ICD OUTCOMES IN SEVERE RENAL DYSFUNCTION PATIENTS

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Introduction: Only a few limited observational studies have described the outcomes in patients with severe renal dysfunction (SRD). The current study assessed the clinical outcomes among SRD patients undergoing ICD implantation.

Methods and results: SRD patients (defined as estimated glomerular filtration rate (eGFR) < 30 mL/min/1.73 m2; n = 144 patients, 46% women) were compared to 144 matched non-SRD patients. In univariate analysis, SRD was associated with a significantly higher prevalence of wide QRS (52% vs. 30%, p = 0.001) and left bundle branch block (39% vs. 25%, p = 0.003). After adjustment for AF, the association of SRD with wide QRS and left bundle branch block remained significant (odds ratio (OR) 1.85, 95% CI 1.02-3.35 and OR 1.90, 95% CI 1.10-3.28, respectively).

Conclusion: SRD patients undergoing ICD implantation had a significantly higher prevalence of wide QRS and left bundle branch block. These findings may have important implications for device programming and risk stratification.

Conflict of interest: none

A COMPARISON OF CLINICAL OUTCOMES OF SUBCUTANEOUS AND TRANVENOUS IMPLANTABLE DEFIBRILLATOR THERAPY

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Introduction: Comparison of subcutaneous and transvenous implantable cardioverter-defibrillator (S-ICD, TV-ICD) therapy, in previous studies is hampered by dissimilar patient characteristics. This study compared long-term clinical outcomes of both ICDs in a balanced cohort.

Methods: ICD patients from two tertiary centers in The Netherlands were compared: S-ICDs implanted since 2000 (n = 130) and TV-ICDs between 2005-2014 (n = 1014). S-ICD patients were 1:1 propensity matched to 140 TV-ICD patients for 16 baseline characteristics including diagnosis. Kaplan-Meier estimations for complications requiring surgical intervention were calculated at 5-year follow-up and hazard ratios (HR) for appropriate and inappropriate therapy adjusted for ICD settings.

Results: All 16 baseline characteristics were balanced, with median age 61 (50-71) and 40% females. Cause-specific complications (e.g., infection) were similar in both arms (p = 0.46). Lead complications were lower in the S-ICD group, 3% versus 33% p = 0.008. S-ICDs had more non-lead complications (p = 0.007). Appropriate ICD intervention (antitachycardia pacing and shocks) was higher in the TV-ICD group (HR 2.5, p = 0.08), inappropriate shocks (S-ICD HR 0.69, p = 0.32) and inappropriate shocks (S-ICD vs. TV-ICD HR 0.99, p = 0.79) were equal. Patient survival at 5 years was 96% for S-ICD and 95% for TV-ICD, p = 0.41.

Conclusion: Long-term outcomes in this balanced cohort of S-ICDs and TV-ICDs were equal for complications and shocks. Patients with TV-ICDs had more appropriate interventions and lead complications, but S-ICD patients had more non-lead complications.

Conflict of interest: Research grant Boston Scientific Corporation

PROGNOSTIC ROLE OF INAPPROPRIATE ATP ON CLINICAL OUTCOME IN ICD-PATIENTS

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Background: Inappropriate and inappropriate implantable cardioverter defibrillator (ICD) shocks as well as appropriate antitachycardia pacing (ATP) have been associated with worse outcome. However, the prognostic role of inappropriate ATP on clinical outcome is not known. Aim of the study was to evaluate the prognostic significance of inappropriate ATP in patients with ICD.

Methods and results: A total of 2017 consecutive patients of the prospective single-centre ICD-registry Ludwigshafen who underwent an ICD-implantation between 1992 and 2012 for primary or secondary prevention of sudden cardiac death were analyzed. During the median follow-up time of 5 years 178 (9%) patients experienced inappropriate ATP episodes. 76% of inappropriate ATP were due to supraventricular tachycardia, 16% due to sinus tachycardia and 8% due to oversensing. The unadjusted occurrence of first inappropriate ATP therapy due to atrial fibrillation (AF) was associated with an increased all-cause mortality (HR 1.46, 95% CI 1.10-1.94). In a multivariate analysis adjusted for 26 clinical parameters including baseline AF or new onset AF, first inappropriate ATP therapy due to AF was no more associated with a worse prognosis. Inappropriate ATP due to sinus tachycardia or oversensing was also not associated with a worse outcome.

Conclusions: About 9% of ICD patients experiences inappropriate ATP episodes. 4% of inappropriate ATP episodes are triggered by supraventricular tachyrhythmias. In a univariate analysis those episodes are associated with a worse clinical outcome, but after adjustment for AF inappropriate ATP therapy is no more associated with an increased mortality.

Conflict of interest: none

GLOVE CONTAMINATION IS COMMON IN PRIMARY PACEMAKER AND BATTERY REPLACEMENT PROCEDURES

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Purpose: Bacterial contamination and infection of cardiac implantable electronic devices is a serious and potentially lethal complication. This study sought to determine any glove contamination before handling of the device.

Methods: A total of 2017 consecutive patients undergoing primary implantation of a cardiac pacemaker (n = 30) and a pacemaker exchange (n = 30). Surgeon and assistant wore double gloves. At the time of introducing the pacemaker, the surgeon or assistant wore double gloves. Wound contamination was shown in 25 patients (42%). There was no statistically significant difference between primary and replacement procedures. Two species were identified: 52% Coagulase Negative Staphylococci (CNS) and 48% Propionibacterium Species (PS). For every 15 min of operation time, the risk of a high level of contamination (CFU > 20) increased by 7.4% (95% CI 1.4; 13.4).

Conclusion: Contamination of sterile gloves is common during device procedures. Thus, pacemaker devices were handled with unsterile gloves in 67% of cases. The bacteria identified are the same species believed to be responsible for most cardiac device infections.

Conflict of interest: none