P27: INVASIVE CENTRAL PULSE PRESSURE IS RELATED TO AORTIC ROOT DILATATION

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To cite this article: Francesco Tosello, Andrea Guala, Dario Leone, Martina Bollati, Luca Sabia, Fabrizio D’Ascenzo, Claudio Moretti, Franco Veglio, Luca Ridolfi, Alberto Milan (2018) P27: INVASIVE CENTRAL PULSE PRESSURE IS RELATED TO AORTIC ROOT DILATATION, Artery Research 24:C, 87–87, DOI: https://doi.org/10.1016/j.artres.2018.10.080

To link to this article: https://doi.org/10.1016/j.artres.2018.10.080

Published online: 7 December 2019
removal) to aortic mean and diastolic BP. For MoG, central pressure was derived through standard systolic-diastolic calibration (MoGC1) as well as mean-diastolic calibration (MoGC2).

Results: Means ± SD differences between device and intra-arterial BP are presented in the Table. There was moderate correlation between device and intra-arterial brachial systolic BP (R = 0.58 XCEL, R = 0.47 MoG, P < 0.01) and central systolic BP (R = 0.69 XCEL, R = 0.64 MoGC1, R = 0.43 MoGC2, P < 0.01). Intra-arterial central-to-brachial pulse amplification factor was 1.17 ± 0.16 (range 0.88 to 1.55), but there was no correlation between device and intra-arterial amplification (R = 0.07 XCEL, R = 0.07 MoGC1, R = 0.19 MoGC2, P > 0.18). Results in sub-groups >13 and <13 years were similar.

Conclusion: Both oscillometric devices overestimated brachial and central systolic/pulse BP, exceeding the validation criteria of 5 ± 8 mmHg, and there was no correlation between intra-arterial and device-derived central-to-brachial pulse amplification. Diastolic BP was acceptable.

<table>
<thead>
<tr>
<th>Device</th>
<th>Systolic</th>
<th>Diastolic</th>
<th>Pulse</th>
</tr>
</thead>
<tbody>
<tr>
<td>XCEL</td>
<td>11.2 ± 8.9</td>
<td>-1.7 ± 6.0</td>
<td>13.0 ± 10.1</td>
</tr>
<tr>
<td>MoG</td>
<td>12.9 ± 11.7</td>
<td>-4.7 ± 5.4</td>
<td>17.9 ± 11.4</td>
</tr>
<tr>
<td>XCEL</td>
<td>9.8 ± 6.6</td>
<td>0.7 ± 2.2</td>
<td>5.0 ± 7.7</td>
</tr>
<tr>
<td>MoGC1</td>
<td>7.7 ± 10.3</td>
<td>-3.1 ± 6.1</td>
<td>10.6 ± 11.6</td>
</tr>
<tr>
<td>MoGC2</td>
<td>22.3 ± 14.3</td>
<td>-3.2 ± 6.6</td>
<td>25.4 ± 15.0</td>
</tr>
</tbody>
</table>

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INVASIVE CENTRAL PULSE PRESSURE IS RELATED TO AORTIC ROOT DILATATION

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Background: Aortic root dilation is an established risk factor for aortic dissection. Despite the relations between aortic root remodeling, carotid-femoral pulse wave velocity (cfPWV) and aortic blood pressure have been advocated by several clinical studies and is supported by physical law, invasive data are lacking. We aimed to investigate the relationship between aortic root remodeling, invasively-measured central blood pressure and cfPWV in patients referred for invasive hemodynamic evaluation for suspected coronary disease.

Methods: In 71 patients aortic pulse pressure (aOPP) was measured in the proximal aorta with a calibrated fluid-filled pressure catheter. Before entering the hemodynamic room all patients underwent 2D echocardiographic quantification of aortic root diameter and measurement of cfPWV. Aortic root diameter was then expressed into z-score following age, sex and height adjusted reference values (1).

Results: Mean age was 67 ± 10 years and 76.1% of patients were men. Invasive aortic systolic pressure was 146 ± 23 mmHg, diastolic pressure was 78 ± 13 mmHg, and aOPP was 68 ± 21 mmHg. Aortic Z-score was -0.32 ± 1.7, while cfPWV was 9.8 ± 3 m/s. While Log10cfPWV and aOPP showed a positive relation (r = 0.426, p < 0.01) and aPP and aortic Z-score were inversely associated (r = -0.271, p = 0.02). In a multivariable linear regression analysis, Z-score and Log cfPWV were statistically-significant independent predictors of aOPP (p = 0.01 and p < 0.01, respectively) after adjustment for age, sex, BSA, heart rate, invasive ABP, and stroke volume.

Conclusions: In a population referred to invasive coronary hemodynamic evaluation for suspected coronary disease, aortic root remodeling and aortic stiffness were independently associated with a lower aOPP.

References

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MECHANISMS OF VASCULAR ENDOTHELIAL GROWTH FACTOR INHIBITION INDUCED HYPERTENSION

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Introduction: Drugs targeting Vascular Endothelial Growth Factor (VEGF) signaling pathway are approved therapies for cancer. Unfortunately, VEGF