

Permanent Atrial Pacing In Patients With Heart Failure And Preserved Lv Ejection Fraction: A Retrospective Analysis Of Clinical Outcomes

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Abstract:

Background: Heart failure in patients with preserved LV ejection fraction (HFpEF) is being increasingly recognized in the older population. To date, no specific therapy has proven definitive in the therapy of HFpEF. The majority of patients with HFpEF also have hypertension.

Objective: We have previously published our observations which describe the beneficial effect of permanent atrial (but not ventricular) pacing (PP) in patients with drug resistant hypertension (DRH), defined as requiring 3 or more drugs for control. The effects of PP in patients with DRH and HFpEF have to date not been described.

Methods: From a cohort of 176 patients with DRH and PP for standard pacing indications, we identified 91 patients with the diagnosis of HFpEF prior to pacemaker implantation. HFpEF was defined as symptoms of congestive heart failure in the setting of an LV ejection fraction > 50%. Demographics included: age: 74.8 ± 7 years, 71% males. All patients were seen 1, 6, and 12 months post PP, and at annual visits thereafter. NYHA functional classification was assessed prior to PP and at each subsequent visit.

Results: A total of 91 of 176 patients with DRH also met criteria for HFpEF prior to PP. Post PP, 52 patients (57%) showed improvement of at least one NYHA class ($p < 0.01$); of these responders to PP, 14 patients (27%) had a decline of 2 NYHA classes, while 38 (73%) had a decline of 1 NYHA class. The clinical improvement was reported by 40 pts (77%) at the 1-month visit, by another 8 patients at 6 months (15%), and by 4 more patients (7%) at the one-year visit. The decline in NYHA class was strongly correlated with decline in both systolic and diastolic BP post PP ($p < 0.001$). A strong positive correlation was seen between percent atrial pacing and decline in NYHA class, while a negative correlation was seen with right ventricular pacing.

Conclusion: To our knowledge, this observational study is the first to show a beneficial effect of PP in patients with HFpEF and hypertension. The effect is strongly correlated with significant declines in systolic and diastolic BP, atrial (but not ventricular) pacing, and appears to occur within the first month after pacemaker implant in most patients. The study suggests a possible new paradigm for PP in patients with HFpEF in the proper clinical setting.