OBJECTIVES: The purpose of this study was to analyze the impact of myocardial salvage on cardiac autonomic function in patients undergoing mechanical reperfusion therapy for acute myocardial infarction (MI). BACKGROUND: Heart rate deceleration capacity (DC) and heart rate turbulence slope (TS) are strong predictors of post-MI mortality. Salvage of jeopardized myocardium is the main mechanism by which patients benefit from reperfusion therapy. The impact of myocardial salvage on DC and TS is unknown. METHODS: The study enrolled 854 consecutive patients undergoing mechanical reperfusion therapy for first MI. Paired (99m)Tc-sestamibi scintigraphy studies (acute and 7 to 14 days after reperfusion) were used to calculate myocardial salvage index. DC and TS were assessed from Holter recordings 7 to 14 days after reperfusion. Patients were categorized into 3 groups by salvage index: or =60% (n = 353). RESULTS: In the 3 groups, DC was 5.2 (interquartile range 3.5 to 7.1) ms, 5.7 (4.1 to 7.3) ms, and 6.4 (5.0 to 8.0) ms, whereas TS was 5.3 (2.6 to 8.4) ms/R-R interval, 6.9 (3.2 to 11.7) ms/R-R interval, and 7.8 (4.1 to 13.2) ms/R-R interval, respectively (p or =60%. However, patients who had autonomic dysfunction defined by abnormal DC and TS had a poor prognosis independent of whether or
not the salvage index was $<30\%$ (5-year mortality rates of 16.5\% and 17.3\%, respectively). In contrast, prognosis was excellent when both factors were normal (5-year mortality rates of 2.9\% and 4.0\%, respectively). Predictive value of impaired LVEF ($<\text{ or } =40\%$) was also independent of salvage index. Multivariably, both autonomic dysfunction and impaired LVEF were independent predictors of 5-year mortality. CONCLUSIONS: In patients undergoing mechanical reperfusion therapy for acute MI, salvage index is an independent predictor of autonomic dysfunction but does not affect its prognostic value.

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