

Case series of subcutaneous implantable Cardioverter-Defibrillator Implantations in patients at a tertiary hospital in Ceará: a retrospective observational study

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Introduction: The Implantable Cardioverter-Defibrillator (ICD) is indicated for secondary prevention in patients who survived sudden cardiac arrest due to ventricular tachycardia or ventricular fibrillation when there are no reversible causes and survival is expected to be more than one year. It is also used for primary prevention in some cardiac conditions. These include hypertrophic cardiomyopathy (HCM) with a high risk score for sudden cardiac death, channelopathies, or other inherited heart diseases. The subcutaneous Implantable Cardioverter-Defibrillator (S-ICD) has become an important alternative for young patients who need an ICD but do not require pacing. Its use aims to reduce complications related to vascular access. **Objective:** To describe the case series of patients who underwent S-ICD implantation at a tertiary hospital in the state of Ceará, Brazil. **Method:** This was an observational, descriptive, and retrospective study that reviewed the medical records of patients who underwent S-ICD implantation at a tertiary hospital in Ceará. All patients who underwent the procedure between October 2020 and June 2025 were included. Collected data included clinical diagnoses, indication for implantation (primary or secondary prevention), and demographic characteristics. Data analysis was performed quantitatively, with results presented as absolute and relative frequencies. **Results:** A total of 18 S-ICDs were implanted at the institution between October 2020 and April 2025. Most patients had hypertrophic cardiomyopathy (58.8%), followed by Brugada syndrome types 1 and 2 (23.5%), catecholaminergic polymorphic ventricular tachycardia (CPVT) (5.55%), two patients under investigation for long QT syndrome (11%), and one patient under investigation for MINOCA (5.5%). Eleven patients underwent implantation for primary prevention (64.7%), while the remaining seven patients received the device for secondary prevention, including two with Brugada syndrome, one with CPVT, two with suspected long QT syndrome, one with MINOCA, and one with hypertrophic cardiomyopathy. **Conclusion:** This study describes the institution's initial experience with S-ICD implantation, highlighting its applicability in patients with inherited heart disease and a high risk of malignant ventricular arrhythmias. These findings reinforce the growing role of the S-ICD as a safe and effective alternative in specific clinical scenarios, particularly in younger populations and in patients at increased risk of infection. Studies with larger sample sizes and longer follow-up are needed to evaluate long-term clinical and functional outcomes.

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