

Left ventricular ejection fraction reduction due to atrial fibrillation: clinical and echocardiographic predictors

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Background: The diagnosis of atrial fibrillation (AF) induced cardiomyopathy can be challenging. It relies on ruling out other causes of dilated cardiomyopathy, upon recovery of left ventricular ejection fraction (LVEF) following return to sinus rhythm (SR).

Aim: The aim of this study was to identify clinical and echocardiographic predictors for developing new dilated cardiomyopathy in patients with AF or atrial flutter (AFL).

Methods: This is a retrospective study conducted in a large tertiary care center. Patients that suffered deterioration of LVEF under 50% during AF demonstrated by pre-cardioversion trans-esophageal echocardiography (TEE) were compared to those with preserved LV function during AF.

All patients had documented preserved LVEF at baseline (EF >50%) while in SR. Patients with a previous history of reduced LVEF during SR were excluded.

Results: From a total of 482 patients included in the final analysis, 80 (17%) patients had reduced LV function and 402 (83%) had preserved LV function during the pre-cardioversion TEE. Patients with reduced LVEF were more likely to be male and with a more rapid ventricular response during AF/AFL. A history of prosthetic valves was also identified as a risk factor for reduced LVEF. Patients with reduced LVEF also had higher incidence of TR and RV dysfunction.

Conclusion: In "real world" experience, male patients with rapid ventricular response during AF or AFL are more prone to LVEF reduction. Patients with prosthetic valves are also at risk for LVEF reduction during AF/AFL. Lastly, TR and RV dysfunction may indicate relatively long-standing AF with an associated reduction in LVEF.