Reviewer's report

Title: Assessment of Tissue Oxygenation of Periodontal Inflammation in Patients with Coronary Artery Diseases using Optical Spectroscopy

Version: 2 Date: 22 February 2014

Reviewer: Viveca W Wallin Bengtsson

Reviewer's report:

Reviewer's report: Assessment of Tissue Oxygenation of Periodontal Inflammation in Patients with Coronary Artery Diseases using Optical Spectroscopy

Authors: Chunyang Zhang, Xiaoming Xiang, Minqi Xu, Chun Fan, Michael G. Sowa and Kan-Zhi Liu.

Version: 1 Date: 22 February 2014

Which journal? Appropriate for BMC Oral Health
Quality of written English: Acceptable
Statistical review: No

Reviewer's report: This manuscript is an extension of other work by the authors using the same technique, optical spectroscopy, in assessing the tissue oxygenation of periodontal inflammation in patients. The purpose of this study was to verify whether this optical instrument can also be used in periodontitis patients with coronary artery diseases (CAD). The manuscript is novel and very interesting as it describes a method to measure inflammation in periodontal tissue and it could be used as a complement to accepted clinical measurements, especially to see if the periodontal disease is active or inactive. The manuscript is well written and with good adherence through the whole text with aims that are nicely replied to. Patients in the control group with periodontitis but without CAD are younger than the patients in the test group. This could have affected the results but it doesn’t seem so since there were no significant differences between HbO2 in the two groups. More sites with periodontitis should have been desirable in both groups. It will be exciting to read your future cohort studies in this field.

Compulsory revisions:
1) In methods there is no explanation on how patient selection was done. Describe clearly how this process was done. Random selection? Consecutively selection?
2) The last sentence on side nb 11: In the last bracket it should be (Tab 2, Fig 2).
3) In the conclusions you change expression from CAD (coronary artery disease) to cardiovascular diseases. Why? Is there a special reason for that? If not you
should still use the same expression CAD in the conclusions.

4) In the figure legends (the text on page 19) after the main sentence Figure 3 it should be “Comparison of tissue oxygen saturations in percent from CAD patients and healthy controls”.

5) Fig 2a should say: % Tissue Hb oxygen saturation …..As this is actually what it shows according to the text in the results and the figure legends (the text on page 19).

6) In Figure 3. The abbreviation ISH tissue – what and where is the explanation/translation for this? I suggest the blue colour to be named “CAD patients” and the yellow colour to be named “healthy controls”.

Discretionary revisions:

1) The figures will be easier to read if you make out which is Figure A and which is Figure B (Figure 1 A, Figure 1 B, Figure 2 A, Figure 2 B, Figure 3 A, Figure 3 B).

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

'I declare that I have no competing interests' below