Author's response to reviews

Title: A Comparative Evaluation of Dimensional Stability of Three Types of Interocclusal Recording Materials-An In-Vitro multi-centre Study.

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Version: 5 Date: 30 August 2012

Author’s response to reviews: see over
Reviewer 1:

Introduction:

1. Please also indicate what test material was served as control and add hypothesis of this study.

-Hypothesis added, the ZOE material is used since beginning of dentistry as recording material, hence here it is used as control and comparative material with newly developed bite registration material.

Discussion section:

1. Please explain more details about geography and level of experience in the fourth paragraph. What would be the role of these factors in this standardized in-vitro test?

-The geography plays important role as it may delays in transport and even maintenance of uniform temperature for the storage of material including manipulation for clinical usage will very.

2. Please discuss the action of eugenol with dimensional stability of ZOE paste in the fifth paragraph. Does Super Bite contain eugenol?

Super bite used in this study contained ZOE.

Zinc oxide eugenol is traditional bite registration paste is being used for long time and

had gained wide acceptance as impression as well as bite registration material because of its
ease of manipulation and economy. In this study zincoxide eugenol expressed more
dimensional change on passage of time i.e 0.016% and continued to show drastic change over
a period of 72Hrs 1.017%.

The result of this study seem to be in accordance with an experimental study by
Michalakis k x, Pissiotis a, Anastasiadou, on physical properties of inter occlusal recording
media. Zoe undergoes continues contraction after 1Hr and continued to show significant
dimensional change along with weight loss. This could be explained by fact that, the setting
reaction of zinc oxide eugenol is basically acid base reaction resulting in salt formation [2].

\[ 2c_{10}h_{12}o_{2} + zno \rightarrow zn(c_{10}h_{11}o_{2})_{2} + h_{2}o \]
Eugenol + zinc oxide \( \rightarrow \) zinc eugenolate + water

Water formed during chelation reaction evaporates leading to weight loss and
contraction over the period of time. However, the eugenol free zinc oxide paste showed less
dimensional change when compared to that of the one with the eugenol in the study by
Balthazar -Hart Y et al.

3. Sixth paragraph: Please provide a reference for authors’ statement on longer
polymerization period of PVS material regarding the sustained contraction. Does this mean
setting time or others?

- It is not related to setting time.
4. Please add limitations of this study.

1. The possible limitation of this study is that it takes only the linear measurement as parameter for determining the dimensional stability, but in routine clinical situation the dimensional errors occur in all the three dimensions.
2. The temperature variations in its usage, storage and even during transport.

Minor essential revisions:

Introduction:

1. Please focus on the problems and needs for the study on topics of dimensional stability of bite materials. The readers are more interested in what has been known and indicate shortcomings of previous studies.
   - The problems have been listed along with shortcomings of previous studies.

2. It is also desirable to introduce most of the references in this section and extend them in Discussion section.

   References have been introduced in the introduction section. Also extended in discussion section.

Result section:

1. Please add a graph showing time-dependent 2-dimensional stability of the three test materials for quick view of the material characteristics (1st part of result section).
   - Graph added which shows time dependent 2 dimensional stability.
Discussion section:

1. Please focus on the hypothesis (or purpose) of this study by deleting introductory information (first, second and third paragraphs) - these information should appear in Introduction section.

- The correction done in discussion section.

Reviewer2:

1. Authors contradicted the results obtained by stating that “polyether presented the greatest linear changes of all materials tested” in page 11, first paragraph, line 3.

- The typing error has corrected. It’s least in polyether.

2. Standard deviation were written as mean percentage of dimensional change in page 11, 2nd paragraph,

- Standard deviation which was missing in the sentence is written.

2. Authors did not follow the journal guidelines for references

- The references written as per journal style.

3. Figure legends were not mentioned.

- Figure legends have been added.

Minor revisions:

1. Tukey’s honestly significant difference test or Tukey’s honest significant test is wrongly
written as Tukey’s honestly significantly different tests both in title page and in main article.

-The spelling mistake has been corrected as Tukey’s honestly significant difference test.

2. Manufacturer’s names should not be mentioned in key words

-The manufacturer’s names removed from key words as per suggestion.

3. Mann Whitney test is actually Mann Whitney U test and this test was not mentioned in the main article.

-Mentioned in the main article.

3. Reference for the stainless steel mold was not mentioned.
-Reference mentioned for stainless steel mold.

4. Page number 10, last paragraph, specimen having 0.3 mm thickness were considered....

Please check the specimen size.

-Typing error corrected, it is 3mm in thickness.

5. Page 13, line 12, why 29-34 reference numbers where quoted?

-The articles quoted because, they are the studies which gives the reports on quality of material in relation to its stability.

6. Remove the full stop after reference in page 13, line 16

-Full stop removed after the reference.

7. Coltene/Whaledent was mentioned as colitine waldent in page 7,6th line.

-Coltene/Whaledent spelling corrected.

Discretionary revisions:

1. Photograph of the mold used in the study

-Photographs of mold used is added in photograph section.

2. Photographs of the specimens for the three materials used in the study

-The specimen photograph of three materials is also added.