Reviewer’s report

Title: Prognostic nomogram for inpatients with asthma exacerbation

Version: 0 Date: 18 Sep 2016

Reviewer: Andriana I. Papaioannou

Reviewer's report:

In this study the authors have used a large nationwide inpatient database in Japan in order to investigate the possible associations of several clinical features and factors to in-hospital mortality in patients admitted with asthma exacerbations. Furthermore, the authors are generating a nomogram to predict in hospital prognosis for these patients.

This is a very interesting study showing factors that seem to influence the outcome of asthmatic patients admitted to the hospital due to asthma exacerbations.

The main strength of the study is the large number of data that it includes. However, its retrospective design leads to some limitations that cannot be ignored.

1. The authors do not specify if they have excluded smokers or what was the effect of smoking history in the outcome of asthma exacerbations. It is known that the outcome of asthmatic smokers is worse compared to non-smokers and this is an important variable that had to be tested.

2. Were patients with concomitant COPD (i.e. patients with ACOS) excluded? If not, this might be an important bias.

3. I do not totally understand why patients who died due to asthma exacerbation in the first two days after admission were excluded from the analysis. Especially to these patients the health status on admission might have played an important role. I believe that these patients should be also included to the total number of patients with bad outcome and the authors might also divide patients who died, in those with early (i.e within the 2 first days) or late (after the 2 first days) mortality.

4. The authors do not include therapy in their analysis. The use of ICS is of major importance and as stated to the introduction section lack of its use has been related to more adverse outcomes.

5. The use of rescue medication should also be included.

6. Socioeconomic variables (which might also affect adherence to therapy should be also included to the analysis)
7. Were all deaths asthma related? Were any deaths related to other factors? Such as sepsis, heart failure, ischemic heart disease etc?

**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 recommend additional statistical review

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Please indicate the quality of language in the manuscript:

Acceptable

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