Incidence of appropriate implantable cardioverter defibrillator therapy and sudden cardiac death in cardiac sarcoidosis - a systematic review and meta-analysis

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Topic(s):
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Background: Implantation of implantable cardioverter defibrillator (ICD) is a Class IIb indication in patients with Cardiac Sarcoid and with LVEF 36%-49% despite immunosuppression and optimal heart failure therapy.

Purpose: This systematic review and meta-analysis aimed to provide an estimate on the incidence of ventricular arrhythmias and risk of sudden cardiac death (SCD) in patients with CS.

Methods: The terms "Cardiac Sarcoidosis*" AND "Implantable Cardioverter Defibrillator" AND "Sudden Cardiac Death" were searched on PubMed, EMBASE, and Scopus on 21st of September 2018 yielding 759 articles. After exclusions, 12 studies met inclusion criteria.

Results: The 12 studies consisted of 612 patients with CS of which 534 had ICD implanted for primary or secondary prevention. Assuming appropriate device therapy as a surrogate for SCD, the annual incidence of appropriate ICD therapies and SCD combined was 6.3% (95% CI; 3.5%-9.1%) in primary prevention cohorts, 11.6% (95% CI; 7.8%-15.3%) in secondary prevention cohorts, and 8.7% (95% CI; 6.0%-11.5%) in both cohorts. The mean left ventricular ejection fraction (LVEF) was pooled as 59±7 (n=155) in primary prevention cohorts and 48±15 (n=48) in secondary prevention cohorts. However, the LVEF was 35±13 (n=28) in those with appropriate ICD therapy, and 49±16 (n=47) in those with ICDs without therapy.

Conclusion: The incidence of ventricular arrhythmias and SCD is high not only secondary but also in primary prevention cohorts of CS. This data supports the role of implanting ICDs for primary prevention in patients with CS with mild to moderate reduction in LVEF.
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