S-IcD registry in European paediatric and Adult patients with congenital heart defects: preliminary results of the SIDECAR project.


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Introduction: Use of the subcutaneous implantable cardioverter-defibrillator (S-ICD) to prevent sudden cardiac death is increasing. Few data exist on S-ICD in young patients. We report preliminary data from a multicenter European registry of paediatric and young adult patients who underwent S-ICD implantation.

Methods: Observational, prospective, non-randomized, standard-of-care study on S-ICD implantation/follow-up in young patients with inherited arrhythmias (IA), cardiomyopathies, and congenital heart defects (CHD). 27 patients (11 CHD, 14 Cardiomyopathies, and 2 IA), mean age 17± 6 years, 11 of them <18 years, with body mass index (BMI) 23.5 ± 4.5, underwent S-ICD implantation (primary prevention 69%). The first 8 patients underwent a standard implantation procedure (three surgical incisions), the following 19 (70%) a two-incision procedure.

Results: No intraoperative complications occurred. Over the 17 months median follow-up (25th–75th percentiles, 5–35) 3 patients (11%) received appropriate and 2 (7%) inappropriate shocks. Four patients (15%) had device-related complications requiring surgical intervention: three skin erosions at the superior parasternal incision, one pocket infection. A higher risk of complications was seen in patients who underwent standard procedures [hazard ratio (HR) 14.7, 95% confidence interval (CI) 2.34 to 93.03; P = 0.001] and those with BMI <20 (HR 11.06, 95% CI 1.01–121.07; P = 0.008).

Conclusions: These preliminary results of a multicenter European paediatric registry suggest that S-ICD is safe and effective with low rates of inappropriate shocks. Improvement of implantation techniques seems associated with better outcome.