between WS and CF-PWV was 1.15±3.58, with all measurements but one within ±2sd. Both ‘Beta’ and ‘Epsilon’ derived by E-track also correlated directly with CF-PWV (r=0.50 and 0.55, respectively, p<0.005) but not with CR-PWV. Finally, the known correlations with age and pulse pressure were confirmed for both CF-PWV and WS (r between 0.40 and 0.65).

Conclusions: Common carotid artery stiffness and local wave speed appear representative of aortic stiffness as estimated by CF-PWV. New techniques for arterial wall tracking implemented on cardiovascular ultrasound equipments can expand information provided by carotid artery scan in echo-lab.

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Comparison of feasibility and accuracy of transthoracic echocardiography vs computed tomography in patients with ascending aortic aneurysm
G. Tamborini 1 ; G. Pepi 1 ; G. Pontone 1 ; D. Andreini 1 ; C.A. Galli 1 ; A. Maltagliati 1 ; G. Ballerini 1

Aortic (AO) valve diseases, arterial hypertension and connective tissue disorders may be causes of AO aneurysm. AO enlargement monitoring is essential both for the surgical timing and for the operative design. In this regard other imaging techniques may have several limitations: magnetic resonance is not widespread and is expensive, computed tomography (CT) utilised radiations and transoesophageal echocardiography is a semi-invasive method.

Aim of the present study was to compare transoesophageal aortic echocardiography (TEE) evaluation of AO dimensions and its accuracy in comparison with CT. In 44 patients (pts) with ascending aortic aneurysm TTE and CT measurements were obtained and compared at different levels (Figure): annulus (1), sinuses of Valsalva (2), aortic arch (3), ascending aorta (4), aortic arch (5). Inter- and intra-observer variability were evaluated for both techniques. TTE diameters were obtained in all patients, apart from aortic arch which was measured in 40 cases. TTE and CT diameters correlated significantly (p<0.001) with a very small standard estimated error (SEE): annulus (r=0.846, SEE=0.37), sinuses of Valsalva (r=0.967, SEE=0.32), ascending aorta (r=0.969, SEE=0.33), ascending aorta (r=0.976, SEE=0.41), aortic arch (r=0.87, SEE=0.50). Inter- and intra-observer variabilities of the TTE measurements were 2.7 mm (6%) and 1.3 mm (3%) respectively.

Conclusions: TTE is a feasible and accurate technique for the assessment and follow-up of thoracic aortic diameters in patients with ascending aortic aneurysm and can integrate other imaging techniques in AO dimensions monitoring.

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Aortic valve replacement for aortic stenosis is associated with improved aortic distensibility at long-term follow-up
A. Nemes 1 ; T.W. Galemna 1 ; M.L. Geleinse 1 ; O.I. Soliman 1 ; A.M. Anwar 1 ; S.C. Yap 1 ; F.J. Ten Cate 1

Background: Aortic valve stenosis (AS) is the most frequent form of valvular heart disease. The number of studies evaluating the effect of aortic valve replacement (AVR) for AS on an aortic vascular function is limited. The aim of the present study was to examine alterations in aortic distensibility in AS patients during a one-year follow-up after AVR.

Methods: Twelve patients with severe AS who underwent AVR were prospectively investigated (mean age 65±11 years, 7 males). Systolic and diastolic ascending aortic diameters (SD and DD, respectively) were recorded in M-mode 3 cm above the aortic valve from a parasternal long-axis view. The SD and DD were measured at the time of maximum anterior motion of the aorta and at the start of the QRS complex, respectively. Aortic stiffness index was defined as the natural logarithm of (SBP/DBP)/(SD-DD)/DD, where SBP and DBP are the systolic and diastolic blood pressure values. The SD and DD were measured at the time of maximum anterior motion of the aorta and at the start of the QRS complex, respectively. Aortic stiffness index was defined as the natural logarithm of (SBP/DBP)/(SD-DD)/DD, where SBP and DBP are the systolic and diastolic blood pressure values.

Results: Data are presented in the table.

Table 1

<table>
<thead>
<tr>
<th>Controls</th>
<th>Before AVR</th>
<th>3 weeks after AVR</th>
<th>6 months after AVR</th>
<th>12 months after AVR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mass (g)</td>
<td>234±4.5</td>
<td>397±288</td>
<td>284±100</td>
<td>241±58</td>
</tr>
<tr>
<td>Peak aortic pressure (mm Hg)</td>
<td>90.5±2.4</td>
<td>18.5±8.3</td>
<td>15.0±4.5</td>
<td>18.7±5.1</td>
</tr>
<tr>
<td>Aortic SD (mm)</td>
<td>53.3±1.9</td>
<td>9.3±4.5</td>
<td>8.4±2.4</td>
<td>9.3±2.5</td>
</tr>
<tr>
<td>Aortic DD (mm)</td>
<td>2.3±1.1</td>
<td>1.1±0.5</td>
<td>1.1±0.6</td>
<td>1.7±0.9</td>
</tr>
</tbody>
</table>

Conclusions: AVR in AS patients is associated with a progressive improvement in aortic distensibility to one year values similar to age, gender and risk factor-matched controls.