Reviewer’s report

Title: Chronic Periodontitis and Community-acquired Pneumonia: A Population-based Cohort Study

Version: 1 Date: 26 Aug 2019

Reviewer: Reviewer 2

Reviewer's report:

"PEER REVIEWER ASSESSMENTS:

OBJECTIVE - Full research articles: is there a clear objective that addresses one or several testable research questions? (Brief or other article types: is there a clear objective?)
Yes - there is a clear objective

DESIGN - Is the current approach (including controls and analysis protocols) appropriate for the objective?
Yes - the approach is appropriate

EXECUTION - Are the experiments and analyses performed with sufficient technical rigor to allow confidence in the results?
No - there are minor issues

STATISTICS - Is the use of statistics in the manuscript appropriate?
No - there are issues with the statistics in the study

INTERPRETATION - Is the current interpretation/discussion of the results reasonable and not overstated?
Yes - the author's interpretation is reasonable

OVERALL MANUSCRIPT POTENTIAL - Has the author addressed your concerns sufficiently for you to now recommend the work as a technically sound contribution? If not, can further revisions be made to make the work technically sound?
Probably - with minor revisions

PEER REVIEWER COMMENTS:

GENERAL COMMENTS: This study used a large database - NHIS-HEALS to evaluate the association between chronic periodontitis and pneumonia. This is a clinically interesting question which has not been well researched previously due to deficiencies in data sources.

Overall, this study is able to provide some observational evidence that there is no association.
My impression of the study is that it was well conducted by thoughtful researchers. They responded adequately to past comments.

I have minor issues with the analysis as listed below.

REQUESTED REVISIONS:
The sentence "Cox proportional hazards regression was performed after …" could probably just be simplified to: "The association between CP and CAP was assessed with an adjusted Cox proportional hazards regression model."

In the abstract results, specific stratification (e.g., "In the analysis stratified by age, there were no…")

Background line 74 - you mention pneumonia 10th leading cause of death in 2004 but 4th in 2015? why do you think it increased so much? (you could tie this into periodontitis - as in could increases in periodontitis be responsible for this hypothetically?)

Can you explain why you excluded people with renal failure and those in nursing homes?

Why did you exclude people with CP in 2002?

Is there a reason why you don't include people with no chronic periodontitis in table 2?

Is there a reason why in your analyses (tables 3-4), you don't have the outcome of pneumonia regressed onto a categorical predictor with several values for CP (none, mild, moderate, severe), with the reference being none? Table 4 in particular is a bit confusing because I wasn't sure whether the non-severe CP was just people with mild and moderate CP or if it included people without CP, too.

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

No

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

No

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

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