

# Management of ST-segment Elevation Myocardial Infarction in Comparison to European Society of Cardiology Guidelines in Alexandria University Hospitals

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## **AIM:**

The aim of this study was to determine the major contributors to reperfusion delay in ST- elevation myocardial infarction (STEMI) patients in Alexandria University hospitals and the adherence to ESC clinical practice guidelines.

## **METHODS AND RESULTS:**

Prospective cohort of all patients presented with ST-elevation myocardial infarction (STEMI) with chest pain or discomfort between March 2020 and February 2021 in Alexandria university hospitals. A total of 436 patients were enrolled, 280 patients (64.2%) underwent PPCI, 32 patients (7.3%) had thrombolytic therapy and 124 patients (28.4%) had conservative strategy. In regard to the demographics and risk factors, the mean age of our cohort was 55.2 years. The majority were males (80.9%) and smokers (72.2%). Hypertension was a risk factor in 41.5% of our population, diabetes in 33.5%, and a family history was present in 14.2%, while 7.3% had renal impairment.

The median pre-hospital delay was 360 minutes; mainly due to delay in seeking medical care which was the cause in 45.6%, whereas the mean ER time delay was  $48.24 \pm 89.30$  minutes. The median time from CCU admission to wire crossing was 40.0 minutes with a mean value  $53.86 \pm 49.0$  minutes. The total ischemic time was 372 minutes (6.2 hours) with a mean ischemic time of 408 minutes (6.8 hours). The rate of reperfusion

therapy (PPCI or thrombolysis) was 71.5 percent among all STEMI patients who presented within 12 hours, with achievement of timely reperfusion according to ESC guidelines for management of STEMI in 35.0%. The majority of our patients (70.7%) had door to wire crossing time of less than 90 minutes.

In-hospital overall mortality was 5.5%. The PPCI group had a mortality rate of 2.9 percent, whereas the conservative management group had a mortality rate of 12.9 percent, with a statistically significant difference ( $P < 0.001$ ) between the two groups. In-hospital overall MACE was 27.3%. The PPCI group had MACE rate of 15%, the thrombolytic group had MACE rate of 28.1%, and the conservative management group had MACE rate of 54.8%, with a statistically significant difference ( $P < 0.001$ ) between the three groups.

## **CONCLUSION:**

Regardless of the financial and technical limitations in our center, timely reperfusion rate and performance are not far from meeting ESC 2017 guidelines for the management of STEMI. Primary PCI was the most frequently used treatment modality, and the associated total in-hospital mortality was below 5%. An enormous increase in the total ischemic time is a major concern due to both patients and system delay.

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