P58: ARTERIAL STIFFNESS IS ASSOCIATED WITH LOWER PERFORMANCE ON THE COGNITIVE TESTS AT DIFFERENT DOMAINS IN HYPERTENSIVE PATIENTS

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Methods: Cross-sectional, observational study in 171 consecutive, treatment-naive subjects derived to a Hypertension Unit with suspected hypertension. Standard echocardiography, ECG, carotid ultrasound and laboratory tests were performed.

Results: Mean age was 49.7 years, 57.3% were women. Reproducibility: Mean differences ± SD of the difference (SDD) between duplicate SC and MG PWV measurements were non-significant. Agreement: cfPWVsub: estimated aortic PWV in supine position.

supPWVestim (7.83 m/s, 0.001), with supPWVestim (0.38 m/s, p = 0.002). No significant correlation was found between the mean and the difference for PWV in any comparison. Association with cardiac damage was highest with cfpPWVsub, supPWVestim and sitPWVestim were more closely related to carotid damage, though differences were not significant.

Table 3. Differences between PWV measured by applanation tonometry according to two surface measurements and by brachial oscilometry according to supine ox sitting position.

<table>
<thead>
<tr>
<th>Comparison of PWV</th>
<th>Mean difference</th>
<th>CI</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>cfPWVsub-supPWVestim</td>
<td>0.16</td>
<td>-0.06/0.37</td>
<td>0.149</td>
</tr>
<tr>
<td>cfPWVsub-sitPWVestim</td>
<td>0.18</td>
<td>-0.03/0.39</td>
<td>0.098</td>
</tr>
<tr>
<td>cfPWV0.8-supPWVestim</td>
<td>0.38</td>
<td>0.15/0.62</td>
<td>0.002</td>
</tr>
<tr>
<td>cfPWV0.8-sitPWVestim</td>
<td>0.39</td>
<td>0.15/0.63</td>
<td>0.001</td>
</tr>
<tr>
<td>cfpPWVsub-supPWVestim</td>
<td>0.23</td>
<td>0.12/0.35</td>
<td>0.000</td>
</tr>
<tr>
<td>cfpPWVsub-sitPWVestim</td>
<td>0.02</td>
<td>-0.07/0.12</td>
<td>0.635</td>
</tr>
</tbody>
</table>

Conclusions: SC and MG showed similar and acceptable reproducibility. SC and MG were interchangeable only using subtracted distance (cfPWVsub), while direct distance x 0.8 showed significantly higher PWV values. Association to TOD was similar and significant between SC and MG.

P59 ARTERIAL STIFFNESS AND PERIPHERAL VASCULAR RESISTANCE IN OFFSPRING OF HYPERTENSIVE PARENTS — INFLUENCE OF GENDER AND OTHER CONFOUNDERS
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Aim: Established essential hypertension (EH) is associated with increased arterial stiffness and peripheral resistance, but the extent of vascular changes in persons genetically predisposed for EH is uncertain.

Methods: Participants from the Danish Hypertension Prevention Project (DHyPP) (having two hypertensive parents) (n = 95, 41 ± 1 years, 53% males) were compared to available spouses (n = 45, age 41 ± 1 years, 43% males). The subjects had measurements of ambulatory blood pressure (BP), left ventricular mass (LVM), pulse wave velocity (PWV), central BP and augmentation index (Alx) in addition to forearm resting and minimal resistance (Rmin and Rres).

Results: DhPP participants with and without spouses were comparable and the DhPP cohort, as compared to spouses, had higher 24-hour mean BP (94 ± 1 vs. 88 ± 1 mmHg, P < 0.01), lower Rmin and Rres (51 ± 2 vs. 55 ± 3 mmHg/ml/min/100 ml; P < 0.01) and the same was true for Alx and Rres among spouses (P < 0.01) for all. The subjects had measurements of ambulatory blood pressure (BP), left ventricular mass (LVM), pulse wave velocity (PWV), central BP and augmentation index (Alx) in addition to forearm resting and minimal resistance (Rmin and Rres).

Conclusion: Young to middle-aged individuals genetically predisposed for EH display increased Alx, while vascular stiffness and peripheral resistance are still normal.

P60 PSYCHOLOGICAL DETERMINANTS OF TARGET ORGAN DAMAGE IN HYPERTENSIVE PATIENTS: FOCUS ON PULSE WAVE VELOCITY AND DEPRESSION
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Background: Cognitive impairment and elevated arterial stiffness are described in arterial hypertension (AH), but its correlations are not well studied.

Objectives: To study the cognitive function at different domains and arterial properties in patients with AH stage 1 to 3 compared to normotensives and to evaluate the correlations between these variables.

Methods: We evaluated 71 normotensives (52 ± 14 yrs, 47% male, 65% white) and 150 patients with stage 1–3 AH (52 ± 12 yrs, 45% male, 70% white) under treatment.

The global cognitive function was assessed by Mini Mental State Examination (MMSE) and Montreal Cognitive Assessment (MoCA). A validated battery of psychological tests (NPE) assessed the main cognitive areas: memory, language, visuospatial ability, executive function, attention. Pulse wave velocity (PWV) was measured by Pulsocor® device. Carotid properties were assessed by radiofrequency ultrasound (WTS®). Central arterial pressure and augmentation index (Alx) were obtained using a sphygmocor® device. Carotid properties were assessed by radiofrequency ultrasound (WTS®).

Results: Mean BP of the normotensive group (122.1 ± 8/76.7 ± 7 mmHg) was significantly lower than hypertensive patients (135.2 ± 18/83.3 ± 10 and 149.9 ± 29/91.1 ± 16 mmHg). Severe HTN group had worse performance in cognitive evaluation either by MMSE (26.8 ± 2.1 vs. 27.4 ± 2.1 vs. 28.0 ± 2.0, p = 0.004) or MoCA test (23.4 ± 3.7 vs. 24.9 ± 2.8 vs. 25.3 ± 3.2, p < 0.001). On the neuropsychological tests hypertensive patients had worse performance mainly in visuospatial and visuospatial capacities and executive function. On the multivariate regression analysis, the following independent associations were observed: Alx—language, executive function, visuospatial and attention; cSBP—MoCA; IMT—memory and attention; PWV—memory, executive function, visuospatial and attention. Higher PWV group had more cognitive dysfunction.

Conclusion: Cognitive impairment at different domains was more frequent in patients with different stages of AH. Arterial functional and structural properties were diversely associated with cognitive performance at different domains.