P59: ARTERIAL STIFFNESS AND PERIPHERAL VASCULAR RESISTANCE IN OFFSPRING OF HYPERTENSIVE PARENTS – INFLUENCE OF GENDER AND OTHER CONFOUNDERS

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Methods: Cross-sectional, observational study in 171 consecutive, treatment-naïve 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: cfPWV0.8 yielded the highest PWV values (8.17 ± 1.6 m/s), followed by cfPWVsub (7.98 ± 1.7 m/s), supPWVestim (7.83 ± 1.7 m/s) and sitPWVestim (7.80 ± 1.6 m/s).

We observed significant mean differences only between cfPWV0.8 and all other PWV measures: with cfPWVsub (0.23 m/s, p = 0.001), with sitPWVestim (0.19 m/s, p = 0.001) and 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 cfPWVsub, supPWVestim and sitPWVestim 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 CI p</th>
</tr>
</thead>
<tbody>
<tr>
<td>cfPWVsub-supPWVestim</td>
<td>0.16 [-0.06/0.37] 0.149</td>
</tr>
<tr>
<td>cfPWVsub-sitPWVestim</td>
<td>0.18 [-0.03/0.39] 0.098</td>
</tr>
<tr>
<td>cfPWV0.8-supPWVestim</td>
<td>0.38 [0.15/0.62] 0.002</td>
</tr>
<tr>
<td>cfPWV0.8-sitPWVestim</td>
<td>0.39 [0.15/0.63] 0.001</td>
</tr>
<tr>
<td>cfPWV0.8-cfPWVsub</td>
<td>0.23 [0.12/0.35] 0.000</td>
</tr>
<tr>
<td>supPWVestim-sitPWVestim</td>
<td>0.02 [-0.07/0.12] 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 significant and similar 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, age 1–71 years, 53% males) were compared to available spouses (n = 45, age 41–71 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 (AIx) in addition to forearm resting and minimal resistance (Rrest and Rmin).

Results: DHyPP subjects with and without spouses were comparable and the DHyPP cohort, as compared to spouses, had higher 24-hour mean BP (94 ± 1 vs. 84 ± 1 mmHg, P < 0.01), LVM (90 ± 2 vs. 80 ± 2 g/m², P < 0.01), central systolic BP (119 ± 2 vs. 111 ± 2 mmHg, P < 0.01) and AIx (15.1 ± 1.2 vs. 10.5 ± 1.7%, P < 0.01), but similar values of carotid-femoral PWV (7.3 ± 0.1 vs. 7.1 ± 0.2 m/s), Rrest (51 ± 2 vs. 51 ± 3 mmHg/ml/min/100 ml) and log Rmin (0.57 ± 0.02 vs. 0.55 ± 0.02 mmHg/ml/min/100 ml). AIx, Rrest and Rmin were higher in female as compared to male DHyPP participants (P < 0.01 for all) and the same was true for AIx and Rrest among spouses (P < 0.05).

Using multiple linear regression analysis adjusting for gender, age, body mass index, 24-hour BP, 24-hour sodium excretion and creatinine clearance, AIx remained elevated in DHyPP subjects (3.4% [0.18; 6.60], P = 0.039).

Furthermore, AIx was linearly associated with Rmin among spouses (P < 0.05).

Conclusion: Young to middle-aged individuals genetically predisposed for EH display increased AIx, 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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Objective: Prior studies have suggested that the principal determinants of arterial stiffening are age, BP and other CV risk factors such as dyslipidemia...