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Catheter Ablation for Atrial Fibrillation with Heart Failure

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Abstract

Background:

Mortality and morbidity are higher among patients with atrial fibrillation and heart failure than among those with heart failure alone. Catheter ablation for atrial fibrillation has been proposed as a means of improving outcomes among patients with heart failure who are otherwise receiving appropriate treatment.

Methods:

We randomly assigned patients with symptomatic paroxysmal or persistent atrial fibrillation who did not have a response to antiarrhythmic drugs, had unacceptable side effects, or were unwilling to take these drugs to undergo either catheter ablation (179 patients) or medical therapy (rate or rhythm control) (184 patients) for atrial fibrillation in addition to guidelines-based therapy for heart failure. All the patients had New York Heart Association class II, III, or IV heart failure, a left ventricular ejection fraction of 35% or less, and an implanted defibrillator. The primary end point was a composite of death from any cause or hospitalization for worsening heart failure.

Results:

After a median follow-up of 37.8 months, the primary composite end point occurred in significantly fewer patients in the ablation group than in the medical-therapy group (51 patients [28.5%] vs. 82 patients [44.6%]; hazard ratio, 0.62; 95% confidence interval [CI], 0.43 to 0.87; P=0.007). Significantly fewer patients in the ablation group died from any cause (24 [13.4%] vs. 46 [25.0%]; hazard ratio, 0.53; 95% CI, 0.32 to 0.86; P=0.01), were hospitalized for worsening heart failure (37 [20.7%] vs. 66 [35.9%]; hazard ratio, 0.56; 95% CI, 0.37 to 0.83; P=0.004), or died from cardiovascular causes (20 [11.2%] vs. 41 [22.3%]; hazard ratio, 0.49; 95% CI, 0.29 to 0.84; P=0.009).

Conclusions:

Catheter ablation for atrial fibrillation in patients with heart failure was associated with a significantly lower rate of a composite end point of death from any cause or hospitalization for worsening heart failure than was medical therapy. (Funded by Biotronik; CASTLE-AF ClinicalTrials.gov number, NCT00643188.).

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