Reviewer’s report

Title: The Mortality Risk Factor of Community Acquired Pneumonia Patients with Chronic Obstructive Pulmonary Disease: A Retrospective Cohort Study

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Reviewer: Silvia Terraneo

Reviewer's report:

Summary of the study

Dai R-X. et al performed a retrospective multicentre study in two Chinese hospital to assess the characteristics and the mortality risk factors of CAP patients with COPD and to find an appropriate severity score system to assess the severity of CAP patients with COPD.

Data of 520 CAP patients were retrospectively collected; 230 of them had been diagnosed with COPD (COPD-CAP).

Severity scores (PSI, CURB-65 and APACHE-II) were higher in patients with COPD than in patients without but no differences were found in in-hospital mortality or in 60-day mortality between the two groups.

Aspiration, D-dimer higher than 2.0 μg/mL and CURB-65 ≥ 3 were individuated as risk factors associated with in-hospital mortality while aspiration, the need for NIMV and CURB-65 as risk factors associated with 60-day mortality in the COPD group.

PSI, CURB-65 and APACHE-II scores were analysed and no differences between them were observed in predicting mortality.

I do have some comments about the paper:

Major:

I suggest better clarifying the aim of the study and consequently structuring the text. The title of this work refers to "mortality risk factor of CAP in COPD" but at the end of the introduction you wrote about the comparison of the predictive values among the scores on different clinical outcomes. First: what do you mean with "different" outcomes? I guess mortality (in-hosp and 60-
days) but it would be better to clarify it. And then, the first part of results is about COPD characteristics and outcomes compared to non-COPD and the comparison between scores is on the contrary reported at the end of the "Results" section. The same suggestions apply to the abstract as well.

In methods you categorized mortality as primary outcomes and the need for NIMV and ICU admission as secondary but I could not find analysis about this last in Results section. Why?

Methods

I suggest to better explaining: how did you select CAP patients? Do you have a prospectic database? Did you collect the data from medical records? Please explain how were the patients diagnosed with CAP (please explain ref 3). Please explain what do you mean with life threatening diseases over 1 year (second exclusion criteria) and why did you choose it as exclusion criteria. Data collection: please better explain how did you collect data: two independent physician but how? Did both physicians collect all data? How did you choose which data to analyze? How did you assess mortality?

Minor:

Abstract line 13: I suggest inserting the percentage of COPD

Methods, statistical analysis line 17: I suggest inserting "Receiver-operating characteristic"

Results patient's characteristics line 2 page2: I suggest to remove "The COPD-CAP patients were predominant in GLOD 2 and GLOD 3 (34.8%, 38.3%)", this information is clear from table 1
Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

No

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

Unable to assess

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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