

Predictors of an early and long-term improvement in ejection fraction after atrial fibrillation ablation among patients with cardiomyopathy

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Background: Catheter ablation improves outcomes in atrial fibrillation-heart failure (AF-HF) patients. We examined longitudinal changes in left ventricular ejection fraction (LVEF) and predictors of early and long-term improvement in EF (EiEF and LiEF) among AF-HF patients following ablation.

Methods: We included 127 consecutive patients with pre-ablation EF<50% undergoing AF ablation. EiEF and LiEF were defined as an increase in EF \geq 10% documented on the first post-ablation echo (median 5.4 months) and the most recent echo (median 2.5 years), respectively. Multivariable regression analysis including CHA₂DS₂VASc score was performed.

Results: Patients were 62 \pm 10 years old and 29.9% had a clinical diagnosis of AF-mediated cardiomyopathy (AMC). Overall, 70 (55.1%) patients had EiEF with their EFs improving from 37 \pm 9% to 46 \pm 13% (P=0.03). Independent predictors of EiEF were AMC, HF drugs, pre-ablation EF and LV systolic volume. During the long-term follow-up, 70.6% of the patients with EiEF continued to have iEF. Of the patients without EiEF, 38.6% had LiEF (pre-ablation EF 37 \pm 9%, post-ablation 36 \pm 10% and most recent 51 \pm 12%). Independent predictors of LiEF were paroxysmal AF, HF drugs and EiEF, (Figure). Additional ablation besides pulmonary vein isolation was not associated with iEF.

Conclusions: Among AF patients with reduced EF, 55% had an EiEF \geq 10% following ablation. LiEF was observed in 52%, including those 39% without EiEF. Independent predictors of LiEF were \geq 2 HF drugs and having EiEF.

