However, no clinical studies have evaluated the characteristics of VF with respect to DER. Forty patients, with ischemic cardiomyopathy and 7 with coronary artery disease, undergoing defibrillator testing were included. A step down DER was measured in each patient. A DER < 10J was defined as low (group A, n=82 VF episodes), 10-15J intermediate (group B, n=45 VF episodes) and > 15J as high (group C, n=69 VF episodes). 16 VF episodes were digitized for on-line analysis. The power spectral density (PSD) at a frequency range of 1.5-25Hz was derived for each of the VF episodes. Results: DER by group was: 7±1.4, 14±2.28, and 21±1.2 joules. PSD analysis demonstrated significant differences between groups A & C at 2 frequency ranges: 3.5±0.8 (p<0.01) and 6.5±0.8 (p<0.01). 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 shown to correlate closely with transmembrane action potential (APs) 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 eight rabbits, a microelectrode was inserted into the aorta and 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% repolarisation (APD50). Activation of MAP and TAP signals was highly associated (AT difference 4.1±13ms, mean ± SD). Extremely short 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 waveforms even during VF, making them useful for studying VF in the in-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>81.3 ±6ms</td>
<td>80.7 ±6ms</td>
</tr>
<tr>
<td>APD50</td>
<td>54.6 ±10ms</td>
<td>54.9 ±10ms</td>
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</tbody>
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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 early compared to in-hospital thrombolysis. However, its long-term effects are unknown. In the Myocardial Infarct Triage and Intervention (MITI) trial, 590 pts with AMI ≤ 6 hours were randomised to prehospital or in-hospital thrombolysis with tPA. Time to treatment was reduced by 33 minutes by prehospital initiation of thrombolytic therapy, but clinical outcome was similar in both groups. Pts were followed over a period of 34 ± 6 months. Two years survival was 88% for prehospital and 91% for in-hospital treatment. Event-free survival was 55% and 64% resp. However, in pts in both arms treated within 70 minutes after symptom onset survival was 96% 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=0.84) were markers for long-term mortality. Thus, irrespective 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.

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### Triage of patients with suspected myocardial infarction by using a prehospital decision rule: Feasibility and safety

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Background: From 1992 to 1994 a decision rule (DR) for prehospital triage was developed and validated. Multivariate predictors of acute pathology were: abnormal ECG, male gender, radiation of chest pain, nausea/vomiting and prior cardiac disease. Methods: Symptoms were recorded by the general practitioner (GP) using a standardized questionnaire and a computerized ECG was recorded by the ambulance nurse at the patient's home. ECG's were classified as: normal, possible MI or major MI. Combining questionnaire and ECG, the GP was advised whether or not to refer a patient for hospital admission. Results: Out of 2945 patients, 304 (11%) were not referred. Mean age was 56 years, 41% males, 76% had no prior cardiac disease and 93% had a normal ECG. In 61% the decision not to refer was made outside office hours. In 18% the decision to refer was made by the GP. Conclusions up to 30 days were: Death 4% (1%), Infarction 15% (5%), Recurrent AP 8% (3%), VT/ventricular 3% (1%). Two patients died from cancer, 2 post possible cardiac causes several days after triage. In 6 patients with an infarction, the DR had advised admission. Conclusion: A prehospital DR can be used for accurate triage of patients with acute cardiac pathology with low risk of complications.