Abstract: P249

The follow-up of patients with chronic heart failure and implantable cardioverter defibrillator in primary prevention

Authors:
M Kerekanic¹, S Misikova¹, E Komanova¹, J Sedlak¹, J Farkas¹, B Stancak¹, ¹East-Slovak Institute of Cardiovascular Diseases, Department of Arrhythmias - Kosice - Slovakia,

Topic(s):
Implantable Cardioverter / Defibrillator

Citation:

Background: The aim of the study was to examine the occurrence and predictors of appropriate and inappropriate shocks and all cause mortality in patients with chronic heart failure who had received an implantable cardioverter defibrillator (ICD) in primary prevention of sudden cardiac death.

Methods: We have retrospectively included 454 consecutive ICD patients (mean age 61 ± 10 years, 388 men) received single- or dual-chamber ICD. Two hundred forty-five patients (54 %) were in NYHA class III and the mean left ventricular ejection fraction (LVEF) was 27 ± 5 %. ICD shock was defined as an appropriate when delivered for ventricular tachycardia or ventricular fibrillation and as an inappropriate when delivered for other arrhythmias or for an abnormal sensing.

Results: During a mean follow-up of 1578 ± 876 days, 87 patients (20 %) had 1 appropriate ICD shock and 55 patients (12 %) had 1 inappropriate ICD shock. Causes of an inappropriate ICD shock were atrial fibrillation or atrial flutter (65 %), an abnormal sensing (24 %) and sinus tachycardia (11 %). The mean time from the ICD implantation was 790 ± 643 days to the first appropriate ICD shock and 873 ± 794 days to the first inappropriate ICD shock. Logistic regression analysis showed that digoxin therapy (OR 1.72, 95 % CI 1.03 - 2.87, p = 0.037) was significantly associated with an appropriate ICD shock and NYHA class III (OR 1.97, 95 % CI 1.06 - 3.66, p = 0.032), history of atrial fibrillation (OR 2.34, 95 % CI 1.31 - 4.19, p = 0.004) and mineralocorticoid receptor antagonist (MRA) therapy (OR 0.47, 95 % CI 0.25 - 0.86, p = 0.016) were significantly associated with an inappropriate ICD shock. The death from any cause occurred in 193 patients (43 %). The mean time from the ICD implantation to death from any cause was 1010 ± 687 days. Cox regression analysis showed that diabetes mellitus (HR 1.58, 95 % CI 1.13 - 2.20, p = 0.006), LVEF = 27 % (HR 1.64, 95 % CI 1.19 - 2.25, p = 0.002) and creatinine level = 1.2 mg/dl (HR 1.48, 95 % CI 1.08 - 2.03, p = 0.013) increased and statin therapy (HR 0.71, 95 % CI 0.51 - 0.98, p = 0.041) decreased the occurrence rate of all cause mortality.

Conclusion: In the present study, 20 % of patients received appropriate ICD shock and 12 % of patients received inappropriate ICD shock during 4 years after implantation ICD. The digoxin therapy was independent predictor of appropriate ICD shock and NYHA class III, history of atrial fibrillation and MRA therapy were independent predictors of inappropriate ICD shock. Four-year all cause mortality was 43 %. Independent predictors of all cause mortality were diabetes mellitus, LVEF, creatinine level and statin therapy.