

Glucose-insulin-potassium therapy in acute myocardial infarction – ten years follow-up

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High-dose glucose-insulin-potassium (GIK) therapy in acute myocardial infarction (AMI) as a complementary with thrombolytic therapy, in a randomized clinical trial, shows the effect on major cardiovascular events (MACE) defined as cardiac mortality, reinfarction, malignant ventricular arrhythmias (ventricular fibrillation and /or ventricular tachycardia), and/or severe heart failure (Killip 3 and 4) and a reduced the relative risk 5.25 times of their occurrence (10.3% vs. 32.5%, $p = 0.000$) for the first month. The effect of GIK therapy was shown after one year of AMI, also and the relative risk for these events was reduced by 5.67 times. Long-term effects of GIK therapy on the incidence of heart failure and survival have not been analyzed. On the basis of the mechanisms that have so far been described, it can be expected that GIK therapy affects the long-term prognosis of patients with acute coronary syndrome, especially with STEMI myocardial infarction treated with thrombolytic therapy. Of great importance would be to determine the predictors of long-term survival in patients treated with this therapy, as well as major of cardiovascular adverse events. This prospective, randomized, clinical study included 120 patients with AMI and an indication for reperfusion therapy. Patients were randomized into treatment groups (TG) and were treated with solution according to the following protocol GIK: 25% glucose, 50 IU insulin per L, 80mmol KCl per L in infusion of 1 ml / kg / h, during the first 24 h AIM simultaneously with thrombolytic treatment and control group (CG) were treated only with thrombolytic therapy.

The effect of GIK therapy on prognosis in the long-term follow-up of ten years after the AMI was not shown. The relative risk for major cardiovascular events (MACE): reinfarction, mortality, malignant rhythm disorders, was significantly lower in the group treated with GIK therapy (RR = 0.481, 95% CI 0.206-1.126, $p = 0.078$). Significant individual predictors of all-cause mortality in patients treated with this therapy were female gender, TIMI risk score ≥ 6 , and the absence of beta blockers in the early phase of AMI.

Key words: acute myocardial infarction, glucose-insulin-potassium therapy