120A ABSTRACTS - Cardiac Arrhythmias

1209-107 Intravenous Bolus Amiodarone Administration Exhibits an Immediate and Gradual Increase in Ventricular Fibrillation Thresholds: Experimental Study

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Background: The aim of the study was to examine the early time course of changes in ventricular fibrillation (VF) and defibrillation (DF) thresholds after an i.v. bolus of amiodarone (A) in an experimental pig model of transient myocardial ischemia.

Methods: VF and relative effective ventricular refractory period (ERP) were measured in 15 anesthetized open-chest pigs after 3 min of regional coronary ischemia before (time 0) and 2, 15, 30, 60 and 90 min after a 5 mg/kg i.v. bolus of A injected within 15 sec (Group 1, n=10) or normal saline (Group 2, n=5). DFT was also measured by systematically increasing the stored voltage until defibrillation was accomplished. Hemodynamics, acid-base balance and temperature were kept stable throughout the experiments.

Results: The time course of VF, ERP and DFT in the 2 study groups was as follows (see table).

Conclusions: Intravenous bolus administration of amiodarone increased VF and ERP steady over time, reaching a plateau 90 minutes after its administration, without any effect on DFT.

POSTER SESSION

1209 Defibrillation: Basic Science

Tuesday, March 19, 2002, 3:00 p.m.-5:00 p.m.

Georgia World Congress Center, Hall G

Presentation Hour: 4:00 p.m.-5:00 p.m.

1209-106 Test of a New Reduced-Current Biphasic Waveform in Transiently Effective Defibrillation of Canines


Background: Biphasic truncated exponential (BTE) waveforms are used in all implantable cardioverter defibrillators, and are now being implemented in external transesophageal defibrillators. A new BTE waveform defibrillator has been developed (Medical Research Labs (MRL), Inc; Buffalo Grove, IL) that can deliver substantially lower peak currents at the required energy for 50 percent success probability (ED50) peak current and energy were estimated for each animal by logistic regression analysis. Results: This study consisted of 82 total fibrillation/defibrillation episodes, and the mean impedance for these animals was 62 ± 8.8 ohms. Mean ED50 delivered energy for the Edmark waveform was 35.3 J and for the BTE waveform was 26.3 J (p = 0.014). Mean ED50 peak current for the Edmark waveform was 16.5 A, and for the BTE waveform was 6.4 A (p<0.001).

Conclusion: The new BTE waveform was more effective than the Edmark waveform, requiring 25% less delivered energy, and 61% less peak current in this canine model.

1209-105 Intravenous Amiodarone VoxSonics and Amiodarone Amiodarone VoxSonics VoxSonics 1209 Defibrillation: Basic Science

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