Author’s response to reviews

Title: Prehospital characteristics among patients with sepsis. A comparison between patients with or without adverse outcome

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Author’s response to reviews:

Response to the editor and reviewers!

Thank you for taking the time and effort to review our manuscript. We appreciate your constructive comments, which have helped to improve the manuscript. Below follows the comments from reviewer 2 and 3 and our responses. The revisions made are coloured yellow in the manuscript.

Best regards from the authors

Reviewer 2 comments;

Reference?

From who? Reference?

Reference to support this?
Authors comment; There were several comments regarding references in the abstract and the background. We have carefully read the guidelines and according to these references should not be used in the abstract. In the background references are added.

Reviewer 2 comments;

Some prehospital studies have shown this to be as high as 70%. Maybe worth having another search?

Authors comment;

A comment was made on higher number of patients with sepsis being transported by EMS clinicians. Accordingly, we have added new references as suggested here.

Reviewer 2 comment;

I have read papers finding this to be much higher. May be worth another search?

Authors comment;

Another comment was made on few number of patients being identified as having sepsis in this setting. Accordingly, we have added new references as suggested here.

Reviewer 2 comments;

Why do you think this is? Suggests it not just about early identification. What are the other significant components of pre hospital sepsis care that are missing and not standardise practice? No need to comment in paper, food for thought...

Authors comment;

Thanks for the input. It is important to consider the point made, even though we have not made changes in the paper according to that.

Reviewer 2 comment;

What do you mean by this? That the other 86% had normal vital signs and still developed sepsis? This sentence may need to be re worded so it links to the previous one and really gets your point across.
Authors comment;

We have re-organized the sentences in the manuscript and tried to improve this sentence.

Reviewer 2 comment;

A recent paper highlighting this was published in the online journal of Emergency Medicine Australasia

Authors comment;

A comment was made in the manuscript regarding a reference in the online journal of Emergency Medicine Australasia. We have made a search, but have not found any studies highlighting this. Please let us know which article you suggest for the paper if required.

Reviewer 3 Comments;

I understand the limitations for this retrospective inquiry into EMR data but appreciate the exploratory of the study. Of significant issue is the statistical outcomes presented. The Figures 1-3 show box plots that have overlap and medians that overlap the inter-quartile boxes that generally mean there are not significant differences, and median lines that overlap the boxes leaving even less certainty that they are different. This needs to be better explained to then make the argument that they are characteristic of adverse outcomes. Statistically, identifying odds ratios might give the reader a better illustration of risk. Neither specificity or sensitivity were explored, which might again be helpful. This may make the abstract and conclusions read differently.

Authors comment;

Thanks for the input. We have carefully reconsider the points you made. Box-plots (figure 1-3) are now removed, and we have instead supplemented with a new table that shows sensitivity, specificity and positive and negative likelihood ratio. Hopefully, it can statistically lead to a better overview of the results and the discussion.

Reviewer 3 comment;

Additional information or citations as to the critical time period/ rationale for antibiotics would add to the rationale of why EMS could add to the systematic care of sepsis patients (near line 76).
Authors comment;

We agree and have added information about the rationale for why EMS care is important and what it could add to the systematic care of sepsis patients.

Reviewer 3 comment;

Line 80- Despite the prehospital screening tools and treatment guidelines that are available, there is still extensive patient morbidity and mortality due to sepsis [13].--- some more details as to what "extensive" means for morbidity and mortality would help from an EMS context.

Authors comment;

We have added some more details according to comment.

Reviewer 3 comment;

Ln 111- Population- For clarity, only people with the retrospective diagnosis were identified. Who did this original work? Ljungstrom? Then there was a filter for adult; specific hospital, and IV. Why was population limited to these months and year and hospital? Would a larger sample be more representative statistically? Or was this a convenience element?

Authors comment;

That is correct, Ljungstrom did the original work with identifying this group of patients with sepsis. We agree to your comment that the sampling was convenience and have made changes to make that more clear for the reader.

Reviewer 3 comment;

Ln 128- Data collection- it is unclear if the current authors collected the data or are describing how the data was collected for a previous study, if the later then it should be cited this way.

Authors comment;

We are sorry for being unclear. As previously described Ljungstrom did the original work with identifying this group of patients with sepsis. Even though all data in the current study was collected by the first author.
Reviewer 3 comment;
For consistency if you have a frequency then put percentage for all. Ex Ln 164, 166, 167, 168.
Authors comment;
We agree with reviewer and have added information regarding percentages.

Reviewer 3 comment;
Ln 168 "Of those 36 . . " needs rephrasing or made into a complete sentence and consider ordering them in terms of severity.
Authors comment;
We have re-organized the sentence according to comment.

Reviewer 3 comment;
Ln 169 "There were no . . " -- there are 3 groups mentioned in the previous sentence.
Authors comment;
We are sorry for being vague and have rewritten the sentence to make it more clear which groups we mean.

Reviewer 3 comment;
Ln 171 "When comparing . . ",-- how did this compare to the ED diagnosis and action? Are we expecting EMS to do a better or equal job as physicians?
Authors comment;
This is an interesting and important point. However, we don’t expect EMS to do an equal job as physicians. Previous studies points to that early suspicion of sepsis, can reduce time to treatment in the ED for these patients. Still, the knowledge regarding identification of patients with severe sepsis is limited.
Ln 179 is this with any level of sepsis?

Authors comment;
Yes, it is, and we have rewritten the sentence accordingly.

Reviewer 3 comment;
Ln 182- why doesn't shivering come out as a counter sign in any of the discussion on conclusion or used in the logistic regression.

Authors comment;
We have considered the comment and have highlight shivering in the discussion.

Reviewer 3 comment;
Tables 3 & 4-- Max serum glucose appears to be measured in mmol/l not mg/dL

Authors comment;
Changes are made according to comment.

Reviewer 3 comment;
In the discussion there is little attention to the reasons as to why EMS might not be identifying these patients, which might be more social/training, tools like EMRs not asking or combining these S/S into sepsis differential, etc.

Authors comment;
We have consider this point and developed the discussion.

Reviewer 3 comment;
No connection between those who EMS identified and subsequent treatment. Nor, any look at those who might have been identified by EMS but who didn't ultimately have sepsis.

Authors comment;
We have reconsider it and mention this in study limitations.
Reviewer 3 comment;

The use of the "parameters" should be reconsidered as there are no limits or thresholds measured and validated. Perhaps characteristics, signs/symptoms, or vital signs would suffice.

Authors comment;

We have made changes according to comment. The prehospital parameters is changed to prehospital characteristics in the manuscript.

Reviewer 3 comment;

The discussion of hyperthermia as a sign of sepsis and not the findings of this inquiry might be associated with the statistics used and interpretation.

Authors comment;

We have rewritten the sentences and clarified that further research is required to evaluate the body temperature and its outcome in patients with sepsis.

Reviewer 3 comment;

Ln 268- Hyper?

Authors comment;

It should be hypo, the findings of this study shows that low body temperature was found to be associated with in-hospital mortality in the patients with sepsis.