Recent studies have indicated that the diagnostic power of power transthoracic echocardiography (PTE) with harmonic imaging can be improved by using a new method in diagnosing patent foramen ovale (PFO). The aim of this study was to compare the blood flow and the myocardial function and more commonly presented with an embolic event (P<0.001). The group with AF and spontaneous contrast had the most depressed LAA function and more commonly presented with an embolic event (P<0.001).

The group with AF and spontaneous contrast had the most depressed LAA function and more commonly presented with an embolic event (P<0.001).

The results are shown in the table. The flow velocities and the myocardial function and more commonly presented with an embolic event (P<0.001).

**Table 1.** The results of both techniques

<table>
<thead>
<tr>
<th>Technique</th>
<th>POSITIVE</th>
<th>NEGATIVE</th>
<th>DOUBT</th>
</tr>
</thead>
<tbody>
<tr>
<td>TTE</td>
<td>18</td>
<td>11</td>
<td>3</td>
</tr>
<tr>
<td>TEE</td>
<td>16 + 2</td>
<td>9 + 2</td>
<td>1 + 2</td>
</tr>
</tbody>
</table>

**Transthoracic echocardiography with harmonic imaging - a new method in diagnosing patent foramen ovale**

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**Objective of the study:** Comparison of the diagnostic power of transthoracic echocardiography with harmonic imaging (TTE, transthoracic Doppler ultrasound (TCD) and TEE in diagnosing of PFO.

**Methods:** 44 subjects (29 females), aged 43.5 ± 17.1, with migraine headache or/and cryptogenic stroke were entered the study. Each of them was taken TCD, TTE and TEE with saline contrast and provocation by Valsalva maneuver. The degree of shunt flow was defined on a four-stage, semiquantitative scale (TCD: 0 = no signal, 1 = minimal, 2 = intermediate, 3 = massive). TEE and TEE with saline contrast signal: 1 = 1-10, 2 = 10-25, 3 = 25 bubbles. Right heart catherization taken under control of TEE and angioscopy was a referential method. The predictive power of the examined methods was calculated by multiple logistic regression. The cut-off values, sensitivity and specificity were reckoned in receiver operating characteristic (ROC) curve analysis. Positive (PPV) and negative (NPV) predictive values, were set on the basis of 30% prevalence of PFO.

**Results:** The ROC curve analysis results are shown in the table. The regression analysis revealed that TCD has the highest accuracy in detect- ing of PFO, OR = 3.19 (1.26–8.08), P = 0.014. In patients (n=21) with documented focal ischemic changes in cerebral imaging studies - computed tomography or magnetic resonance (CTMRplus) the same analysis revealed TTESH as a highest accuracy method: OR = 4.29 (1.04.17.74), p = 0.044.

**Conclusions:** TTESH might have a similar accuracy to TEE and TCD especially in diagnosing PFO in patients with cryptogenic stroke.