

# Left Atrial Appendage Function Assessment by Tissue Doppler Transesophageal Echocardiography in Acute Ischemic Stroke Patients

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## **Abstract**

**BACKGROUND:** Strokes due to cardioembolic causes are the most severe in ischemic stroke subtypes. Left atrial appendage (LAA) flow patterns and function could be assessed accurately by transesophageal echocardiography (TEE). **AIM:** The study aimed to present the importance of TEE in the assessment of LAA function and its relation to cardioembolic stroke. **METHODS:** A group of 120 patients were enrolled in the study and were subdivided into three subgroups, each group included 40 patients. Group A; patients had a stroke with normal sinus rhythm, Group B; patients had a stroke with atrial fibrillation (AF), and Group C; normal control patients. The study participants were evaluated by medical history, physical examination, standard 12-leads electrocardiogram, a TEE detailed evaluation of the LAA, and brain computed tomography and/or magnetic resonance imaging for patients with stroke. **RESULTS:** Both stroke patients with AF and sinus rhythm had significantly higher LAA mean orifice diameter and higher LAA length than control patients, significantly lower mean LAA medial wall tissue Doppler upward and downward motion velocities than control patients, and that patients with stroke and AF had significantly lower mean LAA pulsed-wave emptying and filling velocities than both patients with stroke and sinus rhythm and control patients. The presence of LAA thrombi, spontaneous echo contrast, and stroke recurrence were higher in stroked AF patients than stroke patients with sinus rhythm. **CONCLUSION:** Increased LAA orifice diameter, LAA length, and reduced filling and emptying velocities, and upward and downward motion velocities of the medial wall of LAA as detected by TEE are associated with stroke and cardio embolization.