Author’s response to reviews

Title: Chest pain in the emergency department: risk stratification with Manchester triage system and HEART score

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Author’s response to reviews: see over
Dear Editor,

I am pleased to resubmit the revised version of the MS: 9725563121287196. We appreciated the constructive comments of the Referees, which enabled us to improve the quality of our manuscript.

Regarding the editorial comments included in the e-mail, the name of the ethics committee that approved our study is the name of our hospital (Centro Hospitalar e Universitário de Coimbra Ethics Committee). In case you consider that we should include this information in the manuscript, we are available to do it.

We would like to thank Reviewer 1 for his positive comments, namely for the recognition of our efforts to improve our manuscript, according to the suggestions initially provided.

We also have addressed the new comments of the Referee 2, as outlined below.

Referee 2:

*Title:* The HEART score (and now also the Manchester triage system) should be mentioned in the title. As it is now, the title leaves the reader wondering what the article is about. There are many possible phrasings, but one suggestion might be: “Risk stratification of chest pain patients in the emergency department with the Manchester triage system and the HEART score”

*Response:* We thank the Reviewer for the suggestion and we agree with it. We have adjusted the title of the manuscript to be clearer: “Chest pain in the emergency department: risk stratification with Manchester triage system and HEART score”.

*Line 73:* Omit the sentence “Chest pain has an extensive differential diagnosis with very different levels of severity.” I fail to see its purpose, we all know this already. Put in a sentence regarding the Manchester triage system instead, to mirror the aim on line 54.

*Response:* We thank the Reviewer for his comment and we have rephrased it in the manuscript’s text as suggested (line 73-74: “Chest pain patients have very
different levels of severity and the discriminatory power of Manchester triage system should be used in the assessment of this population.”).

Line 127: Should be changed to “The HEART score was retrospectively applied to the population according to the information available in the ALERT system and the common electronic health records of our hospital.”

Response: We agree with the suggestion made by the Reviewer and the sentence was modified accordingly (line 127-129: “The HEART score was retrospectively applied to the population according to the information available in the ALERT® system and in the electronic health records of the hospital.”).

Line 331: Change to: “We are unaware of studies where the HEART score has been applied prospectively in real time, but such studies are of course necessary to confirm the prognostic value of the score.”

Response: We thank the Reviewer for his comment and changes were made accordingly (lines 331-332: We are unaware of studies where the HEART score has been applied prospectively in real time, but such studies would be useful to confirm the prognostic value of the score.”).

Figure 2: This figure is good to see, but it is not sufficiently detailed. Please insert how many were admitted or discharged from the ED, and please also insert how many were excluded (in each arm) from the analyses due to lacking data.

Response: We have reformulated figure 2 in order to make it clearer. The new version of the figure is represented below.
Line 256: Change the word “validated” into “retrospectively tested”

Response: We agree with the suggested change (line 257-258: “Finally, we retrospectively tested the HEART score in our population…”).

Line 262: Change the wording to “….population showed that more than a half of the patients were stratified with a green or a yellow level of severity, in accordance with the high incidence of potentially….”

Response: We have corrected the text as suggested (line 263-266: “The analysis of the Manchester triage system in this population showed that more than a half of the patients were stratified with a green or a yellow level of severity, in accordance with the high incidence of potentially benign causes of chest pain.”).

Line 278: The sentence starting with “If we take…” should be changed and shortened into “This diagnosis is thus probably the most frequent one in an unselected population”

Response: We agree with the suggested change (line 280-281: “This diagnosis is thus probably the most frequent one in an unselected population.”).

Line 294: Delete the words “namely in the time from arrival to ECG acquisition”. STEMI patients are few in the ED nowadays - they often go directly to the angio lab. I think that the big problem with under-triage is the general delay in the work-up of NSTEMI and UA patients.

Response: According to the Portuguese Stent For Life initiative (www.stentforlife.pt) for 2013, only 38% of the Portuguese STEMI patients had called the Emergency Medical Services Systems. This means that in our country the majority of the STEMI patients go directly to a health care institution. Therefore we consider that one of the main consequences of a non-reliable triage is to delay the time from patient arrival to ECG acquisition, potentially delaying reperfusion therapy for STEMI patients.
Line 303: Exchange the word “define” for “create”

Response: We have corrected the text as suggested (line 304-305: “This score was developed as an attempt to create an easy-to-use ACS risk quantification”).

We have worked carefully to respond to the comments raised by the Reviewers and we hope you will find this version of the manuscript worthy of publication.

With best wishes,

Luís Leite