Acute Hyperglycemia is not Associated with Spontaneous Reperfusion in Acute ST-Elevation Myocardial Infarction

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Background: Spontaneous reperfusion (SR) of the infarct-related artery may occur in patients with ST elevation myocardial infarction (STEMI) prior to therapeutic reperfusion therapy. Hyperglycemia is common on admission in patients with STEMI and is associated with a worse prognosis whose mechanisms remain unclear but may include impairment of coronary flow. The objective of this study was to examine whether acute hyperglycemia was associated with SR in a cohort of patients with STEMI.

Methods: All patients who presented to our institution with acute STEMI with measurement of glucose levels on presentation were eligible. SR was defined as a combination of significant relief of chest pain associated with an at least 70% resolution of ST segment elevation on follow-up ECG prior to reperfusion therapy.

Results: 465 patients were studied of whom 77 patients met criteria for SR. Average glucose levels were not significantly different between the SR and non-SR groups (10.0 ± 5.6 mmol/L vs. 10.1 ± 5.3; p = NS). When patients were divided into normoglycemic and hyperglycemic groups, there was no significant difference in the percentages of such patients in the SR and non-SR groups. (52% vs. 54%; p = NS).

Conclusions: Acute hyperglycemia on admission does not appear to predict the occurrence of SR.