Author's response to reviews

Title: Periodontal disease and atherosclerosis from the viewpoint of the relationship between Community Periodontal Index of Treatment Needs and Brachial-Ankle Pulse Wave Velocity (baPWV).

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Author's response to reviews:

Dear Editors,

Thank you for reading through our manuscript and considering it for publication in the Journal. We are pleased that the reviewer has expressed interest in our manuscript. We have answered each of his or her questions and have revised the manuscript accordingly. Please find an explanation of our revisions summarized within the following pages.

Best regards,

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Minor Essential Revisions

1) Delete first sentence in abstract
We deleted the first sentence in the abstract.

2) Provide case-control ratio and descriptive results on period condition in both groups
The case-control ratio was 0.99 (case; N=145, control; N=146). Significant differences between the case and control groups are shown in age, blood pressure, pack-years, periodontal measurements, and so on (Table 1). Periodontal conditions of the case group were poorer than that of the control group. For example, while the prevalence of severe periodontal disease was approximately one-ninth in the case group, it was approximately one-fourth in the control group (Table 1).

Please refer to lines 5-9 on page 8.

3) Delete correlation coefficient and focus on odds ratios
We deleted the description of correlation coefficients.

Background

-too long. Needs shortening
We have shortened this section by deleting some of the examples used to exemplify the relationship between periodontal disease and blood vessel diseases.

-focus more on baPWV measure- what has been published on this - what is it?
We have added the following explanation of PWV to the text.
"We defined atherosclerosis using Pulse wave velocity (PWV). Pulse wave velocity is an index of arterial stiffness [13,14], and has been regarded as a non-invasive marker of vascular damages [15-17]. Previous
studies have shown that PWV is an indicator of severity for cardiovascular disease [18] and a predictor of future events [19-21]. Pulse wave velocity can also be used as a screening tool for cardiovascular risk in a general population [16,22]. A simple device for measuring brachial-ankle PWV (baPWV) has recently been developed and made available [23,24]."

Please refer to lines 3-8 on page 4.

- periodontal disease is not always treatable or preventable - delete.
This has been deleted.

M&M
- well-trained nurses? Explain
Prior to measurement, nurses were trained on how to measure baPWV. We also made arrangements for standardization. Please refer to line 2-3 on page 6.

- replace "well-used" with "commonly-used"?
We have replaced "well-used" with "commonly-used".

- No correlation coefficient, stick with odds ratios
We deleted the description on correlation coefficient.

Results
- table 1 - make 1 column for cases; 1 column for controls
- table 2 - include in table 1
- table 3 - delete
- table 4 - very nice!
We deleted Tables 2 and 3, and have revised Table 1. The revised Table 1 now includes the information of our original Table 2. Please refer to pages 14-16.

- limit discussion in result to 3 tables
We deleted the description on Quorum Sensing, and have re-focused our discussion on the results shown in the three tables.

Discussion
- discuss weaknesses of study (cross-sectional nature; imperfect measurement of confounders; lack of temporal information)
We have added the following explanations to our limitations:
"There were several limitations to this study. First, the number of subjects was relatively small and our results need to be reassessed using a larger sample. Second, this study only reports possible relationships and not causality because of its cross-sectional design. We are now following up with this population as a cohort. Lastly, although we adjusted for major confounders, this study carries the risk of residual confounding as a result of imperfect measurement of confounders."
Please refer to the section between line 23 on page 10 and line 5 on page 11.