Reviewer's report

Title: Nasopharyngeal carriage, serotype distribution and antimicrobial resistance of Streptococcus pneumoniae among children from Brazil before the introduction of the 10-valent conjugate vaccine

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Reviewer: Maria Cristina Brandileone

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General comments:

The manuscript 'Nasopharyngeal carriage, serotype distribution and antimicrobial resistance of Streptococcus pneumoniae among children from Brazil before the introduction of the 10-valent conjugate vaccine' submitted by Felipe Pg Neves et al. reports the prevalence of S. pneumoniae in nasopharynx of Brazilian children, the serotype distribution and characteristic of antimicrobial resistance of isolates before the 10-valent pneumococcal conjugate vaccine. Some researchers belonging to the group of authors (citing Lucia Martins Teixeira) have great experience on Streptococcus investigation field.

About the issue, few studies on colonization by pneumococcus in Brazilian population as children were published. Considering that Brazil was the first country in the world to introduce PCV10 in their national immunization program, it is important to get information of pneumococcal colonization in a period before PCV10 introduction and report it, to assess the direct impact of this vaccine on pneumococcal carriers. So the theme of the study is important.

The study is well written using simple talking, including well-defined objective, clear and direct; the methodology and laboratorial techniques (classic and molecular, CLSI criteria for define antimicrobial resistance etc.) are appropriate and well described, including those currently and internationally standardized for studies on pneumococcal colonization (STGG transport medium). The data analysis of risk factors is also appropriated.

Tables and figure are very clear. The results of the study comprising the pneumococcal carrier rates (overall rate 49.2%), risk factors associated with colonization (care attendance and cohabiting with siblings under 6 y old, p=0.001), the distribution of serotypes and antimicrobial susceptibility characteristics sounds well and are compatible with the data found in other international studies. In the discussion, the data found on this study are compared with the results found in international publications of important contributions in state of the art on the epidemiology of pneumococcus. The discussion is rich, well-developed and evolved. The conclusions are completely supported on the findings of the study, and answer the question proposed by the study.

Major Compulsory Revisions
- It is unclear whether the subjects of study were or were not vaccinated with PCV10. Since PCV10 was introduced in (Brazil) or Rio de Janeiro State in May 2010 (?), and sampling was carried out from March to June 2010, this point needs to be clearer. Because the PCV10 was gradually introduced in immunization routine for children in Brazil in March 2010, and since this occurred in different months for each Brazilian State along the 2010, it is necessary to clarify the information. When was the PCV10 introduced in Niteroi, the city of sampling?

Having taken the PCV10 vaccine was considered an exclusion criterion for selection of subject? Risk factors displayed on Table 1 considered “Received at least 1 dose of PCV7” for analysis. And about PCV10? The study was carried out in Niteroi city.

Discretionary Revisions

- If it is possible, the authors could give some information about the population attended in the hospital and in the day care were sampling were collected. Public or private centers? The two institutions participating in the study were located in the vicinity or in the central part of the city? Because high level of pneumococcal colonization rates is associated with poor leaving conditions and crowding, it is important to characterize the subject included in the study.

-I suggest to include the site below in the reference number 15.


**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**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