Early experience with subcutaneous implantable cardioverter-defibrillators: results from an emerging implantation centre

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Introduction: Implantable cardioverter-defibrillators (ICD) are a gold-standard therapy for prevention of sudden cardiac death (SCD).[1] Subcutaneous ICDs (S-ICD) provide a valuable alternative to conventional transvenous devices (TV-ICD) and can eliminate the risk of lead-related complications and lower risk of systemic infection in selected patients. Introduction of this technology involves higher economic burden and period of learning in emerging implantation centers.

Patients and Methods: We analyzed data regarding all S-ICDs implanted since the introduction of the procedure in our institution in December 2021.

Results: There were in total 7 patients (4 male and 3 female) with the median age 49 (28-64 years). All patients received S-ICD for primary prevention of SCD. Indications were as follows: ischemic cardiomyopathy (3 cases), hypertrophic cardiomyopathy (2 cases), non-ischemic cardiomyopathy (1 case) and catecholaminergic polymorphic ventricular tachycardia with concomitant cardiomyopathy (1 case). There were several different reasons for implantation of S-ICD rather than TV-ICD. Three patients suffered from severe kidney failure and two of them already had chronic dialysis catheters in situ. One patient had a previous infection of TV-ICD. Another patient with ischemic cardiomyopathy and repaired tetralogy of Fallot was not suitable for TV-ICD due to occlusion of left subclavian vein and probable need for future percutaneous implantation of pulmonary valve. In one patient S-ICD was a preferred option due to young age. First 6 cases were implanted with support of an experienced proctor. In one case the defibrillation test was repeatedly unsuccessful, and the patient required multiple external defibrillations. Reposition of the device was scheduled with optimal final result. No other complications were observed periprocedural or during follow-up.

Conclusion: Subcutaneous ICDs have been safely and successfully implemented in our cardiology department without special surgical support. This experience will help to better address the need for prevention of SCD in special populations of patients. Although the total number of patients is still rather low, this could be improved by overcoming reimbursement issues.

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LITERATURE

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