Abstract 1

Insulin Use Does Not Protect Against Restenosis in Diabetic Patients Presenting with Acute Coronary Syndrome or Symptomatic Angina

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Background: Percutaneous coronary intervention (PCI) in diabetic patients is associated with increased rates of cardiovascular morbidity and a higher incidence of restenosis (ISR) due to neointimal hyperplasia. While prior work has shown that intensive glycemic control may reduce the incidence of ISR, the influence of insulin versus oral therapy on the rate of ISR remains undefined.

Methods: Of 5,239 consecutive diabetic patients undergoing diagnostic angiography, we identified 256 previously stented patients who presented with acute coronary syndrome (ACS) or anginal symptoms and subsequently underwent diagnostic angiography. The cohort included 126 patients with target vessel restenosis (> 50%) and 130 controls matched by age, sex, gender, and stent type (drug eluting vs bare metal) and dimensions. Diabetic therapy and laboratory data at the time of initial intervention were prospectively collected for both groups.

Results: The mean age was 64 ± 10; 64% of patients were men, 91% were type 2 diabetics, 84% were treated with statins, and 35% received drug-eluting stents. Post-PCI stent dimensions were similar between the groups. Patients treated with insulin developed ISR at a rate similar to those treated with oral medications (70% vs 58%, $P = .211$) despite a similar degree of glycemic control (proportion of patients with $A_{1c} > 7\%$: 81% vs 75%, $P = .30$). There were no significant differences in LDL cholesterol concentration or frequency of statin use between the groups.

Conclusions: In a population of diabetic patients undergoing PCI due to ACS or anginal symptoms, the use of insulin therapy was not associated with an increased risk of ISR. These data suggest that the use of insulin therapy to achieve optimal glycemic control in a high-risk population is not accompanied by an increased risk of target vessel restenosis.