Reviewer's report

Title: Incidence and characteristics of invasive Staphylococcus aureus infections: a population-based study in 3 regions of Korea, 2009-2011.

Version: 2 Date: 16 October 2013

Reviewer: Achim Kaasch

Reviewer's report:

Song et al present interesting data on invasive S. aureus infection from 3 different regions in South Korea. They examine the incidence, clinical presentation and outcome. Overall, the data is presented in a clear and logical way. However a few issues remain.

Major compulsory revisions:

1) 10 of 44 hospitals with clinical microbiology labs were included in the study. This is a potential bias. Have the authors assessed this potential bias? Did this select for example for larger hospitals?

2) The measured incidence of invasive infection is dependent on the number of diagnostic tests performed (e.g. the number of blood cultures per patient). Is there any data available on the number of blood cultures taken per hospitalized patient, or any similar data?

3) In table 4 data on appropriate antibiotic therapy is shown. However, exact definitions are missing and it is unclear whether the choice of substance, dose and duration were assessed. Furthermore, this data is not discussed in the text. Interestingly, inappropriate definitive antibiotic therapy did not have an effect in the multivariate model. How do the authors explain this finding?

Minor essential revisions:

4) Methods: What is meant by “new town”?

5) In some places in the manuscript it is unclear what is meant by the numbers in brackets (e.g. epidemiologic profiles paragraph line 9). This needs to be clarified.

6) Some definitions used need to be reported: How were infective foci defined (esp. respiratory tract infection)? As an example, respiratory tract infection may be overestimated when S. aureus colonizing the airways is counted as infection.

7) How was “metastatic infection” defined?

8) Table 2: “treatment failure” is not defined. The data presented in the table is not discussed in the text. It could be left out.

Level of interest: An article of importance 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