Abstract: P954

Paps / Actpo ratio indicator of pulmonary arterial ventricle coupling in normal subjects and in pulmonary hypertension

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Topic(s):
Echocardiography, Other

Citation:
In Pulmonary Hypertension (PH), the development of dilatation and right ventricular failure (RV) are signs of accelerated progression of the disease resulting in an increased risk of cardiac death, and right ventricular failure. Even the non-invasive assessment of the systolic blood pressure pulmonary artery (PAPs) by well-established doppler echocardiography, this does not give us a measure of ventriculo-pulmonary interaction. Some studies have shown the potential use of echocardiography to indirectly evaluate the PVR and the pulmonary outflow acceleration time (ACTPO), it should be a good correlated indirect measure.

To have a measure of the ventriculo-pulmonary interaction, we used a parameter that contained information related to pulmonary pressure and a parameter that was an indicator of pulmonary vascular resistance. We have therefore called it PAPS / ACTPO ratio [strength / surface unit] / [time]. We wanted to study this parameter in apparently healthy subjects to code the normal range. From January 2017 to December 2017, we have studied 60 normal patients subjecting them to a complete two-dimensional echocardiographic / Doppler evaluation of the right function and hemodynamics. Echocardiographic imaging was performed using a Philips IE33 and a 3.5 MHz transducer (Philips Medical Systems, Andover, MA). We planned to evaluate this parameter in patients with Pulmonary Hypertension associated with systemic sclerosis.

Statistical analysis. To test the diagnostic power of variables, ROC curves were extrapolated. AUC and cut-off point (max sensitivity + specificity) were also calculated. Pair of variables were correlated by using Pearson’s test. Significance was always set at 0.05. IBM SPSS 25.0 (IBM, Amork, NY) was always used for all the statistical tests. PAPS/ACTPo ratio was measured by two echocardiographers blinded to the clinical data in order to assess interobserver variability

Results:
In normal subjects we found a mean PAPS / ACTPO ratio of 0.26, indicator of an optimal pulmonary arterial ventricle coupling. The first data derived from the only 19 patient analysis shows that those presenting pre-capillary pulmonary hypertension to cardiac catheterization have a PAPS/ACTPO ratio of 0.40 ± 0.05 .

Interobserver variability was lower than 5%

Conclusion: PAPS / ACTPO ratio may be an indicator of pulmonary arterial ventricle coupling.

<table>
<thead>
<tr>
<th>PAPs/Act</th>
<th>PAPs</th>
<th>NYHA 24h</th>
<th>Tapse (mm)</th>
<th>Act (msc)</th>
<th>PVR WUmm/Hg.min.L</th>
<th>CAT dx PAPs</th>
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<tbody>
<tr>
<td>R value</td>
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Statistical analysis