Reviewer’s report

Title: Matrix metalloproteinases gene variants and dental caries in Czech children

Version: 0 Date: 05 Feb 2020

Reviewer: Edward Lo

Reviewer's report:

This manuscript reports on a case-control study to assess the relationship between MMP gene variants and caries status of children in Czech. The study seems to have been properly conducted and the conclusion is valid. However, there are areas for improvement in the reporting of this study.

I have the following comment/suggestions for the authors:

1) Abstract - the study aim/objective should be explicitly stated. The contents of the two sentences in the conclusion overlap and they should be combined to form a concise conclusion statement.

2) Introduction - the study aim/objective should be explicitly stated in the last paragraph.

3) M&M - why did this study took 13 years (2005 to 2018) to complete? This should be explained in the discussion section. Was there any time difference in recruiting the case and the control group of children?

4) M&M - did this study obtain a specific ethical approval from an IRB? If not, why?

5) M&M - a brief description of the inclusion and exclusion criteria for the Group 2 children (those with permanent dentition) should be given. Referring the readers to another paper is not sufficient.

6) M&M - the mentioning of gingival index, plaque index and calculus indices is not needed as these parameters are not reported in this manuscript.

7) Results - The age and gender distribution of the children in the case and control subgroups should be reported separately and statistical tests should be performed to show that the two groups did not differ significantly.

8) Results - the statistical tests used to generate the p-values should be mentioned.

9) Result/Discussion - information on the 1006 EUR children included in Table 2 should be provided.
10) Conclusion - the present paragraph under the heading of conclusion should be used as the last paragraph of the Discussion section. A concise conclusion statement with reference to the study objective should be added.

11) Please use the STROBE statement (for case-cohort studies) to check for completeness of information to be included in reporting this observational study.

12) A thorough proof reading will enhance the English language use in this manuscript.

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 am able to assess the statistics

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

Acceptable
**Declaration of competing interests**

Please complete a declaration of competing interests, considering the following questions:

1. Have you in the past five years received reimbursements, fees, funding, or salary from an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?
2. Do you hold any stocks or shares in an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?
3. Do you hold or are you currently applying for any patents relating to the content of the manuscript?
4. Have you received reimbursements, fees, funding, or salary from an organization that holds or has applied for patents relating to the content of the manuscript?
5. Do you have any other financial competing interests?
6. Do you have any non-financial competing interests in relation to this paper?

If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.

I declare that I have no competing interests.

I agree to the open peer review policy of the journal. I understand that my name will be included on my report to the authors and, if the manuscript is accepted for publication, my named report including any attachments I upload will be posted on the website along with the authors' responses. I agree for my report to be made available under an Open Access Creative Commons CC-BY license ([http://creativecommons.org/licenses/by/4.0/](http://creativecommons.org/licenses/by/4.0/)). I understand that any comments which I do not wish to be included in my named report can be included as confidential comments to the editors, which will not be published.

I agree to the open peer review policy of the journal