Reviewer's report

Title: In vitro-activity of oily calcium hydroxide suspension on microorganisms as well as on human alveolar osteoblasts and periodontal ligament fibroblasts

Version: 1 Date: 21 November 2013

Reviewer: Luciana Shaddox

Reviewer's report:

Briefly, this study evaluates the in vitro antimicrobial properties as well as the effect on cell proliferation and mineralization of an oily calcium hydroxide suspension. The topic is interesting and clinically relevant. However, some issues with the study need to be addressed before it can be considered for publication. The paper is overall well written and the purpose of the study well delineated. However, specifically the methods need major clarifications, as outlined in details below. Discussion also needs to clarify some of the results found in the study.

Please see detailed comments below and let me know if any additional information is needed for this review.

1- Abstract

- Please provide more details on the periodontopathgens used in the study. What kind of antimicrobial activity and against which species? Please define
- Results: please provide more details here (whats moderate concentration? What is high?) as well as statistics on the results.

2- Introduction:

- Need grammar review throughout the paper. Mistakes found throughout
- Page 5: last paragraph. 3rd line: The study…which study? The present study?
Also, watch certain abbreviations: incl.??

3- Materials and Methods:

- ‘Determination of antimicrobial efficacy of oily calcium hydroxide suspension’: second line – …bacterial strains…please add: “described below”.
- Checking for purity: how?
- “a defined inoculum”: please provide details here – how much? What concentrations?
- “defined concentrations” – please define how much?
- Describe the way tissue was harvested for culture
- please describe how many replicas were used for each experiment. Authors describe 6 per group except for the antimicrobial assays, how many there?
- 1U, 2U... not clear what those represented? Authors describe ‘1 U represented 2.5 mg of total material’ what about the others?
- In addition, calcium hydroxide in aqueous solution was used in this experiment, why wasn’t this used also in the antimicrobial experiment?
- Statistics also not clear... t test was used to test which samples? Anova was used to test what? Please be more specific.

4 Results
- Second paragraph of the results is describing methods. Please move methods into methods section.
- Table 1” why was the components of OCHS tested but not the actual substance here?
- Fig 2: the results indicate that this mineralization was quantified. Methods does how these 10 sections were chosen and analyzed?
- Page 11 second paragraph described methods again. Move these methods into appropriate section.

5 Discussion
- Authors mention: ‘attachment of bacteria and the bacteria themselves may serve as a receptor for HAO cells’ please provide reference for that statement. The authors go on to explain the evidence of bacteria, such as Aa, inducing osteoblast cell death and others such as the red complex ones, also arresting ostoblastic proliferation but they fail to explain the reasons why there was more attachment of osteoblasts with Aa and no inhibition of attachment with red complex bacteria. These results are confusing and need better explanation.

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

Quality of written English: Needs some language corrections before being published

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

Declaration of competing interests:
'I declare that I have no competing interests'