- and diameter —DD), obtained both with a manual and an automatic approach; 2) to identify physiological correlates of radial IMT.

Methods: 40 healthy subjects were examined by Vevo MD (FUJIFILM, VisualSonics, Toronto, Canada); in 11 volunteers two B-mode clips (longitudinal view) of the radial artery were acquired for each subject by two skilled operators. IMT DD were measured manually and using an automatic software (Cardiovascular Suite, QUIPU, Pisa, Italy). Coefficient of variations (CV) and Bland-Altman analysis were employed.