Reviewer's report

Title: Pneumonia severity, comorbidity and 1-year mortality in predominantly older adults with community-acquired pneumonia: a cohort study

Version: 2
Date: 10 November 2014

Reviewer: Pasco Hearn

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This is a retrospective study which appears to show an association between the need for hospitalisation with CAP and one-year mortality following discharge.

Firstly some explanation for describing the study as of 'limited interest':

Given the lack of a 'Gold Standard' in this area, as the authors point out, it is difficult to evaluate the usefulness of the CURB-65 score to predict one-year mortality. Previous studies have shown an association between co-morbidities and longer term mortality and so comparison with CCI appears sensible, but I'm not sure this is a clinical tool that is used much outside the research setting (although I may be wrong with regards to the authors' setting)

My reading of the results and the AUROC values would be that none of the tests allow much discrimination in terms of predicting mortality, but that a CURB-65 risk level above 'low risk' is associated with one-year mortality, as is the finding of significant comorbidity. A CURB-65 score reflective of 'low risk', without significant co-morbidity, would also be a group where treatment as an out-patient would be indicated. The CURB-65 score confirms that hospitalised patients are at greater overall risk of death within a year and that higher acute mortality risk also equates to higher longer term mortality.

Minor essential revisions:

1) Results: Page 7, line 33 - Page 8 line 1 "293 patients (76.7%)"

- I think this should read "293 patients (58.8%) if referring to both intermediate AND severe cases - 293 of the 498.

Discretionary Revisions

1) With the use of local registries to gather information on mortality, the authors state that this method is 'reliable even when performed retrospectively'. Is there a reference to support this and is there any indication of numbers of deaths not recorded for reasons such as patients moving out of the area etc?

2) There was mention of the long term mortality rates in hospitalised CAP patients being sustainably higher than that of the general population. It would be useful to put a number to this rate and also an age-adjusted rate for the study
population, given that this is a geriatric unit where the age will presumably be skewed towards the elderly.

3) The abstract appears to drop CRB-65 in the conclusions and discuss introducing only CURB-65 as a tool for predicting one-year mortality. It may be useful to spell out a comparison of the relative value of the slightly different scores.

4) As the authors have briefly outlined the method of calculating the CURB-65 score, it may also be useful to mention the CCI in a bit more detail and explain the significance of the scores derived.

5) It may also be useful to describe in more details what is meant by further monitoring of patients after discharge, if suggesting to use the CURB-65 to estimate longer term mortality.

Level of interest: An article of limited interest

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