Reviewer's report

**Title:** A comparison of microbiology and demographics among patients with healthcare-associated, hospital-acquired, and ventilator-associated pneumonia: a retrospective analysis of 1184 patients from a large, international study

**Version:** 1  **Date:** 23 April 2013

**Reviewer:** Marya Zilberberg

**Reviewer's report:**

This is a solid secondary analysis of a RCT of treatment for MRSA nosocomial pneumonia and HCAP. I have no major objections to anything the authors did or stated. There are just a couple of points that need to be brought out.

1. To be precise, this is a study of culture-positive pneumonia. A part of the argument against HCAP and broad treatment is that over 50% of patients with HCAP do not have a positive culture, and many of those do just fine on CAP antibiotics. It is important to be very clear on the fact that what is studied here, as in most HCAP literature, is culture-positive pneumonia. This impacts the generalizability of the findings.

2. The authors should consider removing any mention of mortality in this paper. There are several reasons for it, the most important of which is that the numbers seem to stand in a vacuum. That is, the pneumonia groups are clearly different from one another, and the similar mortality rates quoted are neither here nor there without further data or analysis. Furthermore, if I am not mistaken, this ITT population from the trial includes patients who were later excluded from further analysis if they did not have MRSA. So their hospital treatment and course were not followed, is this correct? Without understanding these variables, the raw mortality is not informative.

3. The authors advocate for keeping the HCAP classification as a tool to risk-stratify patients with potential MDR pneumonia presumably so as to treat with appropriately broad spectrum drugs. How do the authors reconcile this conclusion with the findings in Ref #24?

4. I am having trouble with the MDR designations as used in this paper. More recent literature (see Marangakis et al) has attempted to reduce the definitional confusion around MDR definitions among Gram-negatives in particular. The authors should consider using the updated language when appropriate or come up with an alternative name (e.g., potentially resistant organisms).

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable
Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I have received research and consulting funding from several antibiotics manufacturers. I have also published in the field of pneumonia research, particularly HCAP.