Reviewer's report

Title: Chest pain in the emergency department: a risk-stratified approach

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Reviewer: Martin J Holzmann

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Review of Chest pain in the emergency department: a risk stratified approach

The authors studied the so called HEART score as a tool to risk stratify patients with chest pain in the emergency department. They included 233 patients of whom 22 patients met the outcome MACE.

General comments

I am a little bit puzzled by the low number of admitted patients. Only 19% of patients with chest pain were admitted, which is low compared with other studies. In addition, considering the low admission rate the proportion of patients with MACE at 6 weeks was only 9%, which also is lower than in other studies where commonly around 15% develop ACS. This does not make sense. How many patients were actually discharged from the ED with an ongoing ACS? I am concerned that there must have been a few.

I believe the authors describe and discuss the Manchester triage system quite extensively without saying that this was one of the aims with the study. However, I believe that this information is important and interesting.

Specific comments

1. In this centre in Coimbra do they really have 4-500 visits per day. That would mean 170-190000 visits per year which I believe is a very high number. Is this really correct?

2. One thing which concerns me is that in the definitions unstable angina is not included in the outcome MACE. Yet, the authors write that the most common diagnosis was unstable angina?

3. I would suggest the authors to do additional analyses in order to investigate if adding the other variables in the HEART score to ECG and troponins would add any information. This is the crucial question. If the variables do not add anything beyond what we already know from the information we get from the ECG and troponins it seems meaningless to use the HEART score in risk prediction.

4. What troponin method was used? I believe that this also is very important, since it is very unlikely that the HEART score would add anything beyond high-sensitivity cardiac troponins.

5. Reference 4 and 16 are the same.

6. Legends to Figure 1. CPOD should be COPD.
Level of interest: An article of insufficient interest to warrant publication in a scientific/medical journal

Quality of written English: Needs some language corrections before being published

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

Declaration of competing interests:

I declare that I have no competing interests' below