Abstract: P2771

A novel doppler index for the diagnosis of post pulmonary embolism impairment syndrome

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Introduction: Follow-up studies demonstrated that after an episode of acute pulmonary embolism (PE), half of patients report functional limitation. Chronic thromboembolic pulmonary hypertension (CTEPH) is diagnosed in approximately 4%, while others are supposed to have heart failure with preserved ejection fraction (HFpEF) or chronic thromboembolic disease (CTED). Echo can not only assess tricuspidal regurgitation pressure gradient (TRPG) indicating pulmonary hypertension but also with tissue Doppler, E/e’ ratio can diagnose left ventricular diastolic dysfunction. We tried to asses if a novel echo index: TRPG to E/e’ could be useful in differentiation between CTEPH, CTED and HFpEF.

Material and Methods: We analyzed data of consecutive 535 PE survivors (313 F, aged 61 ± 17 yrs). 342/535 (64%) reported significant functional impairment after at least 6 months anticoagulation. All symptomatic subjects underwent detailed diagnostic workup which included standardized echocardiography, lung scintigraphy, pulmonary functional tests, and chest CT, RHC and coronary angiography when appropriate.

Results: Eventually, out of 342 symptomatic PE survivors (220 F, aged 65 ± 15 yrs) CTEPH was diagnosed in 17 cases, CTED in 8 pts and HFpEF in 174 pts and in the remaining other causes were found (i.e. coronary artery disease, anemia, pulmonary disease). Doppler echocardiography showed that TRPG/E/e’ was significantly increased in CTEPH and CTED patients when compared to subjects with HFpEF (Table 1).

Conclusion: Our data indicate that echocardiographic index TRPG/(E/e’) may be helpful in the differentiation of functional limitation in patients after pulmonary embolism.

<table>
<thead>
<tr>
<th></th>
<th>HFpEF n = 174</th>
<th>CTEPH n = 17</th>
<th>CTED n = 8</th>
<th>HFpEF vs CTEPH</th>
<th>CTEPH vs CTED</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRPG (mmHg)</td>
<td>26,7 + 8,9</td>
<td>59,5 + 32,0</td>
<td>34,4 + 15,1</td>
<td>&lt; 0,01</td>
<td>0,013</td>
</tr>
<tr>
<td>E/e’</td>
<td>11,1 + 2,9</td>
<td>10,1 + 32,0</td>
<td>8,9 + 2,0</td>
<td>rs</td>
<td>ns</td>
</tr>
<tr>
<td>TRPG / E/e’</td>
<td>2,5 + 1,0</td>
<td>6,0 + 2,4</td>
<td>3,8 + 1,1</td>
<td>&lt; 0,001</td>
<td>0,013</td>
</tr>
</tbody>
</table>

TRPG Tricuspidal regurgitation pressure gradient CTEPH Chronic thromboembolic pulmonary hypertension CTED Chronic thromboembolic disease HFpEF Heart failure with preserved ejection fraction