Reviewer's report

Title: Clinical implications for patients treated inappropriately for community-acquired pneumonia in the emergency department

Version: 1
Date: 7 January 2014

Reviewer: Bryan Alexander

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Overall, this is a very well-designed, considered, and written study of the risks of inappropriate empiric therapy in patients presenting to the ED with HCAP risk factors. The authors have reinforced important conclusions previously noted in other studies and introduced a few of their own. The study does move forward the state of knowledge in the field.

Major Revisions

None.

Minor Revisions

Methods, Paragraph 1 – There is no mention in this paragraph that one of the inclusion criteria was culture positivity. This may seemingly go without saying based on the study premise, but should be stated clearly in this paragraph.

Discussion, Paragraph 4 – Was there any analysis of the causes/indications of 30-day readmissions? Any indications of increased rates of incomplete or slowly resolving therapy, adverse effects, or superinfections? Could many of them not have been significantly related to causes other than pneumonia complicated by inappropriate antimicrobial therapy, especially in a cohort with significantly more comorbidities? This seems to be potentially reinforced by the multivariable analysis of 30-day readmission demonstrating its strongest correlations with PVD and CURB 65 (a score of generalized acute severity-of-illness)? Although this study certainly suggests a link, the conclusions linking 30-day readmission to inappropriate HCAP treatment seem the hardest to substantiate given this study design.

Discussion, Paragraph 5 – An additional limitation to study design/selection that should be addressed is the bulk of patients that develop clinical CAP (both with HCAP risk factors or not) that never have positive culture results. Given that the nature of the study question demands an evaluation of culture positive patients, the design is quite appropriate. However, it is important to consider that this population intrinsically over-represents the severe end of the CAP/HCAP spectrum. In so doing, the conclusions drawn or implied that empiric HCAP regimens should be more universally applied may not apply equally to a less severe CAP population without positive culture results.

Discretionary Revisions
Figure 2 – This figure does not appear to convey information in any special or necessary fashion. Consider removing this and instead reporting the details in the 5th paragraph of the Results section.

**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