

# *Routinely available biomarkers as long-term predictors of heart failure in patients with single-vessel disease, completely revascularized acute ST-segment elevation myocardial infarction: a follow-up study*

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**Aim:** To assess the efficacy of high sensitive C-reactive protein (hsCRP), cardiac troponin T (cTnT) and creatin kinase (CK) as long-term predictors of heart failure in patients with acute ST-segment elevation myocardial infarction (STEMI) who underwent primary percutaneous coronary intervention (pPCI) with successful and complete revascularization and to compare their predictive value with B-type natriuretic peptide predictive value.

**Patients and Methods:** This prospective study evaluated 47 patients with acute STEMI who had normal left ventricular ejection fraction (LVEF) (>50%) at admittance and underwent complete revascularization. Blood samples were collected from admission to the day 7. The primary endpoint was the reduction of LVEF <50% after 12 months.

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**Results:** Patients who reached primary endpoint had significantly higher mean values of cTnT after 24h (5.11 vs 2.82 µg/L; p=0.0101) and peak values of CK (3375.5 vs 1865 U/L, p=0.0084). Equally, the patients with cTnT after 24h Q4 when compared to the ones with Q1Q3 were 6 times more likely to develop LVEF <50% (OR 6.27, 95% CI 1.35-29.06, p=0.0200). Regarding hsCRP, there was no significant relation between hsCRP and development of primary end-point, neither when the values are dichotomized at a cut-off limit of ≥11 mg/l (p=0.5410) nor when they are split into quartiles (p=0.8482).

**Conclusion:** cTnT and CK could serve as predictors of reduced LVEF in patients with acute STEMI who had normal systolic function at admission, single-vessel disease, and were successfully revascularized during the primary PCI. However, BNP showed to be a more powerful predictor in this low-risk population, even more powerful than the multi-marker score we designed.

**KEYWORDS:** ST-segment elevation myocardial infarction, biomarkers, long-term, prognosis, heart failure.

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## Literature

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