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 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 ventricle of 5 isolated, Langendorff-perfused rabbit hearts, a microelectrode TAP was recorded from an epicardial site 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 difference 4.1 ± 15ms, mean ± SD). Extremely short or 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 wavefronts even during VF, making them useful for studying VF in the in-situ setting including patients.

**Table:**

<table>
<thead>
<tr>
<th>TAP</th>
<th>MAP</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cycle Length</td>
<td>80.7 ±6ms</td>
<td>80.7 ±6ms</td>
</tr>
<tr>
<td>APD50</td>
<td>54.6 ±9ms</td>
<td>54.6 ±10ms</td>
</tr>
</tbody>
</table>


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

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Innovative Triage and Treatment of Acute Myocardial Infarction

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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 with in-hospital thrombolysis. However, its long-term effects are unknown. In the Myocardial Infarct Thrombolysis and Intervention (MITI) trial 580 pts with AMI ≤ 6 hours were randomized to prehospital or in-hospital thrombolysis with rt-PA. Time to treatment was reduced by 33 minutes by prehospital initiation of thrombolysis, but clinical outcome was similar in both groups. Pts were followed over a period of 34 ± 6 months. Two years survival was 89% for prehospital and 91% for in-hospital treatment. Eventfree survival was 55% and 64% respectively. 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 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.

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. Multivariats 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 analysis 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 (figure). Results. Out of 2845 patients, 304 (11%) were not referred. Mean age was 58 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 10% of the patients with a normal ECG complications up to 30 days were: death 4 (1%), infarction 15 (5%), recurrent AP 8 (3%), SV tachycardia 3 (1%). Two patients died from cancer, 2 from 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.