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### Uncontrolled Glucose Levels: A Risk Factor in Diabetic Patients Presenting with Acute ST Elevation Myocardial Infarction (STEMI)

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#### Abstract

**Introduction:** Acute myocardial infarction (MI) is a major cause of morbidity and mortality in diabetic patients. Factors unique to diabetes contribute in a higher incidence of MI due to an increase in atherosclerotic plaque formation and thrombosis. Although diabetic patients have a higher risk for developing ischemic heart disease, the effect of diabetes mellitus (DM) on the prognosis of patients with acute MI after reperfusion therapy remains controversial.

**Objectives:** The aim of this study was to assess and compare the prognosis, complications, systolic and diastolic functions of controlled vs. uncontrolled diabetics.

**Materials and methods:** A retrospective study was performed on 98 patients presenting with acute STEMI. 37 patients (37.8%) were found to have DM Type 2. Diabetic patients had their glucose levels measured and were further divided into 2 groups, controlled diabetics with glucose values of  $\leq 125$  mg/dl for fasting blood sugar (FBS) or postprandial with  $\leq 140$  mg/dl and uncontrolled diabetics with  $\geq 140$  mg/dl for FBS or postprandial  $\geq 200$  mg/dl.

**Results:** Out of the 37 diabetic patients, males were 67.6% while females were 32.4% with a mean age of  $59 \pm 11$ . Hypertension was present in uncontrolled and controlled diabetics with 80.8% and 54.5% respectively. 3.8% of the uncontrolled diabetics presented with ventricular tachyarrhythmia. Tricoronary artery involvement was found in 34.6% of the uncontrolled patients and in 18% of the controlled patients. Post MI reperfusion management complications were present in uncontrolled and controlled diabetic patients with 11.5% and 9.1% respectively. Systolic dysfunction was present in uncontrolled and controlled groups in 84.6% vs. 72.7% while diastolic dysfunction was present in 73.1% vs. 27.3% respectively. Mortality rate was 3.8% in diabetic patients with uncontrolled glucose levels.

**Conclusions:** Uncontrolled glucose levels in diabetic patients were significantly correlated with higher rates of tachyarrhythmia, tricoronary artery involvement, hypertension, post MI reperfusion management complications, mortality rates, systolic and diastolic dysfunctions.

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