However, no clinical studies have the evaluated the characteristics of VF with respect to DER. Forty patients, 13 with idiopathic cardiomyopathy and 27 with coronary artery disease, undergoing defibrillator testing were included. A step down DER was measured in each patient. A DER of < 10J was defined as low (group A - 82 VF episodes), 10-15J intermediate (group B - 45 VF episodes) and > 15J as high (group C - VF 59 episodes). 166 VF episodes were digitized for off-line analysis. The power spectral density (PSD) at a frequency range of 1.5-255Hz was derived for each of theVF episodes. Results: DER by group was: 7 ±1(4), 14 ±2(5), and 21 ±3(6). Jokes. PSD analysis demonstrated significant differences between group A & C at 2 frequency ranges: 3.5-4.0(4) vs. 3.5±0.0(4), p=0.02, and 21 ±3(6) vs. 21 ±3.0(3), p=0.02 (ANOVA). The results of this study suggest that VF may not be as heterogeneous an arrhythmia as previously thought. VF can be characterized by frequency ranges which correlate with DER, indicating a physiologic significance of the PSD analysis.

Do Monophasic Action Potentials Reliably Reflect Intracellular Action Potentials During Ventricular Fibrillation?

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Monophasic action potential recordings (MAPs) increasingly are being used in a variety of experimental and clinical settings and recently also during ventricular fibrillation (VF). MAPs have been used to correlate closely with transmembrane action potential recordings (TAPs) during regular rhythms. However, because MAPs reflect potentials from a large number of cells, the multiplicity of wavefronts during VF might distort the TAP-MAP correlation. The purpose of this study was to test the validity of the MAP during VF. In right ventricles of 5 isolated, Langendorff-perfused rabbit hearts, a microelectrode TAP was recorded from an epicardial cell opposite an endocardially placed MAP catheter tip. VF was induced by T wave shocks. 173 simultaneously recorded MAP and TAP complexes during VF were analyzed for activation time (AT), cycle length (CL) and action potential duration at 50% repolarization (APD50). Activation of MAP and TAP signals was highly associated (AT: 4.1 ±13ms, mean ± SD). Extremely short iat and low amplitude signals were observed in both MAP and TAP recordings. Cycle length and action potential duration were not different between microelectrode and MAP recordings (see table). Conclusion: MAPs reliably represent cellular activation and repolarization wave fronts during VF, making them useful for studying VF in the ex situ setting including patients.

<table>
<thead>
<tr>
<th>TAP</th>
<th>MAP</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cycle Length</td>
<td>80.7±3 ms</td>
<td>0.8±0.5 ms</td>
</tr>
<tr>
<td>APD50</td>
<td>55.6±9 ms</td>
<td>3.2±0.9 ms</td>
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Clinical Cardiology:

Innovative Triage and Treatment of Acute Myocardial Infarction

Wednesday Morning

Convention Center Rooms 85-86

Abstracts 3328–3337

Long Term Outcome After Early Prehospital Thrombolysis: Influence On Mortality and Event Free Survival

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Prehospital thrombolysis in patients (pts) with acute myocardial infarction (AMI) shows better compared to in-hospital thrombolysis. However, its long-term effects are unknown. In the Myocardial Infarct Triage and Intervention (MITI) trial 939 pts with AMI < 6 hours were randomised to prehospital or in-hospital thrombolysis with 9PA. Time to treatment was reduced by 33 minutes by prehospital initiation of thrombolytic, but clinical outcome was similar in both groups. Pts were followed over a period of 34 ± 6 months. Two years survival was 86% for prehospital and 91% for in-hospital treatment. Evenline survival was 55% and 65% resp. However, in pts in both arms treated within 70 minutes after symptom onset survival was 98% versus 88% in those treated > 70 minutes. By multivariate analysis advanced age, history of heart failure and/or coronary surgery prior to admission, but not time to treatment (p=0.04) were markers for long-term mortality. Thus, irrespective of prehospital initiation, time to treatment is a major determinant for late mortality in thrombolysis for AMI. However, elderly patients and those with a cardiac history face a longer time to treatment influencing their long-term survival.