

Objectives

Acute ST elevation myocardial infarction (STEMI) is a life-threatening emergency condition. A patient whose STEMI is missed on evaluation has a ~25% likelihood of a very poor outcome, therefore immediate diagnosis and treatment of MI is one of the most important challenges of emergency medicine. Current guidelines for the treatment of STEMI recommend a door-to-balloon time (D2B) of 90 minutes or less for patients undergoing primary percutaneous coronary intervention (PCI).

Crowding in emergency departments is a worldwide problem. Studies have shown a significant association between the emergency room crowding and STEMI patient's adverse outcomes. The emergency department (ED) in Soroka University Medical Center is the busiest in Israel (230,000 visits annually, of which 54,000 are in the internal medicine ED). Between May 2015 - April 2016 a novel "physician coordinator" work model was implemented in the internal medicine ED, in which a senior physician performs a medical triage (in parallel to the nursing triage), identifies emergency cases, especially STEMI, performs urgent procedures, allocates patients to physicians, and activates a cardiologist for immediate transfer of the STEMI patient to catheterization laboratory.

Methods

We compared the data from a period prior to implementation of the new work model (May 2014 - April 2015, "Period A") to a parallel period following implementation (May 2016 - April 2017, "Period B"), for patients with STEMI diagnosis.

We compared the door-to-balloon time (D2B) (in minutes) and the Timeliness rate (%) = the percentage of STEMI cases undergoing PCI in less than 90 minutes.



Results

In Periods A and B there were 151 and 146 STEMI cases, respectively, diagnosed in the internal medicine ED. In order to produce comparison groups, we chose the cases occurring during regular ED staff hours (Period A – 50 cases, and Period B – 49 cases). Median D2B decreased from 97 minutes to 82 minutes ($p = 0.033$) and timeliness rate increased from 46% to 75.5% ($p = 0.005$), respectively.



Conclusions

Implementing a "physician coordinator" work model in the internal medicine ED led to significant improvement in treatment measures: reduced D2B time and increased timeliness rate, for STEMI patients.