Reviewers report

Title: Risk Factors of Health Care-Associated Infection in Elderly Patients: A Retrospective Cohort Study Performed at a Tertiary Hospital in China

Version: 0 Date: 25 Jun 2019

Reviewer: Enric Limon

Reviewers report:

Our congratulations to the authors for having done a research with a significant sample of patients in a hospital of high complexity. Having data on HAIs in a population of patients over 65 years old in a country like the Republic of China where the aging rates are among the highest in the world is of great value. This work provides relevant information to know the risk factors for HAIs and how to prevent them in this age group. On the other hand, in your text, you have cited the results of some unpublished work that you have achieved, which is not recommended. There is a very important factor which is the inclusion of body weight as a factor to consider that deserves to deepen with such an important sample.

Abstract:

* The method section (Design, setting, and participants) of the abstract is somehow more specific than the main text.

* What do you mean by "body weight and operation decreased OR…"? If they are protective factors, it must be specifically indicated

* The conclusion must be based on the findings. In the summary, body weight is not inserted as a relevant conclusion, but it deserves a paragraph in the conclusion section (164).

Background/literature

* The gap in knowledge is not stated clearly. More studies on this issue need to be reviewed. Multiple variables have been introduced into the study but the system for choosing these variables based on relevant studies is not clear. The most relevant works should be cited based on the different categories of extrinsic risk factors of the patient, invasive procedures, medication and stays in risk units, intrinsic comorbidities, immunological factors and body weight.
Methods

* The method is not clearly explained. So that you mentioned only some parts of the data gathering in the sentence: "the data were collected using an automatic online HAI surveillance system." All components of the method must be explained briefly.

* It is not clear that how each data is treated. What is the aim of gathering each data? It is not clear that each data is collected from which participants and how many of them.

* No representative of the infection control team that has collected the infections’ data is included in the authors.

* What is the instrument for gathering data about diagnostic of infection? What about their validity and reliability? What is the difference between nosocomial infection, community infection and Health care-associated infection (HCAI)?

* The definition of infection is based on the definitions of the Chinese Ministry of Health but the reference provided is that of the CDC, which means that there is an adaptation of the definitions in an unpublished document.

Results

* Table 1 includes results related to the person's own data and data on hospital stay. While the rest of the variables studied are included in table 2. It must be explained why the sums expressed in table 2 do not correspond to the 60,332 (age sum 61912). You are using some elements of exclusion that are not present in the methodology.

* When using a single table 2 to present all the results without differentiating the presentation criteria. Have they only been presented based on the significance of p?

Discussion

* The discussion must be focused on the current findings, and the comparison with the findings of previous studies should be made. Much of the text under discussion in this manuscript are about the problem statement and are more suitable for the introduction.

* The limitations must be revised.
Conclusion

* The conclusion must be based on the findings.

The authors should differentiate between extrinsic and intrinsic risk factors and be prudent with protective factors without specific research on the subject based on a retrospective study.

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

Yes

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

Yes

**Are the conclusions drawn adequately supported by the data shown?**
If not, please explain in your comments to the authors.

Yes

**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

**Quality of written English**
Please indicate the quality of language in the manuscript:

Acceptable

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