Reviewer's report

Title: Presence of Helicobacter pylori in betel chewers and non betel chewers with and without oral cancers

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Reviewer: Shan-Ling Hung

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In this study, the authors examined the serum IgG against Helicobacter pylori in patients with oral cancer, healthy betel chewers and healthy non-betel chewers using the ELISA analysis. Detection of H. pylori in oral biopsies from thirty oral cancer patients was also performed using the culture techniques. The results indicated that the detection rate of positive IgG against H. pylori was higher in betel chewers than non-betel chewers. However, there is no difference between oral cancer patients and healthy subjects.

Major Compulsory Revisions (The author must respond to these before a decision on publication can be reached. For example, additional necessary experiments or controls, statistical mistakes, errors in interpretation.)

1. In the Background section (page 3, line 2 from the bottom), the authors concluded that: “In this article we show that betel chewing predisposes to oral colonization by H. pylori but that there does not appear to be an association with oral cancer.” This conclusion regarding oral colonization is incorrect. The data in this study did not demonstrate directly the presence of H. pylori in the oral cavity. In fact, only two oral biopsies cultured were positive for H. pylori. The oral cavity is not the only place that has been affected during betel chewing. The ingredients may be easily contacted with the digestive tracts through swallowing the quid or the juice during betel chewing. It is possible that positive serological results for H. pylori are due to infection of H. pylori in the digestive tracts of the study subjects. The data did not show oral colonization by H. pylori. Thus, the conclusion, in the Abstract, Background and Discussion sections, should be corrected.

Since the authors did not detect directly the bacteria in the study subjects, it is better to change “The presence of H. pylori....” to “Detection of serum IgG against H. pylori .....” in the text and Tables.

2. Only two oral biopsies cultured were positive for H. pylori among thirty oral cancer patients analyzed. It will be of interest to know whether these two subjects were betel chewer or non chewers, and whether they were positive for serum IgG against H. pylori.

3. Is there any difference between betel and non-betel chewers or between cancer patients and healthy subjects in terms of age and gender? Average age and age range among the four groups should be indicated.
4. In Table 2, the authors compared the oral cancer patients, including both betel chewers and non-chewers (group 1 and group 2 in Table 1), with the healthy betel chewers (group 3). However, it seems to be more reasonable to compare oral cancer patients (group 1 and group 2) with healthy subjects (group 3 and group 4); or to compare oral cancer patients who are betel chewers (group 1) with healthy subjects who are also betel chewers (group 3).

5. The authors stated that: “The association between presence of H. pylori in betel chewers and non betel chewers in relation to other factors are shown in Table 4” (page 5, line 3). However, Table 4 presented only the data for betel chewers. In Table 4, it is also surprising that the data (50% vs. 4.7%) for sleeping with quid during night were not significantly different. Is there any association for each factor in Table 4 with oral cancer?

Minor Essential Revisions (The author can be trusted to make these. For example, missing labels on figures, the wrong use of a term, spelling mistakes).

1. The authors stated in the Abstract and in the Results sections: “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.” These statements seemed to suggest that the detection rate was higher in oral cancer patients who were betel chewers than non-chewers. In fact, the majority of the oral cancer patients in this study were betel chewers (83%=44/53). Thus, it might be better to change the statements to: “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.”

2. There are several errors in the data presented in the Tables.
   (1) Page 9: in Table 1: please change “10 (16.6%)” to “10 (16.7%)”; change “50 (83.4%)” to “50 (83.3%)”; the right hand portion of the table is truncated; change “Presence of H. pylori” to “Presence of serum IgG against H. pylori”
   (2) Page 9: in Table 3: please change “69” to “65”; change “153” to “149”
   (3) Page 10 in Table 4: please change “[63%]” to “[63.1%]”, change “[16%]” to “[16.7%]”, change “[4.7%]” to “[4.8%]”, change “[73%]” to “[73.8%]”

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: Yes, but I do not feel adequately qualified to assess the statistics.

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