Reviewer’s report

Title: Serum cortisol predicts death and critical disease independently of CRB-65 score in community-acquired pneumonia: a prospective observational cohort study

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Reviewer: Jorge Salluh

Reviewer’s report:

Kolditz and coworkers have evaluated the role of cortisol as a marker of disease severity, death and severe complications related to CAP in a large prospective cohort of the CAPNETZ.

The study brings some new data on cortisol in CAP, but its major strength is to validate its role as a predictor of outcome in a large cohort. Most previous studies both on hospitalized non-ICU CAP (Christ-Crain/Gotoh) or those in patients with severe CAP (Salluh 2006/Salluh 2008/Salluh 2010/Brivet 2008) included either a small number of patients (Gotoh/Salluh/Brivet) or a heterogeneous population regarding disease severity at presentation (Christ-Crain).

However, the study has some shortcomings and I will address them below. I expect it may help the authors to improve the manuscript making it better for the potential reader.

1-Both in the introduction and discussion the authors state that scores fail to identify patients at risk for clinical deterioration. However, the SMART-COP (Charles PG et al - Clin Infect Dis. 2008 Aug 1;47(3):375-84.) is a score validated for this purpose and should be mentioned by the authors.

2-A comparison with the performance of smart-cop is, then, valuable and welcome, though I would understand if not feasible. But in this case should be mentioned as a limitation. This is especially important because the AROCs of Cortisol+CURB-65 are similar to those of smart-COP...

3-Although mentioned in the discussion, the exclusion of patients previously taking steroids should be included in the METHODS section

4-Did any patient receive steroids (as adjunctive therapy for CAP or for bronchospasm) before drawing blood samples? was this controlled?

5-Considering the relatively small number of deaths/complications How many (and which) variables were entered in the Multivariate analysis. This concern is related to the risk of overfitting.

6-What were the causes of death in the population as stated by the physicians. It is very hard to say that a death is related or not to pneumonia, specially with the current knowledge that pneumonia increases the risk of death years after its
initial event (Arch Intern Med. 2003 Feb 10;163(3):317-23.)

-There are minor typos and need for english/grammar checking

Level of interest: An article of outstanding merit and interest in its field

Quality of written English: Needs some language corrections before being published

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I declare that I have no competing interests