EP4

Baseline ECG Morphology and Outcome in Patients Treated with Cardiac Resynchronization Therapy

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Background: Cardiac resynchronization therapy (CRT) improves morbidity and mortality in patients with heart failure and QRS >120 ms, yet most patients studied in clinical trials manifest left branch bundle block (LBBB) on their baseline ECG. It is unclear whether benefits of CRT extend to patients with right branch bundle block (RBBB) or interventricular conduction disorder (IVCD).
Objectives: To assess the outcome of patients undergoing CRT therapy based on their pre-procedural ECG morphology.
Methods and Results: This retrospective study included 178 consecutive patients successfully implanted with a CRT device. We compared 3 groups of patients according to their baseline surface electrocardiogram (ECG): LBBB (n= 110, (61.8%), RBBB (n= 18, (10%) and IVCD (n = 47, (26.4%)) The baseline characteristics were similar In the 3 groups. Rate of 1-year recurrent cardiac admissions and 1-year ICD discharge was similar in the 3 groups. However, there was a higher rate of admissions due to heart failure in patients with RBBB as compared to the two other groups (P=0.04). 1-year mortality did not differ between the 3 groups. However, 2 year mortality was higher among patients with RBBB (36.8%) as compared to LBBB (20.9 %) and IVCD (10.6%). Multivariate analysis of baseline ECG parameters associated with two year mortality showed that RBBB (HR-2.9 95%1.25-6.93 CI) on the baseline ECG (p=0.014) and GFR <60(HR 3.7, 95% CI1.60-8.86, P=0.002) were independent predictors of mortality.
Conclusion: Among patients treated with CRT, CRBBB at baseline was associated with increased 2-year mortality risk and heart failure as compared to patients with LBBB and IVCD.