

# Glycemic control in insulin and non-insulin dependent diabetic patients with ST elevation predicts time to presentation.

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## INTRODUCTION

Worldwide, the annual number of people diagnosed with diabetes continues to increase. Classically, Diabetes Mellitus (DM) has been associated with silent or atypical initial symptoms and increased time to presentation in patients presenting with ST elevation myocardial infarction (STEMI) compared to non-DM patients. It is less clear whether the type of treatment or the adequacy of glycemic control impacts the time to presentation and type of symptoms. Therefore, we sought to evaluate the impact of poor glycemic control on these outcomes as measured by hemoglobin A1c

## MATERIAL AND METHODS

In this retrospective study, we collected and analyzed data from 766 patients who presented to a tertiary-care university medical center with STEMI from 2008-2015. Over that timeframe, 238 of the 766 (31%) patients who presented with STEMI had DM. A T-test was performed comparing mean time to presentation in diabetics vs. non-diabetics, whereas both t-tests and  $\chi^2$  tests were used to compare presenting symptoms between the two groups. Regression analysis was performed comparing time to presentation to hemoglobin A1c.

## RESULTS

Diabetic patients presenting with STEMI on average presented 50 minutes later

than non-diabetic patients (194.8 minutes vs. 144.7 minutes,  $p = 0.0054$ ). Furthermore, time to presentation increased ( $p = 0.0035$ ) for every unit increase in hemoglobin A1c level ( $p = 0.0035$ ). Chest pain was the most common presenting symptom in diabetic and non-diabetic patients with similar rates in both groups (87.4% v 89.1%,  $p = 0.561$ ). No statistically significant difference was found in rates of shortness of breath, syncope, or GI symptoms between the two groups.

## CONCLUSION

Diabetic patients have delayed time to presentation compared to non-diabetic patients with STEMI. Additionally, the worse the glycemic control the longer the time to presentation. However, in contrast to prior observations, both diabetic and non-diabetic patients presented with similar rates of chest pain.

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