Reviewer’s report

Title: Risk factors for nasopharyngeal carriage of drug-resistant Streptococcus pneumoniae: data from a nation-wide surveillance study in Greece.

Version: 1 Date: 19 September 2008

Reviewer: Anne Malfroot

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Risk factors for nasopharyngeal carriage of drug-resistant Streptococcus pneumoniae: data from a nation-wide surveillance study in Greece.


Streptococcus pneumoniae (Sp) remains worldwide a major cause of childhood morbidity and mortality.

The main reservoir of pneumococci is the nasopharynx in preschool children. Nasopharyngeal carriage is a major factor in the transmission of pneumococcal disease by horizontal spread especially in children attending Day Care Centers. Only a small percentage of colonized children will develop an invasive infection. Nonetheless, pneumococcal nasopharyngeal isolates reflect the strains currently circulating in the Community and may predict the capsular types of pneumococci causing invasive disease.

Pneumococcal resistance to antibiotics is increasing globally. Most studies looking for risk factors for antibiotic resistance in pneumococci have identified antimicrobial use as a major determinant. Other risk factors for carriage of resistant pneumococci are young age, attendance at day care, nosocomial acquisition and prior hospitalization. However, there is until now no single explanation for the increasing resistance, and studies are difficult to compare since methods, study populations etc often differ.

The authors conducted a nation-wide study in Greece on nasopharyngeal carriage in healthy children and found significant resistance differences among geographic regions in Greece. This is very interesting; however, the authors could not explain these differences using the collected data in the study.

DETAILED REMARKS / SUGGESTIONS FOR IMPROVEMENT:

1. Abstract: conclusion is very general; please be more specific.

2. Background: is correct; however, some regional Greek studies were already published (work of Syrogiannopoulos in central-southern Greece), why did the authors not discuss these findings? Were methods comparable?
3. Methods:
Major criticism: although this chapter is long, methods are not described in detail: how were questionnaires distributed? Who gave explanation to the parents (1 person? Several persons who had the same instructions? How did parents know that antibiotics over the counter were antibiotics --some parents do not know the difference between antipyretics and antibiotics --was there a listing? how nasopharyngeal samples were taken - the authors refer to ref 6?

4. Results:
Major criticism: the authors refer to Table 1, however, there is no comment on Table 1, neither in results, neither in discussion, and however, this Table is very interesting.
There is no comment on any Table. Table 4, which gives an explanation to the regional differences found in Table 1, should be linked to Table 1.
Minor points: Age -> median is better than mean,

4. Discussion:
Major point: again, the authors should discuss their interesting results, linking Table 1 to Table 4, and discussing the significant differences among different geographic regions.
Minor point: grammar: use same conjugation-style for verbs in text.
Final conclusion is very general and should be more based on the own study-results.

5. References: no remarks
6. Tables: please give some comments or a legend per Table

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

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**
I declare that I have no competing interests