

N-Terminal Brain Natriuretic Peptide Adds Prognostic Information to Admission ECG and Troponin T In Patients With Non-ST Elevation Acute Coronary Syndromes

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Background - N-terminal brain pro-brain natriuretic peptide (NT-proBNP) has been associated with adverse outcome in patients with acute coronary syndromes. However the relation between NT-proBNP and baseline electrocardiogram and troponin T (Tn T) levels in risk stratifying patients presenting with acute coronary syndromes has not been evaluated.

Methods - In this multicenter cohort study we included 1218 patients admitted with non-ST elevation acute coronary syndromes (NSTEMI-ACS). Blinded measurements of NT-proBNP and Tn T were performed at a median time of 3 hours after admission and analyzed centrally. Patients were classified as having low-risk ECG (normal ECG or T-wave inversion) (n=806) and high-risk ECG (transient ST-elevation or depression ≥ 0.5 mm) (n=412). NT-proBNP levels greater than 631.2 pg/ml (4th quartile limit) were considered positive. Tn T cut off point was ≥ 0.03 ng/ml.

Results - Within both ECG categories NT-proBNP level greater than 4th quartile was associated with 4-fold increase risk of death or MI at 180 days (low-risk ECG OR 4.0;95% CI 2.2 to 7.8 and high-risk ECG=OR 4.4;95% CI 2.3 to 8.2). The figure shows the risk of death or myocardial infarction at 180 days stratified by ECG pattern, Tn T status and NT-proBNP levels.

Conclusions - NT-proBNP identifies patients with NSTEMI-ACS who are at higher risk of death and re-infarction at 6 months and adds incremental information to Tn T in patients with high-risk ECG as well as in those with low risk ECG. This information suggests that NT-proBNP should be incorporated to clinical and biomarker data in risk stratification of patients with NSTEMI-ACS.

