Evaluation of ICD therapies in patients receiving ICD for primary and secondary prevention in a tertiary care centre in India

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Introduction: Real world data pertaining to Implantable cardioverter defibrillator therapies for primary and secondary prevention in Indian patients is not available. Contemporary data published since the landmark ICD trials have shown lower rates of ICD therapies. The objective of the study was to look into the distribution of ICD therapies, time to first ICD therapy and predictors of appropriate ICD therapies in primary and secondary prevention indications.

Methods: It was a prospective observational study. All patients who underwent ICD/CRT-D implantation in the year 2017 were included in the study. Device interrogation and clinical follow up was done every 3-6 months. Device therapies were evaluated by trained electrophysiologist.

Result: Complete follow up was available in 93 out of 111 patients. Mean age of patients was 54 +/- 14 years. 78% of patients were males. 40% of patients had dilated cardiomyopathy and 38% had coronary artery disease. 52 patients had ICD and 41 CRT D implantation. They were followed up for a mean of 349 days. 21% in secondary prevention and 7% in primary prevention group received appropriate ICD therapies. One patient received inappropriate shock for atrial fibrillation in primary prevention group. Overall 113 ICD shocks and 69 ATPs were delivered in 14 patients. 27 episodes of VT in 5 patients were self-terminated, out of which 4 patients did not receive any ICD therapy during follow up. There was no difference in rate of therapies between patients who received ICD for documented VT/VF and patients with syncope due to presumed ventricular arrhythmias (22 vs. 20%). 96%, 71% and 73% were on beta blocker, Angiotensin blocker, Mineralocorticoid receptor blockers. 2 patients suffered non-arrhythmic death during follow up and did not receive ICD therapy during follow up. Secondary prevention and Heart rate > 70/min predicted ICD therapy in univariate, but not in multivariate analysis.

Conclusion: Rate of ICD therapies were significantly higher in the secondary prevention group. Time to first ICD therapy shorter in secondary prevention group. Patients who received ICD for syncope had no difference in ICD therapies and lesser shock burden compared to documented VT/VF. Rate of ICD therapies in Indian patients are comparable with international registry data.