

## Publication

## B-type natriuretic peptide in the early diagnosis and risk stratification of acute chest pain

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Myocardial ischemia is a strong trigger of B-type natriuretic peptide (BNP) release. As ischemia precedes necrosis in acute myocardial infarction, we hypothesized that BNP might be useful in the early diagnosis and risk stratification of patients with acute chest pain.; In a prospective, international multicenter study, BNP was measured in 1075 unselected patients with acute chest pain. The final diagnosis was adjudicated by 2 independent cardiologists. Patients were followed long term regarding mortality.; Acute myocardial infarction was the adjudicated final diagnosis in 168 patients (16%). BNP levels at presentation were significantly higher in acute myocardial infarction as compared with patients with other diagnoses (median 224 pg/mL vs. 56 pg/mL,  $P > .001$ ). The diagnostic accuracy of BNP for the diagnosis of acute myocardial infarction as quantified by the area under the receiver operating characteristic curve (AUC) (0.74; 95% confidence interval [CI], 0.70-0.78) was lower compared with cardiac troponin T at presentation (AUC 0.88; 95% CI, 0.84-0.92;  $P > .001$ ). Cumulative 24-month mortality rates were 0.5% in the first, 2.1% in the second, 7.0% in the third, and 22.9% in the fourth quartile of BNP ( $P > .001$ ). BNP predicted all-cause mortality independently of and more accurately than cardiac troponin T: AUC 0.81 (95% CI, 0.76-0.86) versus AUC 0.70 (95% CI, 0.62-0.77;  $P > .001$ ). Net reclassification improvement for BNP was 0.10 ( $P = .04$ ), and integrated discrimination improvement 0.068 ( $P = .01$ ).; BNP accurately predicts mortality in unselected patients with acute chest pain independently of and more accurately than cardiac troponin T, but does not seem to help in the early diagnosis of acute myocardial infarction.

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