**Format**: Abstract




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# One-Year Outcome of Intensive Insulin Therapy Combined to Glucose-Insulin-Potassium in Acute Coronary Syndrome: A Randomized Controlled Study.

Bouida W[1,2], Beltaief K[1,2], Msolli MA[1,2], Bzeouich N[1,2], Sekma A[1,2], Echeikh M[1,2], Mzali M[1,2], Boubaker H[1,2], Grissa MH[1,2], Boukef R[3,2], Hassine M[4,2], Dridi Z[5], Belguith A[6], Najjar F[7], Khochtali I[8], Nouira S[9,2]; GREAT Network.

**Author information**

## Abstract

**BACKGROUND:** A number of factors may offset the cardioprotective effects of glucose-insulin-potassium (GIK) on outcome of patients with acute coronary syndrome, such as hyperglycemia induced by this cocktail infusion. We performed a study to evaluate the effect of intensive insulin therapy in association with GIK on 1-year outcome in patients hospitalized for acute coronary syndrome.

**METHODS AND RESULTS:** In a randomized prospective controlled trial we included 772 patients with non-ST-segment elevation acute coronary syndrome. Patients were randomized into 3 groups: $GIKI_2$ group, who received GIK with intensive insulin therapy for 24 hours; GIK group, who received GIK with nonintensive insulin therapy; and control group, who received usual care. The primary outcome criteria were the rates of major cardiovascular events combining death, reinfarction, and stroke rate at 1 year. In addition, we measured platelet function assay-100 and plasminogen activator inhibitor-1 at admission and 24 hours later. Based on an intention-to-treat analysis, major cardiovascular events at 1 year was 12.8% in the $GIKI_2$ group, 15.5% in the GIK group, and 20.5% in the placebo group; the difference was significant between the $GIK_2$ and control groups ($P$=0.01). Platelet function assay-100 at 24 hours decreased significantly from baseline in the control group but not in the $GIKI_2$ group. Plasminogen activator inhibitor-1 decreased significantly in the $GIKI_2$ group but significantly increased in the control group. Minor hypoglycemic events were more frequent in the $GIKI_2$ group compared with other groups.

**CONCLUSIONS:** $GIKI_2$ led to improvement of 1-year outcome rates in patients with non-ST-segment elevation acute coronary syndrome. This beneficial effect was associated with a decrease in platelet reactivity and an increase on fibrinolysis tests.

**CLINICAL TRIAL REGISTRATION:** URL: https://www.clinicaltrials.gov. Unique identifier: NCT00965406.



**KEYWORDS:** acute coronary syndrome; glucose-insulin-potassium; intensive insulin therapy; pharmacology; prognosis

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