Pulmonary artery pulse pressure: A simple parameter to predict reversible PAH in Eisenmenger syndrome

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Predicting reversibility of PAH remains a difficult task.

Cath derived PVR is a cumbersome and error prone procedure.

Has dangerously low reproducibility as it involves too many measurements and calculations.
The art of calculating complex shunts in cath lab ...
It remains a fact cath derived PVR is a battered gold standard (14 carrot ?)

Hence there is a need for a simple but accurate method to assess PAH and it’s reversibility
Concept

We hypothesied *Pulmonary artery* diastolic pressure, *pulse pressure*. (PADP, PAPP) can provide a vital predictive value in the reversibility of PAH as they are directly linked to PVR.
Cardiac output

Diastolic pressure

Systolic pressure

Pulmonary vascular resistance
The aim of this study is to analyse the PAPAP and PADP with reference to PVR and reversibility of PAH.
5 patients with VSD -4 , PDA-1 with the clinical diagnosis of Eisemenger syndrome were studied. They underwent cardiac cath study.
## Results

<table>
<thead>
<tr>
<th>Age</th>
<th>Shunt</th>
<th>MPA Peak</th>
<th>MPA diastolic (PADP)</th>
<th>PA pulse pressure (PAPP)</th>
<th>Shunt Qp/Qs</th>
<th>PVR Wood units</th>
<th>PVR Response to 100% O2</th>
<th>Surgical Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>F 8</td>
<td>VSD</td>
<td>96</td>
<td>40</td>
<td>56</td>
<td>1.8:1</td>
<td>9.0</td>
<td>9.2</td>
<td>Not done</td>
</tr>
<tr>
<td>M 14</td>
<td>VSD</td>
<td>82</td>
<td>52</td>
<td>30</td>
<td>1.2:1</td>
<td>12.8</td>
<td>10.5</td>
<td>Inoperable</td>
</tr>
<tr>
<td>F 15</td>
<td>PDA</td>
<td>106</td>
<td>44</td>
<td>62</td>
<td>1.6:1</td>
<td>11.0</td>
<td>9.6</td>
<td>Good</td>
</tr>
<tr>
<td>F 9</td>
<td>VSD</td>
<td>104</td>
<td>48</td>
<td>56</td>
<td>1.8:1</td>
<td>10.2</td>
<td>9.0</td>
<td>Good</td>
</tr>
<tr>
<td>M 16</td>
<td>VSD</td>
<td>98</td>
<td>58</td>
<td>40</td>
<td>1.5:1</td>
<td>14.5</td>
<td>13.6</td>
<td>Inoperable</td>
</tr>
</tbody>
</table>
Even though it is a small observation involving 5 patients it suggests there is possible true correlation between PAPP and PADP with PVR and reversibility of PAH.

Ironically we have compared with a standard that is less than ideal since We have no other option
Narrow pulmonary pulse pressure

Irreversible pulmonary HT

Wide pulmonary pulse pressure

Reversible pulmonary HT
We conclude PAPP and PADP could be a simple, useful additional parameter to assess the reversibility of PAH in Eisenmenger syndrome. Further scrutiny of this concept is warranted.