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## Trends in the Frequency, Patient Characteristics, Management, and in-Hospital Outcomes of Diabetic Patients Presenting with Acute Myocardial Infarction

Mayra Tisminetzky  
*University of Massachusetts Medical School*

*Et al.*

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**Title: Trends in the Frequency, Patient Characteristics, Management, and in-Hospital Outcomes of Diabetic Patients Presenting with Acute Myocardial Infarction**

Mayra Tisminetzky<sup>1</sup> MD PhD; Ibrahim Kassas<sup>2</sup>, MD; Samuel Joffe<sup>2</sup> MD; Darleen Lessard<sup>1</sup> MS; Robert Goldberg<sup>1,2</sup> PhD.

<sup>1</sup> Department of Quantitative Health Sciences, and <sup>2</sup> Department of Medicine, Division of Cardiovascular Medicine, University of Massachusetts Medical School, Worcester, MA

**Contact information:** Mayra Tisminetzky, MD PhD, Division of Epidemiology of Chronic Diseases and Vulnerable Populations, Department of Quantitative Health Sciences, University of Massachusetts Medical School, 55 Lake Avenue North, Worcester, MA 01655. mayra.tisminetzky@umassmed.edu

**Background:** Diabetic patients have more complications and higher hospital mortality rates after an acute myocardial infarction (AMI) than patients without diabetes (DM). Increased morbidity and mortality among diabetic patients suffering an AMI is especially concerning given the increasing prevalence of obesity and diabetes in the U.S. and worldwide. The objectives of this study were to describe recent trends in the frequency, patient characteristics, treatment practices, and in-hospital outcomes associated with STEMI and NSTEMI in diabetic compared with non-diabetic patients hospitalized with AMI.

**Methods:** We reviewed the medical records of 6,903 persons, known to be either diabetic (n =2,329) or non-diabetic (n=4,574 ) who were hospitalized for STEMI or NSTEMI between 1997 and 2009 at all 11 greater Worcester medical centers.

**Results:** Diabetic patients presenting with both STEMI and NSTEMI were more likely to be older, female, and obese, and to have a higher prevalence of comorbidities compared with non-diabetics. Diabetic patients were more likely to develop important in-hospital complications including heart failure (39% vs.27%),and atrial fibrillation (18% vs.16%), and had a longer hospital stay (6.3 days vs.5.4 days) compared to non-diabetics. Diabetic patients were significantly more likely to be treated with an angiotensin converting enzyme inhibitor or angiotensin receptor blocker and a diuretic. The proportion of patients undergoing cardiac catheterization during their index hospitalization for AMI approximately doubled during the period under study, while the proportion treated with PCI increased by 3 to 4-fold. The proportion of diabetic and non-diabetic patients undergoing cardiac catheterization was similar, though diabetics were less likely to be treated with PCI and more likely to receive CABG than non-diabetics. In-hospital mortality was significantly higher among diabetics than non-diabetics for both STEMI (13% vs. 10%) and NSTEMI (11% vs. 9%)

**Conclusions:** During the period 1997 to 2009, the use of effective therapies for all patients presenting with AMI has improved, with a concomitant decrease in in-hospital complications and mortality . Nonetheless, diabetic patients experienced , more complications, and worse in – hospital outcomes compared to non-diabetics.