

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

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Circulation. 2017;136:A13562

## 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% ( $p<0.001$ ).

Fig. 1 Area under the receiver-operator characteristic (ROC) curves for a score incorporating conventional ECG criteria (CON ECG, green line) and the cardiac electrical biomarker (CEB, red line) at presentation, and the combination (blue line) of both in the diagnosis of non-ST Elevation Myocardial Infarction (NSTEMI).

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

[Electrocardiography](#) [Acute coronary syndromes](#)

Author Disclosures: **R. Abaecherli:** None. **I. Strebel:** None. **R. Twerenbold:** None. **J. Boeddinghaus:** None. **S. Osswald:** None. **C. Müller:** None. **T. Reichlin:** None.