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Peer Review Report for "Cognitive Dysfunction and Survival in Hospitalized Patients with Delirium: A 12-Month Prospective Cohort Study"

Author(s): Mousa Kiani Chelmardi, Raheleh Rafaiee, Seyed Davood Hosseini Talari, Nadia Abedi Omali, Seyed Hamzeh Hosseini

Review Timeline:

Submit Date:	3 Oct 2020
Revised Date:	26 Jan 2021
Accepted Date:	29 Jan 2021

Revision (0)

Here, you can see the **Reviewers**, **Associate Editors** and **EICs'** comments from the beginning to the end of the revision process.

REFEREE: Reviewer | **Revision** (0)

7 Oct 2020

Dear AE,
Comments for the authors:
1. The current study was performed on 100 delirious patients so you can't assess the effect of delirium. Revise title of the manuscript.
2. Transfer the following information to the results section of abstract: "12 patients died in hospital and cumulative 3-month mortality was 40%. 60 patients leave for a one-year prospective cohort study."
3. The individual studies have been described in previous study??
4. How about inclusion/exclusion criteria?
5. In survival analysis, lost to follow-up patients must be consider as censored cases. Why lost to follow-up patients were excluded?
6. Remove the following: "P values were calculated though tests of maximum likelihood".
7. We analyzed by descriptive statistics!?
8. The median survival of patients was 25 days?
9. Use "hazard ratio" instead of "risk ratio".
10. Method of variable selection is not clear in Cox regression.
11. In Table 3 did you report results of the logistic regression model or univariate analysis?

How about other variables?
12. How about survival analysis for different categories of MMSE total score?
Thanks.

REFEREE: Reviewer | **Revision** (0) 24 Dec 2020

Dear AE,
This study investigated the effect of delirium on cognitive impairment and survival in a one-year follow-up period in hospitalized patients. This study suggests that evaluation of delirium is necessary for hospitalized patients, especially the elderly; This assessment can help control and treat it quickly to prevent further disorders.
- In the discussion section, the contradictions and the results of different studies are well mentioned. However, as the authors mentioned in the limitation, it is recommended further studies be performed with larger sample size.
- The article needs to be edited in terms of English writing and grammar. There are also some confusing and incomprehensible sentences mentioned as comments in the attachment.
- The attachment contains some corrections and comments.
Thanks.

REFEREE: Associate Editor | **Revision** (0) 16 Jan 2021

Dear EIC,
The manuscript is studied, and there are some comments which should be addressed by the author. According to the comments, the document needs major revision.
Kind regards,

REFEREE: EIC | **Revision** (0) 16 Jan 2021

Dear Author,
The reviewers' comments are mentioned. Please correct the details as mentioned above carefully according to reviewers' request.
Thanks.

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Revision (1)

Reply to Reviewers

Ideally, the reviewing process can significantly improve the submitted manuscripts by allowing the authors to take into account the advice of reviewers. Author(s) must reply to all reviewers' comments in a separate Word file, point by point. A "**Reply to Reviewers**" document is submitted along with revised manuscript during submission of revised files, summarizing the changes that the authors made in response to the reviewers' comments. The responses to reviewers' comments specifies how the authors addressed each comment the reviewers made.

You can read the authors' responses to the reviewers' comments in the next page.

Dear Dr. Kamran B. Lankarani,

Thank you for your email dated 16 January 2021 enclosing the reviewers' comments. We have carefully reviewed the comments and have revised the manuscript accordingly. Our responses are given in a point-by-point manner below. Changes to the manuscript are shown in yellow. We hope the revised version is now suitable for publication and look forward to hearing from you in due course.

Sincerely,

Dr. Seyed Hamzeh Hosseini

Response to Reviewers:

Thank you for reading our manuscript and reviewing it, which will help us improve it to a better scientific level. Our response follows.

Reviewer #1:

1. The current study was performed on 100 delirious patients so you can't assess the effect of delirium. Revise title of the manuscript.

Response: We thank the reviewer for this comment. Title of the manuscript was corrected.

New Title: *Cognitive Dysfunction and Survival in Hospitalized Patients with Delirium: A 12-month Prospective Cohort Study*

2. Transfer the following information to the results section of abstract: "12 patients died in hospital and cumulative 3-month mortality was 40%. 60 patients leave for a one-year prospective cohort study."

Response: We thank the reviewer for this comment. The mentioned information transfered to the results section of abstract.

3. The individual studies have been described in previous study??

Response: We thank the reviewer for this comment. It was corrected (Page 1, lines 32-34).

4. How about inclusion/exclusion criteria?

Response: We thank the reviewer for this comment. It was added to methods section (Page 1, lines 37-39).

5. In survival analysis, lost to follow-up patients must be consider as censored cases. Why lost to follow-up patients were excluded?

Response: We thank the reviewer for this comment. It was corrected in methods section (Page 1, line 43). In our previous research, 100 delirious participants were sampled from general hospital from January 2018, through October 2018. 40 patients died in 3-month after discharge and the result reported in our previous paper (Reference 24). 60 patients leave for a one-year prospective cohort study (present study). Of 60, four patients didn't respond to follow up and deleted from second study.

24. Mehrabani P, Hosseini SD, Rafaiee R, Hosseini SH. Three-Month Mortality and Related Risk Factors in Delirium Patients: A Prospective Cohort Study. Shiraz E-Medical Journal. 2020;21(5). doi:10.5812/semj.93460.

6. Remove the following: "P values were calculated though tests of maximum likelihood".

Response: We thank the reviewer for this comment. It was removed from the last paragraph of the methods section.

7. We analyzed by descriptive statistics!?

Response: We thank the reviewer for this comment. It was removed from the last paragraph of the methods section.

8. The median survival of patients was 25 days?

Response: We apologize for the confusion and thank you for pointing out this problem. It was corrected in results section (Page 2, line 26).

9. Use "hazard ratio" instead of "risk ratio".

Response: We thank the reviewer for this comment. It was corrected (Page 2, lines 33 & 35).

10. Method of variable selection is not clear in Cox regression.

Response: We thank the reviewer for this comment. Using the log rank test, effective factors were identified and significant variables along with variables with P<0.3 were entered into the model. Then, using the Backward elimination, we determined the remaining variables in the semi-parametric Cox model. Method of variable selection was added to methods section (Page 2, lines 17-19).

11. In Table 3 did you report results of the logistic regression model or univariate analysis? How about other variables?

Response: We apologize for the confusion and thank you for pointing out this problem. It was univariate analysis and it was corrected in result section (Page 2, line 43) and table 3. The present results are from the fitting of the Cox semi-parametric model which remains in the final model using the backward elimination method and other variables were removed from the model.

12. How about survival analysis for different categories of MMSE total score?

Response: These variables (different categories of MMSE score) were removed from the model and did not remain in the model. As mentioned in methods section, significant variables along with variables with P<0.3 were entered into the model (Page 3, lines 42-43).

Reviewer #2:

1. In the discussion section, the contradictions and the results of different studies are well mentioned. However, as the authors mentioned in the limitation, it is recommended further studies be performed with a larger sample size.

Response: We thank the reviewer for this comment. It was added (Page 3, line 43 & Page 4, line 1).

2.The article needs to be edited in terms of English writing and grammar. There are also some confusing and incomprehensible sentences mentioned as comments in the attachment.

Response: We thank the reviewer for this comment. Manuscript rechecked and corrected for grammatical mistakes. English editing based on reviewers' comments was done to make the sentences of the article more comprehensible.

Reviewer 's comment in attachment:

Methods section:

3."The individual studies have been described in previous study (24)." What is the use of this sentence in this section? The sense of the sentence is not clear!

Response: We thank the reviewer for this comment. More detailed information was added to methods section. The present manuscript reported second part of a research. The three-month mortality and related risk factors in this sample have been described in our previous study (24) and present study followed these patients for a year. Clinical characteristics of patients was described in previous paper (24) and we mentioned for readers.

24. Mehrabani P, Hosseini SD, Rafaiee R, Hosseini SH. Three-Month Mortality and Related Risk Factors in Delirium Patients: A Prospective Cohort Study. Shiraz E-Medical Journal. 2020;21(5). doi:10.5812/semj.93460.

4. The results should be mentioned in the "Results" section, not in the "Method" section.

Response: We thank the reviewer for this comment. The characteristics of participants and sampling that mentioned in methods section (*Briefly, 100 delirious participants (79.9±15.1 yr, 24% female) were selected from the general hospital from January to October 2018. Twelve patients died in hospital and cumulative 3-month mortality was 40%.*) are some results of our previous study on this sample (three-month mortality) and we completely described in our previous published paper. We mentioned them briefly in the method section of this manuscript to describe participants. The

results of one-year survival and cognitive assessment were evaluated in present study and reported in results section.

Discussion section:

5. What do you mean by "young patients with … entered in our sample"? As you mentioned earlier in the Method section, patients' age in your study is 79.9±15.1 years old; And this is not a young age.

Response: We thank the reviewer for this comment. Seventeen participants aged below 55. So, we think because of the heterogeneity of patients in term of age, there is no significant association between age and 1-year survival after delirium. It was corrected (Page 3, lines 22-23).

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Revision (1)

Here, you can see the **Reviewers**, **Associate Editors** and **EICs'** comments from the beginning to the end of the revision process.

REFEREE: EIC | **Revision (1)** 29 Jan 2021

Dear Author,
The document is reviewed carefully by the reviewers. According to their comments and your revisions as requested, this manuscript is accepted.
Thanks.