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Implantation experience of defibrillators and cardiac resynchronization therapy**Abdul Mueed**

Pakistan

The incidence of heart failure and sudden cardiac death is increasing at an alarming rate all around the globe and same is the case of Pakistan. The leading cause is ischemic heart disease but non-ischemic cardiomyopathies are also playing its part. It has increased the rate of heart failure, arrhythmia, and sudden cardiac death, morbidity and mortality have also been increased resulting in frequent emergency department visits.

Sudden cardiac death (SCD) is an important cause of death in adult and young patients. Over the past years, the rate of implantable cardiac defibrillator (ICD) implantation is increased dramatically all over the world. With advances in technology and improved training, techniques of implantation are improving, resulting in better outcomes in terms of device-related infections, ICD therapy, lead problems, and generator issues, during and after implantation.

The National Institute of Cardiovascular Diseases (NICVD) cardiac resynchronization therapy (CRT) and ICD registry provides a real-time picture of the need for ICDs and CRT devices in clinical practice across Pakistan. NICVD, Karachi is the largest cardiac institute of Pakistan, which provides all cardiac services under one roof. And it receives patients from all over the country. Therefore it is the recommended center to see the incidence of high energy devices in the Pakistani population.

Methods: This is a single center registry of NICVD, Karachi includes patients from May 2017 to June 2018, admitted through emergency or outpatient department and were diagnosed as a case of heart failure, survival of sudden cardiac death or cardiomyopathies. All cases are included on the basis of ACC/AHA guidelines of device-based therapy.

All procedures were performed by experienced operators together with fellows in training under close supervision. Patients' characteristics, diagnoses, procedural details, and indication for placement of ICD were taken from history and hospital records. Complications related to implantation and adverse events occurring during follow-up were also extracted from hospital emergency or outpatient department.

Results: A total of 930 patients were included in this registry. Out of this biventricular pacing devices, CRTD were 216 (28.0%) and CRT P were 54 (5.8%). Single ICD were 422 (45.0%) and dual ICD were 238 (25.0%).

Majority of patients were of ischemic cardiomyopathy that comes up to 726 (78.06%) and non-ischemic cardiomyopathy were 204 (21.93%). Primary prevention, 704 (75.698%), were more than secondary prevention, 226 (24.30%). This also showed that male received more devices than female (730 (78.49%) vs. 140 (15.05%)) patients. Diabetic were 499 (48.27%) and hypertensive were 475 (51.07%) among all patients. Hypertrophic cardiomyopathy (HCM) was in 16 (1.72%) and arrhythmogenic right ventricular dysplasia (ARVD) was in 10 (1.075%) also included are those who have high-risk feature or secondary prevention.

Conclusion: This report gives an overview of the clinical practice and device implantation. Heart failure patients are increased over the period of time, and the common cause according to this report is ischemic cardiomyopathy. Biventricular pacing therapy is also increased and CRT D were used more than CRT P. Gender difference was noted for device therapy as male received more high energy devices. High energy devices were used more for primary prevention.