Reviewer’s report

Title: Epidemiology of serotype 19A isolates from invasive pneumococcal disease in German children

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Reviewer: Lena Sechanova

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Comments to the Author

The manuscript (MS) by van der Linden et al. addresses prevalence and clonal composition of serotype 19A among invasive S. pneumoniae isolates from children in Germany prior and after to the onset of PCV vaccination in this country. Additionally, PCV7 uptake and antibiotic usage in Gemany as possible factors driving the changes in epidemiology of serotype 19A strains were evaluated. In most countries after PCV7 introduction 19A serotype is of particular concern among non-vaccine serotypes which predominate in post-vaccine period. Methods used in the MS are comprehensive and up-to-date including antimicrobial susceptibility testing by microbroth dilution, serotyping and MLST genotyping of large number (158) of serotype 19A S. pneumoniae isolates.

The two main findings of the MS are:
1) a serotype 19A prevalence similar to previously reported rates from other countries after PCV vaccination, and
2) interesting new data on clonal distribution of serotype 19A among invasive S. pneumoniae isolates before and after PCV vaccine introduction in Germany and an association with antibiotic uses and vaccine uptake in the community.

Specific comments:

1) Page 8: Results, second paragraph. “Fourty-four 19A isolates (28%) …” It is generally accepted that the percentage have to appears as 0.0. This should be stated everywhere in the rest of the text - Results and Tables.

2) P 8, Results, third paragraph, “…54 (9 resistant, 43 intermediate, 34.1%) …” but the total sum in parenthesis is 52 (please clarify).

3) P 9, Results, seventh paragraph. “The increased proportion MDR isolates and was mainly…” ‘and’ must be omitted (technical error)

4) P 10, Results, eighth paragraph. “(penicillins, macrolides (including clindamycin excluding azithromycin)...” Data on antibiotic use of azithromycin was given already in this paragraph. The text is suggested to be penicillins, clindamycin, tetracyclines etc…

5) P 12, Discussion, second paragraph. “The increasing use of cephalosporins
and perhaps of azithromycin...” The use of azithromycin in Germany seems to be much more in the post-PCV vaccination period (5% vs. 63%, given in Results, eighth paragraph). Thus, the use of macrolides also favored the selection of multiresistant 19A clones (in my opinion that is one of the possible reasons for an increased rate of MDR 19A isolates after vaccine introduction in Germany).

6) P 12, Discussion, third paragraph. “Six belonged to CC320 (ST320 (4) and ST2432).” The number of ST320 is 5 (technical error - please clarify).

7) P 15, References. In reference numbers: 9, 14, and 16 the year of publication is omitted. Also reference No.25 is incomplete.

8) P 17, Table 1. The title is not clear enough and is suggested to be “Incidence and antibiotic resistance of serotype 19A S. pneumoniae invasive isolates among German children from 1997 to 2011.

9) P 17, Table 1. Addionally, in Table 1 a period 2010/2011 is included, but in the sections MM (first paragraph) and in Results (first paragraph) you refer the study period from 1997 – 2009? Please clarify.

10) P 18, Table 2. It seems that the numbers of deferent STs in CC 199 (30) and CC230 (18) in the post-vaccination period are not correct. Please, check the numbers of STs in the parentheses.

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

Quality of written English: Acceptable

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

Declaration of competing interests:

I do not have any financial competing interests in relation to this paper and there are no other potential conflicts of interest.

'I declare that I have no competing interests'