

Title: Tracing the Proposed Adverse Effects of Higher Values of Glycosylated Hemoglobin (HbA1c) in Tightly-Controlled Diabetic Patients Undergoing Primary CABG

Category: Acute Coronary Syndromes

Abstract

BACKGROUND: The rising percentage of patients scheduled for primary CABG with HbA1c>8.6% is alarming reflecting higher burden on the patient, operative procedure and the operating surgeon. Although some articles in the literature argue that decompensated diabetes increases mortality and morbidity, other studies are arguing that there is no relation between them. This study aims at tracing the occurrence of the proposed adverse complications after primary CABG operations related to HbA1c values>8.6% in diabetics subjected to tight glycemic control; in a trial to conclude how far the value of HbA1c could be accepted to carry out the surgery safely.

METHOD(S): This prospective study included 80 adult diabetic patients who presented with IHD requiring primary CABG. It was conducted between January 2016 and December 2018. Group (I) included 42 patients with HbA1c values>8.6%. We compared the following: perioperative MI, low cardiac output syndrome, operative mortality, rhythmic complications, hemorrhagic complications, respiratory complications, cerebrovascular accidents, acute renal failure development, superficial and deep surgical wounds infections, overall hospital complications and overall one-year mortality and survival.

RESULT(S): Mean HbA1c% value was $7.5 \pm 1.11\%$ for group (I) and $9.3 \pm 1.03\%$ for group (II). Prior to surgery, the mean FBG level was 136.9 ± 41.7 mg/dl for group (I) and 152.2 ± 27.3 mg/dl for group (II) with tight glycemic control measures. Although group (II) showed higher values in the studied parameters (pre-, intra- and post-operatively), no statistically significant differences appeared between the two subsets of patients regarding the proposed adverse complications. The overall hospital complication rate was 13(30.95%) and 14(36.84%) for group (I) and (II) respectively ($p>0.05$). In the follow-up period, both groups expressed comparable results with no statistical significance. The overall one-year survival was 95.23% and 94.73% in group (I) and (II) respectively ($p>0.05$) and the overall mortality was 5% (two deaths from each group) ($p>0.05$).

CONCLUSION(S): Although patients with IHD undergoing primary CABG and having decompensated diabetes with HbA1c values>8.6% have more insulted cardiovascular condition, these higher HbA1c values do not add more additional impact on the proposed adverse intra- and postoperative complications as with lower values with the aid of strict (tight) glycemic control measures in the immediate preoperative period.