

What is an MI? Prospective analysis of the diagnostic and prognostic impact of adding troponins to the definition of myocardial infarction

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JACC 2001; 37 (suppl A): 358A.

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Background: The recent consensus statement by the Joint ESC/ACC Committee for the redefinition of MI suggests that any amount of myocardial necrosis caused by ischemia should be labeled an infarct. The aim of this study was to evaluate the prognostic value of the new definition in a large, unselected population of patients with ACS from the multinational, observational GRACE study.

Methods and results: In this study, data from 8213 patients hospitalized with suspected ACS were analyzed. We examined the rates of MI and the prognostic value of peak standard (CK, CK-MB) and new (Tn I/T) cardiac markers in 3420 patients in whom levels of both markers had been measured. When isolated Tn+ patients were included, the rate of diagnosis of MI increased by 15% for CK \geq ULN, 26% for CK \geq 2 times ULN, and 9% for CK-MB \geq ULN. The OR for in-hospital mortality was significantly[†] higher in Tn+ patients (see Table).

Conclusions: When Tn+ status is taken into account, an additional one in four patients with ACS meet the criteria for diagnosis of MI. These patients experience a three-fold increase in short-term mortality when compared with patients with normal enzyme levels, and a 1.5-fold increase compared with patients identified using CK-MB levels only.

Cardiac marker status	Patients (%)	OR (95% CI) for in-hospital mortality
CK \leq 2 x ULN, Tn-	38	1
CK \leq 2 x ULN, Tn+	26	3.0 [†] (1.6-5.7)
CK >2 x ULN, Tn-	4	2.1 (0.6-7.4)
CK >2 x ULN, Tn+	32	5.8 [†] (3.3-10.1)

Table. In-hospital mortality rate of ACS patients, according to presence of cardiac markers