Reviewer’s report

Title: Comparing the effect of 0.06 %, 0.12 % and 0.2 % Chlorhexidine on plaque, bleeding and side effects in an experimental gingivitis model. A parallel group, double masked randomized clinical trial.

Version: 0 Date: 07 Mar 2017

Reviewer: Hermann Agis

Reviewer's report:

In their study the authors' objective was to reveal the inhibiting effect of clinically applied products containing 0.2% and 0.12% chlorhexidine and 0.06% chlorhexidine on plaque and gingivitis. The authors performed a clinical study using an experimental gingivitis. Two different treatment protocols were applied whereas on quadrant in each patient received mouthwash alone, the other quadrant was rinsed with mouthwash and oral hygiene treatment was performed mechanically. The patients were observed over 21 days. Based on their results the authors conclude that the mouthwash with 0.2% chlorhexidine prevented dental plaque with better efficiency than the mouthwash with 0.12% and or 0.06% chlorhexidine. While the study was planned and carried carefully there are issues that need to be resolved before the manuscript can be recommended for publication.

Major issues:

1) Why did the authors compare commercially available mouthwash at 0.2%, 0.12%, and 0.06% chlorhexidine? What was the rational for including those concentrations? This should be clearly presented.

2) The authors presented that there are a variety of studies on the effect of different chlorhexidine concentrations (Background, page 3, line 70-77). It is not entirely clear what the novelty of the study is. This should be clearly presented.

3) The authors compared the following mouthwashes: (i) 0.2% chlorhexidine, (ii) 0.12% chlorhexidine with 910 ppm NaF², and (iii) 0.06% chlorhexidine with 250 ppm NaF3. Did the products also differed in other ingredients? Based on the described mouthwashes the
differences between the products is not limited to the chlorhexidine concentration. Could this have an impact on the effect of the different mouthwashes in this study?

4) Several outcome parameters were not presented in the study and were indicated as (data not shown). The authors should at least consider to present these data as supplementary figures or tables. These data should not be excluded. All data should be presented and accessible.

5) As BMC encourages to present the raw data it is appreciated that the authors provide them in an Excel format. However, the data should be presented in a way that it is clear for the reader what they represent. Currently it is not entirely clear.

6) The authors should present future directions for research and the clinical impact of the findings should be discussed and mentioned in the conclusion.

7) The conclusion should be based on the study and not compare the results to other studies.

Minor issues:

1) Abstract, page 2, line 37: Proved is not the ideal word. Please replace it.

2) The authors should use the same term and not switch between "commercially available product" and "commercially available mouthwash".

3) Table 1: The authors should not present findings from other studies in their result section. This should be part of the discussion and not of the table.

4) The authors should revise the manuscript with the help of a scientifically trained native speaker.

**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 recommend additional statistical review

**Quality of written English**

Please indicate the quality of language in the manuscript:

Needs some language corrections before being published

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