



Impact of Glycemic Control on Myocardial Perfusion after Successful Percutaneous Coronary Intervention in Patients with Diabetes Mellitus

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Abstract : Background: Patients with diabetes mellitus have a less favorable clinical outcome at one year after successful stent placement. All adverse outcome measures such as in-stent restenosis occurred more frequently in diabetic than non-diabetic patients. Myocardial perfusion imaging is an excellent indicator for diagnosis of restenosis, estimation of disease progression, and decision of re-intervention.

Aim of the study: To evaluate the impact of glycemic control on myocardial perfusion defects after successful percutaneous coronary intervention of patients with diabetes mellitus receiving insulin versus those receiving oral hypoglycemic agents.

Methods and results: This study was conducted on 100 diabetic patients who underwent percutaneous coronary intervention as a treatment strategy for revascularization based on positive results of myocardial perfusion imaging [MPI]. Our patients were divided into two groups; Group (A): Included 50 patients who received insulin therapy, and Group (B): Included 50 patients who received oral hypoglycemic drugs and diet therapy for glycemic control. After a period of six months with glycemic control in the two groups, we noticed that tight glycemic control (HbA1c less than 7) had been achieved by the insulin group than the non-insulin group. Myocardial perfusion imaging follow-up showed that the defect size mean for the same territory after stenting in group 1 was 8.08 ± 7.01 whereas in group 2 was 13.56 ± 9.76 . The difference between the two groups was statistically significant ($P < 0.05$) which indicates that in-stent stenosis was higher in the non-insulin group.

Conclusions: Tight glycemic control by insulin after successful percutaneous coronary intervention decreased the incidence of in-stent restenosis compared with less tight control with oral hypoglycemic agents.

Keywords: Acute coronary syndrome; Myocardial perfusion imaging; Diabetes mellitus; Percutaneous coronary intervention.