

Ischemic delay in ST-elevated Myocardial Infarction patients: rationale for off-site PCI?

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Introduction

Delays in the treatment of acute coronary syndrome should be kept to a minimum to limit the size of myocardial infarction (MI) and to decrease mortality. In the Netherlands the Healthcare Safety Management System (VMSzorg) set up the following goal, according to the European Cardiac Guidelines: at least 90% of the patients with an acute ST-elevated MI (STEMI) should have a system delay of less than 90 minutes (fig. 1).

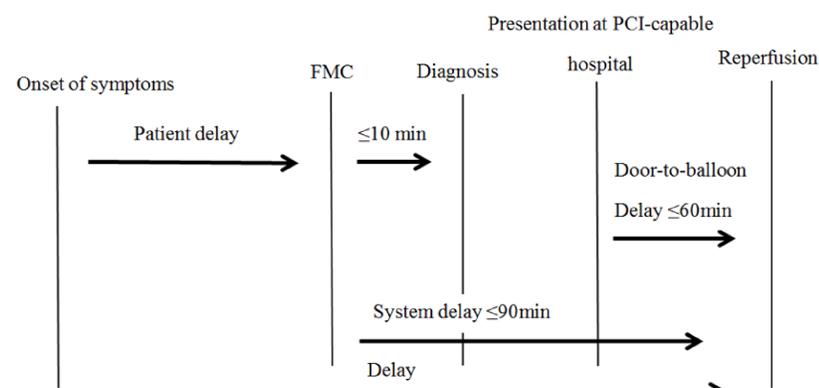


Fig. 1 Delay in ACS care chain as stipulated by the European Society of Cardiology, FMC= first medical contact: first call to medical professional, either G.P., emergency services or hospital

Methods

This is a multi-centred (fig. 2), prospective study including all consecutive STEMI-patients sent to a tertiary hospital for primary PCI (Catharina Hospital Eindhoven). A questionnaire was designed for emergency medical technician personnel. This questionnaire asked for the delays in transportation of STEMI-patients (fig. 1).

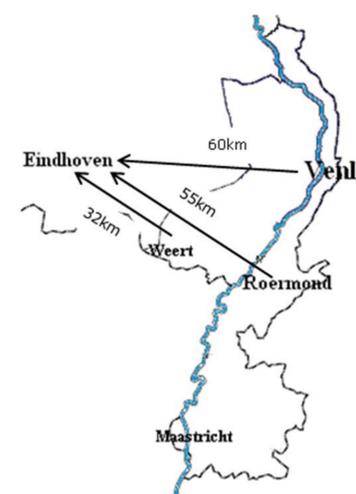


Fig. 2 Distances from hospitals in study area to Catharina Hospital in Eindhoven.

Results

Patient demographics are described in table 1. The average system delay was 98 minutes. The goal of treating STEMI-patients within 90 minutes was achieved in 61,9% of the patients. Among patients who called the emergency services instead of their general practitioner (GP), the goal of 90 minutes was achieved in 83,3% of the patients. The 30-day mortality was 2,50% compared to the Thrombolysis in Myocardial Infarction risk score of 5,38%.

The average delay times are depicted in fig. 3.

Demographics	n(%)
Study population, n	160
Male gender, n(%)	121(75,6%)
Age, years (sd)	61,6(13,03)
Age>75 years, n(%)	29(16,9%)
Presentation during office hours	69(43,1%)

Table 1. Patient Demographics.

Delays

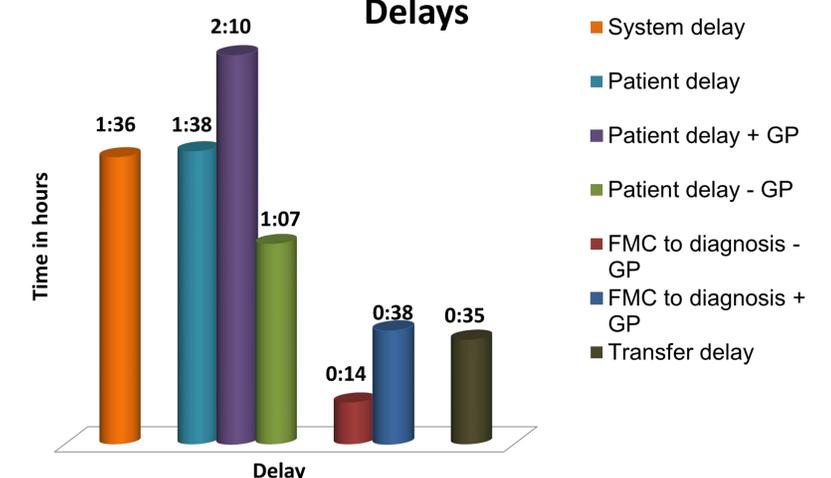


Fig. 3 Delay time. FMC=first medical contact, see fig. 1, System delay=see fig.1, Patient delay=see fig 1, +GP=FMC to General Practitioner, - GP=FMC to emergency services, transfer delay=diagnosis to primary PCI-capable hospital (fig. 2).

Conclusion

The VMSzorg goal was not achieved. There are possibilities to improve delays in the study area. These include the role of the GP and the time to a primary PCI-capable hospital. Improving the delays within the role of the GP will be difficult as patients who call the GP can have less typical symptoms. However, as VieCuri Medical Centre has started performing primary PCIs, the system delay can be greatly improved.

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