

**Title:** Short and Long-Term Cardiovascular Outcomes after Percutaneous Coronary Intervention in Patients with Insulin-Treated Versus Non-Insulin Treated Type 2 Diabetes Mellitus

**Category:** Interventional Cardiology

### Abstract

**Background:** Type 2 diabetes mellitus (T2DM) is a major health issue worldwide and a risk factor for coronary artery disease (CAD). Patients with insulin-treated T2DM (ITDM) have worse short and long-term outcomes than those with non-insulin-treated T2DM as suggested by clinical observations made on past twenty years. However only a few studies have compared short and long-term adverse cardiovascular outcomes in diabetic patients after percutaneous coronary intervention. Limited data available on glycemic control after percutaneous coronary intervention and short and long-term clinical outcomes are controversial.

**METHODS:** Patients admitted in CCU of Shaikh Zayed Hospital Lahore who had type 2 diabetes mellitus and underwent percutaneous coronary intervention (PCI) using drug-eluting stents were reviewed. Total 731 patients were included in the research. All the participants accepted for inclusion in this cohort study were treated with a drug-eluting stent. Post-intervention adverse cardiovascular outcomes observed during short-term (3 months) and long-term (6 months) follow-up periods were assessed and compared. Statistical analysis was carried out using the RevMan 5.3 software. Odd ratios (OR) with 95% confidence intervals (CI) were calculated.

**RESULTS:** Total 731 patients were included in this study. Patients were categorized into insulin-treated (n=362) and non-insulin treated (n=369) type 2 diabetes mellitus and all patients underwent PCI with drug-eluting stents. Patient enrollment periods varied but enrollment occurred during the year 2018 in months of March, April and May. They were followed on 3-months, 6-months and 1-year. The primary outcome was major adverse cardiovascular and cerebrovascular events that were defined as a composite of cardiac death, myocardial infarction, stent thrombosis, repeat revascularization, or stroke. Post-PCI adverse cardiovascular outcomes-such as major adverse cardiac events (MACEs) (OR 3.13, 95% CI 2.768-3.492; P = 0.00001), all-cause mortality (OR 5.03, 95% CI 4.668-5.392; P = 0.00001), myocardial infarction (MI) (OR 1.39, 95% CI 1.028-1.752; P = 0.02), and repeated revascularization (OR 3.98, 95% CI 3.618-4.342; P = 0.00001)-were found to be significantly more likely during the long-term follow-up period in patients with type-2 diabetes mellitus who were insulin treated after PCI.

**CONCLUSION:** Both short and long-term adverse cardiovascular outcomes post PCI were significantly higher in patients treated with insulin as compared to those who were on non-insulin therapy. Adverse cardiovascular outcomes were more likely during the long-term follow-up period than during the short-term follow-up in patients with T2DM on insulin therapy. Long-term adverse cardiovascular effects were more common in patients with type-2 diabetes mellitus as compared to short-term side effects. This hypothesis requires confirmation via new comparative trials that consider short-term and long-term follow-up periods.