Atrial Pacing Percentage and Its Effect on Mortality in ICD and CRT-D Patients

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Background: Few studies have evaluated the effects of atrial pacing (AP) on mortality in device patients. We hypothesize that increased AP impacts mortality in patients implanted with ICDs and CRT-Ds. Methods: Data were collected from a prospective 2-year study (ACT registry) that included dual-chamber ICD and CRT-D patients. The association between AP (5 brackets: <10%, 11-25%, 26-50%, 51-80%, >80%) and all-cause mortality was analyzed using Cox proportional hazards regression models adjusting for age, LVEF, and %AMS. Results: This analysis includes 1283 patients (baseline demographics: 77% male, 69 ± 11 yrs, LVEF 28 ± 11%, QRS 133 ± 33ms, %AMS 5 ± 16%). The average follow-up time was 19.1 ± 6.7 months. Seventy percent of patients were either AP <10% representing normal sinus function, or were AP >50% representing sinus node disease. CRT-D patients that were AP 51-80%, had higher mortality (p = 0.03) as compared to the low AP group (<10%). Otherwise, no other significant differences (p < 0.05) in all-cause mortality were observed for the different AP brackets for both ICD and CRT-D groups as compared to the low AP bracket. Conclusion: AP does not worsen mortality in ICD and CRT-D patients that are paced a higher amount of time compared to patients that have intrinsic sinus conduction.

Keywords: atrial, pacing, mortality