Author's response to reviews

Title: Presence of Helicobacter pylori in betel chewers and non betel chewers with and with out oral cancers

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Author's response to reviews: see over
Page 2 (Results)
Ten out of fourteen (71.4%) H. pylori positive oral cancer patients were betel chewers. Four H. pylori positive oral cancer patients were non-betel chewers.

Revision
Among the 53 oral cancer patients examined, ten of forty-four (10/44=22.7%) patients who are betel chewers and four of nine (4/9=44.4%) patients who are non-betel chewers were detected positive for IgG antibody against H. pylori.

Page 2 (Conclusions)
Hence Betel chewing may predispose to oral colonisation with H. pylori as betel-chewing causes changes in the oral cavity, which could act as a reservoir for colonisation in the stomach.

Revision
Hence Betel chewing may predispose to colonisation with H. pylori in the digestive tract through swallowing the quid or during betel chewing.

Page 3 (last sentence)
In this article we show that betel chewing predisposes to oral colonisation by H. pylori but that there does not appear to be an association with oral cancer.

Revision
In this article we show that betel chewing predisposes to colonisation by H. pylori but that there does not appear to be an association with oral cancer.

Page 4 (Results – Line 4)
Of the fourteen H. pylori positive oral cancer patients ten were betel chewers (71.4%). Four H. pylori positive oral cancer patients were non-betel chewers.

Revision
Among the 53 oral cancer patients examined, ten of forty-four (10/44=22.7%) patients who are betel chewers and four of nine (4/9=44.4%) patients who are non-betel chewers were detected positive for IgG antibody against H. pylori.

Page 4 (Results – 2nd paragraph)
Of fourteen (26.4%) oral cancer patients (betel chewers and non betel chewers) who tested positive for H.pylori by serology, two were also culture positive (only thirty samples were cultured).

Revision
Of fourteen (26.4%) oral cancer patients (betel chewers and non betel chewers) who tested positive for H.pylori by serology, two were culture positive (only thirty samples were cultured) and they were also betel chewers.

Page 4 (Results – last paragraph)
There is no significant difference in the presence of H pylori between patients with oral cancer and healthy betel chewing subjects (14/53 and 10/60 respectively; Chi-square test p>0.05) – Table 2. Of the 104 betel chewers (with or without cancer) 20 (19.2%) were H pylori positive as compared with non-betel chewers 4/69 (5.7%).

Revision
Of the 104 betel chewers (with or without cancer) 20 (19.2%) were H pylori positive and half of them were oral cancer patients (10/20) whereas the other half were healthy subjects (10/20). When compared to Betel chewing healthy controls, the presence of serum IgG against H.pylori in Betel chewing oral cancer patients was not statistically significant. (chi square test p>0.05) – Table 2.
Page 5 (line 3)
The association between presence of *H. pylori*, in betel chewers and non betel chewers in relation to other factors are shown in Table 4.

Revision
The association between presence serum IgG against of *H. pylori*, in betel chewers (with or without cancer) in relation to other factors are shown in Table 4.

Page 5 (line 4)
The use of tobacco and areca nut in betel chewers was significant with the presence of *H. pylori* (*p*<0.05). There was no significant difference in the presence of *H. pylori* in betel chewers and their practices such as swallowing the quid, sleeping with quid during the night and washing the mouth after chewing betel. Further there was no significant difference in consumption of alcohol or smoking with the presence of *H. pylori* in all four groups (*p*>0.05).

Revision
The use of tobacco and areca nut in betel chewers was significant with the presence of serum IgG against *H. pylori* (*p*<0.05). There was no significant difference in the presence of serum IgG against *H. pylori* in betel chewers and their practices such as swallowing the quid, sleeping with quid during the night and washing the mouth after chewing betel. Further there was no significant difference in consumption of alcohol or smoking with the presence of serum IgG against *H. pylori* in all four groups (*p*>0.05).

Page 5 (Discussion)
In the present study, the association between oral cancer patients chewing betel and non betel chewers, healthy betel chewers and non betel chewers and the presence of *H. pylori* were evaluated.
The results demonstrate that the proportion of *H. pylori* was higher in healthy betel quid chewers and betel chewing oral cancer patients compared to healthy non-betel chewers and non betel chewing cancer patients, and this was statistically significant.

Revision
In the present study, the association between oral cancer patients chewing betel and non betel chewers, healthy betel chewers and non betel chewers and the presence of serum IgG against *H. pylori* were evaluated.
The results demonstrate that the proportion of serum IgG against *H. pylori* was higher in betel chewers (oral cancer patients and healthy subjects) compared to healthy non-betel chewers, and this was statistically significant.

Page 6 (Line 1)
Further in this study it was noted that 10/14 (71.4%) of *H. pylori* positive oral cancer patients were also betel chewers

Revision
Further in this study it was noted that out of 44 oral cancer betel chewing patients 10 tested positive for serum IgG against *H. pylori*. 
Table 1 - Heading
Presence of *H. pylori* in patients with oral cancer (betel chewers/non betel chewers) compared to healthy control subjects (betel chewers/non betel chewers)

**Revision**
Detection of serum IgG against *H. pylori* in patients with oral cancer (betel chewers/non betel chewers) compared to healthy control subjects (betel chewers/non betel chewers)

<table>
<thead>
<tr>
<th></th>
<th>Oral cancer patients</th>
<th>Healthy Betel Chewers</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>H. pylori</em> positive</td>
<td>14</td>
<td>10</td>
<td>24</td>
</tr>
<tr>
<td><em>H. pylori</em> negative</td>
<td>39</td>
<td>50</td>
<td>89</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>53</td>
<td>60</td>
<td>113</td>
</tr>
</tbody>
</table>

$X^2 = 1.6, (p > 0.05) ;$  Not significant

**Revision**
Detection of serum IgG against *H.pylori* in betel chewing oral cancer patients and Betel chewing healthy control subjects

<table>
<thead>
<tr>
<th></th>
<th>Oral cancer Betel chewers</th>
<th>Healthy Betel Chewers</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>H. pylori</em> positive</td>
<td>10</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td><em>H. pylori</em> negative</td>
<td>34</td>
<td>50</td>
<td>84</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>44</td>
<td>60</td>
<td>173</td>
</tr>
</tbody>
</table>

$X^2 = 0.6 (p > 0.05) ;$  Not significant

**Table 3 -**
*H.pylori* negative non betel chewers – 69
*H.pylori* negative Total - 153

**Revision**
*H.pylori* negative non betel chewers – 65
*H.pylori* negative Total - 149

**Table 4 - Heading**
Other factors in betel chewers and its relation to presence of *H pylori*

**Revision**
Presence of serum IgG against *H pylori* in Betel chewers (oral cancer patients and healthy betel chewers) in relation to other factors
### Additional tables

#### Table 5- Presence of serum IgG against *H.pylori* in oral cancer patients and betel chewers in terms of age

<table>
<thead>
<tr>
<th>Age group (yrs)</th>
<th>Oral cancer betel chewers</th>
<th>Oral cancer non betel chewers</th>
<th>Healthy betel chewers</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>31 – 50</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>H.pylori</em> +ve</td>
<td>1</td>
<td>1</td>
<td>6</td>
<td>8 (7%)</td>
</tr>
<tr>
<td><em>H.pylori</em> –ve</td>
<td>10</td>
<td>1</td>
<td>34</td>
<td>45 (40%)</td>
</tr>
<tr>
<td>51 – 70</td>
<td>10</td>
<td>3</td>
<td>4</td>
<td>17 (15%)</td>
</tr>
<tr>
<td><em>H.pylori</em> +ve</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>H.pylori</em> –ve</td>
<td>23</td>
<td>4</td>
<td>16</td>
<td>43 (38%)</td>
</tr>
<tr>
<td>Total</td>
<td>44</td>
<td>9</td>
<td>60</td>
<td>113</td>
</tr>
</tbody>
</table>

#### Table 6- Presence of serum IgG against *H.pylori* in oral cancer patients and betel chewers in terms of gender

<table>
<thead>
<tr>
<th></th>
<th>Oral cancer betel chewers</th>
<th>Oral cancer non betel chewers</th>
<th>Healthy betel chewers</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Males</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>H.pylori</em> +ve</td>
<td>7</td>
<td>3</td>
<td>7</td>
<td>17 (15%)</td>
</tr>
<tr>
<td><em>H.pylori</em> –ve</td>
<td>31</td>
<td>3</td>
<td>39</td>
<td>73 (65%)</td>
</tr>
<tr>
<td><strong>Females</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>H.pylori</em> +ve</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>7 (6%)</td>
</tr>
<tr>
<td><em>H.pylori</em> -ve</td>
<td>3</td>
<td>2</td>
<td>11</td>
<td>16 (14%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>44</td>
<td>9</td>
<td>60</td>
<td>113</td>
</tr>
</tbody>
</table>