Reviewer’s report

Title: The anticaries effects of pit and fissure sealant in the first permanent molars of school-age children from Guangzhou: a population-based cohort study

Version: 0 Date: 05 Nov 2018

Reviewer: Vinay Pitchika

Reviewer's report:

The manuscript entitled "The anticaries effects of pit and fissure sealant in the first permanent molars of school-age children from Guangzhou: a population-based cohort study" discusses a very important study with good sample size. The study results are promising, and it would make a good publication, but I have some questions with respect to this manuscript.

Since the computer generated line numbers are not accurate, I am referring to the line numbers added by the authors.

Specific comments:
1. The sentences in the manuscript, especially in methods and discussion section are somehow haphazardly arranged in my opinion. It might be good if the authors follow relevant author guidelines (STROBE in my opinion) to improve this manuscript further. Furthermore, there are some minor inconsistencies with English language. It might be better if the authors could get the manuscript edited by a native English speaker.
2. Page 4, line 5-6: It might be interesting to know the age range of the study population here.
3. Page 6, line 22-25: Roughly 61.8% of the population (with indication) did not receive pit & fissure sealants. What are the reasons for this? Please mention them. How did you deal with the ethical aspect of such a huge proportion of population not receiving the preventive measure? Were these participants followed-up more frequently, as they have higher risk?
4. Page 5, 8-13: After deciding to sample 480 students from each district?, it is not clear how many schools in 12 districts were sampled to arrive at a final sample size of 4822 (Pit & fissure group) and 4396 (control group) children.
5. With respect to the above point: 6 schools per district *80 students per school=480 students per district. 480*12 districts should be 5760 (per group). This is not in line with the numbers authors have mentioned.
6. It is also not clear how the controls were selected if there were more than 80 students with no pit & fissure sealants.
7. I am not pretty sure how or why Cox proportional hazard regression model was used for incidence of dental caries. To my knowledge, Cox model is used for survival analysis, and the outcome chosen by the authors does not fall in this criteria.
8. Authors have mentioned that they had performed a mixed linear regression in this study. But, it is not mentioned about the number of levels considered. Mainly because, the data comes from many schools from presumably 12 districts. With mixed linear regression, it is possible to define levels at the
level of participant (multiple teeth in a child), schools or districts to reduce the bias due to heterogeneous nature of participants throughout the selected region.

9. Please make sure you mention about the confounders you included in your statistical analyses. If no confounders were adjusted for, please indicate the reasons for this approach in detail in discussion.

10. Page 7, line 26: Is it 1201 or 1021. With the information from Table 2, 522 + 499 or 787 + 234 results in 1021.

11. In the entire results section, I could not find the results from the mixed linear regression analysis. HRs from Cox model were well presented (but I do not understand the relevance of Cox model for this study. See comment 7). Results from mixed linear regression need to be present as a separate table and discussed in detail.

12. Based on the estimates obtained from the mixed linear regression, discussion section has to be rewritten.

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

Yes

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

Yes

**Are the conclusions drawn adequately supported by the data shown?**
If not, please explain in your comments to the authors.

Yes

**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I recommend additional statistical review

**Quality of written English**
Please indicate the quality of language in the manuscript:

Not suitable for publication unless extensively edited

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