

Process Mapping Strategies to Prevent Subcutaneous Implantable Cardioverter-Defibrillator Infection

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Abstract

Background: Infection remains a major complication of cardiac implantable electronic devices (CIEDs) and can lead to significant morbidity and mortality. Extrathoracic devices that avoid epicardial or transvenous leads, such as the subcutaneous implantable cardioverter-defibrillator (S-ICD), can reduce the risk of serious infection-related complications, such as blood-stream infection and infective endocarditis. While the 2017 AHA/ACC/HRS guidelines include recommendations for S-ICD use for patients at high risk of infection, currently, there are no clinical trial data that address best practices for the prevention of S-ICD infections. Therefore, an expert panel was convened to develop consensus on these topics. Methods: An expert process mapping methodology was used to achieve consensus on the appropriate steps to minimize or prevent S-ICD infections. Two face-to-face meetings of high-volume S-ICD implanters and an infectious diseases specialist, with expertise on cardiovascular implantable electronic device infections, were conducted to develop consensus on useful strategies pre-, peri-, and post-implant to reduce S-ICD infection risk. Results: Expert panel consensus of recommended steps for patient preparation, S-ICD implantation, and post-operative management were developed to provide guidance in individual patient management. Conclusion: Achieving expert panel consensus by process mapping methodology for S-ICD infection prevention was attainable, and the results should be helpful to clinicians in adopting interventions to minimize risks of S-ICD infection.

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