Reviewer’s report

Title: Serotype-specific mortality from invasive Streptococcus pneumoniae disease revisited

Version: 1    Date: 4 April 2004

Reviewer: Birgitta Henriques-Normark

Reviewer’s report:

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

This manuscript describes a retrospective study of 464 adult cases with invasive pneumococcal disease in Copenhagen. The patients were diagnosed between 1990 and 2001. Risk for death was calculated for invasive disease caused by serotype 1 and 3 as well as independent predictors of mortality. Serotype 3 was found to be associated with an increased relative risk for death whereas serotype 1 was associated with a decreased risk of death. Independent predictors for death were also older age, relative leucopenia and relative hypothermia.

General comments:
This retrospective study support earlier findings where other authors have shown an association between certain serotypes such as serotype 3 and death, as well as that patients with invasive pneumococcal disease caused by serotype 1 seem to be less prone to die. It strengthen these conclusions, but it is a pity that the isolates were not characterized by using molecular methods such as PFGE or MLST to look at genetic relationship between strains. Also, molecular type may be important not only serotype. Nevertheless, I find this manuscript of potential interest for the readers of BMC Infectious Diseases, when the comments below have been taken into consideration.

Specific comments:
Page 2, line 1 and page 3 line 1: Instead of pneumococcal write pneumococci
In the introduction two other references concerning serotype and clonal properties and correlation to invasiveness would be appropriate to be included: Brueggemann et al JID 2003 and Sandgren et al JID 2004.
Page 6, line 3: The 123 deaths, did they all die because of pneumococcal infection? What is the time frame (range) for death? The mortality rate was rather high in this study, 26,5%, as compared with other studies from Scandinavia. Are there any explanations why? How many died of the patients with the 410 isolates that were typed?
Page 8 second paragraph: Were any of the isolates with a reduced susceptibility to penicillin of type 3?

Discussion page 9, line 3: It says “inability to mount a rise in temperature or peripheral leukocytes independently predicted mortality” When in time (range) was this measured? During the stay in hospital, before/after the start of antibiotics or do you also have information before the patients came to the hospital?

Page 10 just before “Observational and case-control studies…”, I would recommend to include the paragraph on page 11 regarding factor associated with death starting with “As in numerous studies… influence outcome in this study”.

In the part discussing vaccines it would be good also to include the potential coverage rate for the
7-valent conjugate vaccine in this study.

Table 1. It is a bit unclear what ever and never means concerning smoking status, please clarify.
Table 3. In the head line, “table” is misspelled.
Figure 3 may be deleted, since it does not add anything essential.

What next?: Accept after minor essential revisions

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

Quality of written English: Acceptable

Statistical review: No

Declaration of competing interests:

None