Abstract 13562: Cardiac Electrical Biomarker, a Novel Marker Diagnosing Myocardial Injury in Patients With Symptoms Suggestive for NSTEMI

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Abstract

**Background:** The Cardiac Electrical Biomarker (CEB) is a novel electrocardiographic (ECG) marker quantifying the dipolar activity of the heart with higher levels indicating myocardial injury.

**Methods:** We prospectively enrolled 1097 patients presenting with suspected non-ST-elevation myocardial infarction (NSTEMI) to the emergency department (ED). Digital 12-lead ECGs were recorded at presentation and the CEB values were calculated in a blinded fashion. The final diagnosis was adjudicated by two independent cardiologists. The prognostic endpoint was all-cause mortality during 2 years of follow-up.

**Results:** NSTEMI was the final diagnosis in 14% of patients. CEB levels were higher in patients with NSTEMI compared to other causes of chest pain (median 44 (IQR 21-98) vs. 30 (IQR 16-61), p<0.001). A weak but correlation between levels of high-sensitivity cardiac troponin T (hs-cTnT) at admission to the ED and the CEB was found (r=0.23, p<0.001). The use of the CEB in addition to conventional ECG-criteria improved the diagnostic accuracy for the diagnosis of NSTEMI as quantified by the area under the receiver-operating characteristics curve from 0.66 to 0.71 (p<0.001) and the sensitivity improved from 43% to 79% (p<0.001).

**Conclusion:** The CEB, an ECG marker of myocardial injury, significantly improves the accuracy and sensitivity of the ECG for the diagnosis of NSTEMI.