Reviewer's report

Title: Population-based incidence trends of oropharyngeal and oral cavity cancers by sex among the poorest and underprivileged populations

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Reviewer: Antonio Boing

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This paper analyze the incidence trends of oropharyngeal cancer and oral cavity cancer in British Columbia, Canada. The analysis is based on a large population-based cancer registry.

Introduction/Background
- In the first paragraph it is not clear why the authors emphasized the ‘health services dimension’ of the inequalities in health. The socioeconomic differences in the exposure to risk factors should be highlighted as well.
- In the second paragraph the authors asserted that “Studies on SES disparities in oral cancer research are emerging from the European Union[12], Scotland[13], California (US)[11], and Canada[14, 15]”. Actually, this relationship has been analyzed for decades. Furthermore, there are studies on the subject in many other countries.
- I suggest the authors to emphasize the socioeconomic disparities in oral cancer research. What do the articles have shown? What is not known yet?

Methods
- More details on the BC cancer registry should be given (pros and cons).
- Some background on the region of BC would be good – e.g. population, size, socioeconomic status.
- AAIR is age-adjusted incidence rate, isn’t it? The text must be corrected.
- Why in order to calculate the temporal trend the AAIRs were grouped into 5-year intervals? Why didn’t the authors analyze year by year? Actually, the authors mentioned “annual percent change”.
- How many individuals did not have a permanent residence address in the dataset? And what about other informations?
- Primary tumours of the external lip, salivary glands and nasopharynx have different etiology when compared to other OCC and OPC cancers. What is the implication of analysing all these tumours together?
- It should be clear that the 2006 Census Dissemination Area data was used to reflect the neighbourhood SES over the total study period.

Results
- The results described in the paragraph 2 could be included in the Table 1.

Discussion
- The link between increase in incidence of OPC and increase prevalence of HPV is not sufficiently explored and justified (paragraph 2).
- The mediators of the association between SES and H&N cancer should be highlighted in the discussion.
- The authors should include the potential role of the social services in the trends observed.
- The phrase “new developing technologies such as optical screening devices for detection of OCC need to include the poor and underprivileged communities to obtain maximum benefit” is not clear. Why not emphasize the importance of policies that aim to reduce smoking, drinking, access to health professionals, etc.
- My suggestion is to improve the literature review. There are many important articles on the subject that were not included in the “Background” and “Discussion”.
- What public policies could reduce inequalities in the incidence of oral cancer?

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

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.