Reviewer’s report

Title: Exploring the treatment delay in the care of patients with ST-elevation myocardial infarction undergoing acute percutaneous coronary intervention: a cross-sectional study

Version: Date: 12 November 2014

Reviewer: Matthias Hochadel

Reviewer’s report:

This study is based on 1017 patients who underwent PCI for acute STEMI in 7 Dutch hospitals during the year 2012. The authors made great efforts in the choice of centers and the abstraction of patient charts to collect accurate and representative data. The main target of the analysis is the time from first diagnostic ECG to start of catheterisation which is an essential part of, but not the total system delay. Some clear, although not unexpected findings and recommendations are presented.

Major Compulsory Revision:

It would be of interest to see a unmodified summary of the observed data. The authors should present a descriptive table (e.g. median and quartiles, number of observations) of the available data on treatment delay (as defined in the study), and the ischemic time (from symptom onset to sheath insertion) in total and in the subgroups transferred from other hospitals, with ECG made in the ambulance, by the hospital, and by the general practitioner.

Minor Essential Revisions:

According to table 1, not all patients from the year 2012 were screened for the analysis in each hospital. When was the limit of the screening capacity reached? How were the screened cases selected?

In a subsample patient charts were abstracted by a second independent reader. Which decision was made in case of disagreement?

Do you have information on hospital mortality in this patient population?

Does interhospital transferral mean that the ECG was done at a different hospital? Is it possible to differentiate between ECG done at the same hospital as the PCI, or other hospital?

Can you distinguish between electrocardiograms performed during vs. outside normal working hours (Monday - Friday 8:00 - 18:00)? Are there differences in treatment delays?

The delays caused by transfer from other hospitals or visit to the general...
practitioner might be felt to have additive effects on the time to PCI rather than multiplicative effects. Moreover, the authors report effects on the treatment delay in minutes. As a sensitivity analysis, could the authors 1) look at empirical density curves in the above-mentioned subgroups, and 2) repeat the gamma regression using an identity link instead of a log link?

Fixed effects for the participating centers were included in the regression model. Are the delays significantly different between the centers?

Confidence intervals are not appropriate as a measure of dispersion, as they depend strongly on the sample size. It would be preferrable to show means with standard deviations instead of confidence intervals in the descriptive tables.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

I declare that I have no competing interests.