Reviewer’s report

Title: Efficacy of Removing Candida albicans from Orthodontic Acrylic Bases: An in vitro study

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Reviewer: Mrudula Patel

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Efficacy of Removing Candida albicans from Orthodontic Acrylic Bases: An in vitro study

BMC Oral Health

Reviewer's comments

Authors evaluated 4 methods of cleaning/disinfecting removable orthodontic appliances. It is a well written, short study and it contains adequate microbiological technique. However, there are some concerns which are highlighted below.

Candida carriage is high in older people and particularly denture wearers. Candida infection is also high in older people. Orthodontic appliances are generally used by young children who are generally not susceptible to Candida infections unless they are immunocompromised which a small percentage of children with orthodontic appliances is. The biggest problem in these children is the development of dental caries. Therefore Clearance of Streptococcus mutans is important.

1 Background: Justify clearly why only Candida albicans was tested and not S. mutans as well. Describe why C. albicans is important in young children with orthodontic appliances. Literature review given here is mixing denture wearers, denture material and older people and therefore it is incorrect.

2 Throughout the manuscript: Two brackets should not be placed together. At many places, italics for the names of organisms is missing.

3 Methods:

* Saliva coated bars were placed in alcohol for 10 minutes. Did this procedure not washed off/affect saliva?
Why only one strain of C. albicans was used? Use of 3 strains with 3 repeats would have given 9 readings to produce meaningful stats. Strains behave differently and more strains represent general population. The whole microbiological study with 3 repeats is one and half weeks research. Fabrication of 15 plates can be done while C. albicans culture is growing and the repeats can be done on three day and in between reading plates that comes out of incubator.

Section 2.5: How was the 107 cfu/ml determined for the inoculum and standardised every time?

Figure 1 and 2 should be removed. They are clearly described in the methods.

Section 2.8: at the end, remove Table 1, it should appear in the results section. Add a sentence containing percentage reduction calculation.

Results: Table 1 and 2 can be merged into one (given below). Figure 3 should be removed because it is a repetition of the results.

Table 1. Effect of different cleaning methods in the removal of C. albicans from acrylic bars

<table>
<thead>
<tr>
<th>Method</th>
<th>Number of challenged C. albicans (Control)</th>
<th>Number of C. albicans after treatment</th>
<th>Reduction</th>
<th>Comparison with control</th>
<th>Inter-treatment comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brushing</td>
<td>9133 ± 3282 (4300-15100)</td>
<td>918.7 ± 267.7 (620-1420)</td>
<td>89.9</td>
<td>&lt;0.01</td>
<td>To Tablet &gt;0.05</td>
</tr>
<tr>
<td>Tablets</td>
<td>As above</td>
<td>As above</td>
<td>100</td>
<td>&lt;0.01</td>
<td>To CHX &gt;0.05 To Ultrasound &gt;0.05</td>
</tr>
<tr>
<td>Chlorhexidine</td>
<td>As above</td>
<td>As above</td>
<td>95.8</td>
<td>&lt;0.01</td>
<td>To CHX To Ultrasound</td>
</tr>
<tr>
<td>Ultrasound</td>
<td>As above</td>
<td>As above</td>
<td>99.9</td>
<td>&lt;0.01</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Discussion:

First 3 paragraphs is repetition of literature. It can be given in one short paragraph.

Page 10, line 28: Conc. of CHX is incorrect
Conclusions: This study showed that brushing, the denture cleaning tablets, chlorhexidine gluconate and ultrasonic cleaning can remove C. albicans from the surface of orthodontic acrylic. Although no significant difference was found between the test methods, commercially available denture cleaning tablets proved to be the most effective method.

There are too many references for a simple study like this one. At places up to 4 references are given just to justify a simple statement.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

No

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 am able to assess the statistics

Quality of written English
Please indicate the quality of language in the manuscript:

Acceptable

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I have no competing interest.

This is a very short study and additional work is required. 3 repeats cannot provide a meaningful results.

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