Healthcare utilization after cryoballoon ablation for treatment of atrial fibrillation in patients with heart failure: real-world results from the Cryo AF Global Registry

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Background: Heart failure (HF) concomitant to atrial fibrillation (AF) can exacerbate the risk of hospitalization, morbidity, mortality, and impairment in quality of life posed by each condition alone. While the reciprocal relationship between HF and AF challenges effective treatment for these patients, catheter ablation for treatment of AF is reasonable for select patients with AF and HF according to guidelines. Purpose: Assess real-world usage and healthcare utilization outcomes of cryoablation for patients with AF and HF. Methods: The Cryo AF Global Registry (NCT02752737) is an ongoing, prospective, multicenter registry. Patients with AF were enrolled and treated with cryoballoon ablation (Arctic Front Advance, Medtronic) according to clinical practice at 56 sites in 26 countries world-wide. Subjects with NYHA class I-III at baseline comprised the HF cohort and were compared to patients without HF (No-HF). Freedom from atrial arrhythmia recurrence ≥30 sec, adverse events associated with the AF ablation procedure, repeat ablations, AAD usage, and cardiovascular rehospitalization over a 12-month follow-up were compared between cohorts. Results: A total of 1,303 patients (318 HF, 985 No-HF) were included. The HF cohort included patients with NYHA Class I (56.3%) and II/III (43.7%) with either preserved (81.6%) or mid/reduced (18.4%) left ventricular ejection fraction. HF patients were more often female (45.6% vs 33.6%) with persistent AF (25.8% vs 14.3%), larger left atrial diameter (4.4 ± 0.9 vs 4.0 ± 0.7 cm), and higher rates of hypertension (67.9% vs 49.1%) and prior myocardial infarction (3.8% vs 1.7%; all, $P < 0.05$). The rate of serious procedure-related complications was 5.3% in HF and 3.0% in No-HF ($P = 0.08$). Freedom from atrial arrhythmia recurrence at 12-months was not different between HF and No-HF patients with either paroxysmal (84.2% (95% CI:78.6-88.4) vs 86.8% (95% CI: 84.2 – 89.0)) or persistent AF (69.6% (95% CI: 58.1 – 78.5) vs 71.8% (95% CI: 63.2-78.7)), respectively ($p = 0.32$, HF vs No-HF). AF-related symptoms and antiarrhythmic drug use were significantly reduced after cryoablation in the HF and No-HF cohorts ($P < 0.05$). Freedom from repeat ablation at 12-months was similar between HF and No-HF patients. Of patients who had a cardiovascular rehospitalization after cryoablation, 78% presented with a supraventricular tachyarrhythmia. Persistent AF and HF at baseline both increased the risk of cardiovascular rehospitalization after cryoballoon ablation ($P < 0.05$). Conclusion: Cryoablation is used to treat patients with AF and concomitant HF in real-world practice and is similarly safe and effective at 12-months in patients with and without HF.