Conclusion: this animal study exhibited no discernable difference acutely nor throughout the duration of the study of R-wave amplitudes reported by the ICD between the true bipolar and the integrated bipolar Riata ICD leads. Moreover, no device sensing functionality irregularities were noted with respect to any R-waves.

425 Myocardial recanualization before ICD treatment has reduced one-year mortality after the implantation: data from the Czech registry

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Purpose: Life expectancy less than 1 year due to noncardiac disease is considered as a contraindication for implantable cardioverter-defibrillator (ICD) treatment. The aim of this study was to evaluate what is the share of cardiac mortality during 1 year after ICD implantation.

Methods: We analysed retrospectively the exquisite clinical data of pts before ICD implantation and the mortality data obtained from the regular annual reports of 11 implanting centres in the Czech Republic. The first ICD implantation was performed in 1491 pts (age 62 4-13 y.), LVEF (30 4-11 vs. 29 4-10) and the statistical difference in the left ventricular ejection fraction between pts with and without VT/VF was 7%. The cardiac causes of death during first year after ICD implantation in 17%.

Results: Perioperative mortality (0-31 days after implantation) was in 11 of 1491 (0.7%). The one-year mortality rate (incl. perioperative m.) was 7.2%.

Conclusion: the cardiac causes of death during first year after ICD implantation in 107 pts were: congestive heart failure (CHF) in 65 (60.7%), acute myocardial infarction with cardiogenic shock in 14 (13.1%) and arrhythmic storm or sudden cardiac death in 6 (5.6%). The causes of remaining deaths were cerebral apoplexy, malignancy and other or unknown diagnosis.

We compared the characteristics of 76 pts with CHF who died within the first year after ICD implantation with the data of 922 survivors with the same diagnosis. We found no significant differences as regards age (63 11 vs. 64 10 y.), LVEF (30 11 vs. 29 10) and the clinical VT/VF. Nevertheless, the myocardial recanualization (CABG or PCI) before ICD implantation was less frequent (in 19.7%) in pts who died during first year after implantation comparing with the survivors in whom CABG/PCI was performed in 47.1%.

Conclusion: Congestive heart failure and acute myocardial infarction are main causes of one-year cardiac mortality after ICD implantation indicated predominantly as secondary preventive treatment. The risk of death was higher in CHF patients without myocardial recanualization before ICD implantation.

426 Assessment of T-wave alternans to predict ventricular tachyarrhythmias recurrence in ICD recipients with ischemic heart disease

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Microwths T-wave alternans (TWA) has been accepted as a tool for assessing vulnerability to malignant ventricular tachyarrhythmias (VT/VF). In ICD recipients, prediction of VT/VF recurrence may be useful for the clinical management (use of antiarrhythmics, ICD programming, psychological support, outpatient clinic visits).

Aim: to analyse TWA and assess its correlation with the occurrence of VT/VF in infarct survivors submitted to ICD implantation.

Method: 28 pts (25 men; 62±9 years, LVEF 36±13%), submitted to ICD implantation because of VT (n=17) or VF (n=11), with a follow-up >6 months. TWA was measured using The HeartWave System (Cambridge Heart, Inc.). TWA was defined as positive if the sustained alternans microvolt was >1,9mV at heart rates > 100 bpm, negative if the criteria for positivity were not met while maintaining heart rate at a level >105 bpm and indeterminate if it could not be classified as either positive or negative. TWA was carried out when pts were in stable clinical conditions. Beta-blockers were held for 24h prior to TWA testing. Pts with a positive or indeterminate TWA test were classified as the TWA “non negative” group.

Results: during a follow-up of 35±22 months, 12 pts (42.8%) had at least one VT/VF event properly associated with ICD, 4 pts (14.2%) had arrhythmic storm episodes, and 10 pts (35.7%) underwent hospital admission(s) due to cardiac causes. TWA was positive in 7 pts (25%), indeterminate in 9 pts (32.1%) and negative in 12 pts (42.9%), respectively with an occurrence of VT/VF of 85.7%, 44.4% and 16.6% (TWA negative versus TWA “non negative”; p=0.023). In the group with “non negative” TWA the relative risk of VT/VF was 6.3 (p=0.012), the relative risk of arrhythmic storm episodes was 5.0 (p=0.026) and the relative risk of admission due to cardiac causes was 1.1 (p=NS). There was no statistical difference in the left ventricular ejection fraction between pts with and without VT/VF.

Conclusions: in a population of AMI survivors and VT/VF treated with an ICD, TWA is a statistically significant predictor of VT/VF events and therefore it can be used as a prognosis marker after ICD implantation.

427 Ventricular tachyarrhythmias after ICD implantation - differences in event rates according to presenting arrhythmia

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Background: The benefit of the implantable cardioverter-defibrillator (ICD) for prevention of sudden cardiac death has been proven in recent trials. However, not all patients experience device therapy for VT/VF. The purpose of this study was to analyze whether the rate of recurrent VT/VF differs among ICD patients with a different indication.

Methods: Clinical and ICD data from 356 patients receiving ICDs between 1998 and 2003 were examined. Patients were categorized into 3 groups based on their presenting arrhythmia, namely: non-sustained ventricular tachyarrhythmias (NSVT), VT or VF. Actuarial event-free rates from device therapy were calculated according to the Kaplan-Meier method. Groups were compared using chi-square test and ANOVA.

Results: Of the 356 patients, 99 (28%) received ICD for VF, 50% for VT, and 22% for NSVT. During follow-up 155 patients (44%) experienced device therapy for VT/VF. The actuarial event-free rates from VT/VF