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: Stefan Krueger

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Review BMC Infectious Diseases

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

Aim of this paper was to evaluate serum cortisol as biomarker for the prediction of adverse outcome independently of the CRB-65 score.

The study design is correct to answer the main question of the paper.
The methods and material are clearly described.
The statistical analysis is correct.
The implications in the discussion are supported by the data of the paper.

Major comments:
1. The strength of the study is the large patient cohort studied and the absolute number of death and complications.

Minor comments:
1. The biomarker levels should be given not only as median, but as median [IQR].
2. The rates of death are somewhat higher in CRB-65 classes 1-4 compared to other studies. Is there a specific explanation for this?
3. It would be nice to have the ROC curve with cortisol, CRB-65 score and the combination of both as an additional figure.
4. Antibiotic pre-treatment: besides reference 28 please include also 2 other important references with respect to this topic (J Antimicrob Chemother 64, 159-162 (2009) and Clin Chim Acta 411, 1929-1934 (2010))
5. It is not correct that there is no data about the new cardiovascular biomarkers and the prediction of critical pneumonia or complications in pneumonia. Please include references from the ProHOSP trial including data for proANP, proET-1, proAVP, proADM. (Crit. Care. 14, R106 (2010), Intensive Care Med. 37, 970-980 (2011))
6. Please provide an additional table giving cortisol levels in patients with and
without complications, i.e. data for death during antibiotic treatment, mechanical
ventilation, catecholamine treatment, ICU admission (each cortisol in pts positive
vs. negative).

7. Are cortisol levels different in men and women? Is there a gender dependent
correlation of cortisol with CRB-65 score?

8. What are the positive and negative predictive values of cortisol levels > or <
the cut off 795 nmol/l for the prediction of death and complications? One would
expect a better negative than positive predictive value.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

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