Author's response to reviews

Title: Is histologic esophagitis associated with dental erosion: a cross-sectional observational study?

Authors:

Lynn Friesen (friesenl@umkc.edu)
Brenda Bohaty (bbohaty@cmh.edu)
Robin Onikul (ronikul@cmh.edu)
Mary Walker (walkermp@umkc.edu)
Caren Abraham (cpam88@umkc.edu)
Karen Williams (williamsk@umkc.edu)
Jose Cocjin (jcocjin@cmh.edu)
Eileen Cocjin (cocjine@umkc.edu)
Craig Friesen (cfriesen@cmh.edu)

Version: 1 Date: 06 Mar 2017

Author’s response to reviews:

Dear Maria Lourdes O. Catarroja,

Please find the attached revised manuscript (“Is histologic esophagitis associated with dental erosion: a cross-sectional observational study?”), which we are resubmitting for consideration for publication. We thank the reviewers for their comments which have been addressed as below.

Reviewer One:

1. Discussion needs to be implemented to explain the results on why erosions were found more in primary teeth than in permanent teeth? (Page 7 Line 176-179)

2. Background (Page 2, Line 30 - 33) changed sentence to “Once dentin is exposed to acid, the loss of tooth structure accelerates. This problem may be particularly troublesome in primary teeth whose enamel and dentin are much thinner than permanent teeth”.


3. Methods: Provided more detail about unspecific inclusion criteria “a history of extensive previous restoration”

4. Gastrointestinal Symptoms: Provided a reference for the Likert Scale and explained more how it was used.

5. Dental Examination: Information concerning monitoring of intra-examiner reliability was included.

6. Dental Examination: Defined the use of the O’Brien recording system in our study for measuring erosion on all primary and permanent teeth.

7. Results: How this score was computed under GI Symptoms has been clarified.

8. Discussion: See above.

9. References: corrected format

Reviewer Two:

1. Methods: Defined the convenience sample that was used in the study (type of patients that the Children’s Mercy Kansas Hospital treats). This will allow the reader to compare his/her own patients to the sample described in the study.

2. Methods:

a. Define clearly which will be the predictor and outcome variable (This has been clarified).

b. Define clearly the unit of study and analysis. Seems to be tooth lesion clustered by patient? (This has been clarified).

c. It is not clear if this is a risk oriented study (i.e. the presence of erosion increase the risk or serve as indicator of esophagitis prevalence ratio = xx%). This definition would serve to elaborate appropriate tables. The recommended association measurement for cross-sectional studies is the prevalence ratio instead of odds ratio. See Thompson, et al. Occup Environ Med. 1988 Apr: 55(4): 272-277.

We were interested in examining the association between biopsy confirmed diagnosis of GERD and prevalence of tooth level erosion. Previous studies have examined this relationship but
failed to confirm GERD by biopsy, rather relying on symptoms to determine the diagnostic category. Prevalence rate of tooth-level erosion was clarified and on (Page 6 Line 145-146). The multilevel logistic model was used to estimate the potential effect of presence of GERD (at the patient level) and type of tooth at the tooth level (primary vs. permanent) on presence or absent of any erosion at the tooth level clustered within individual patient. Because patient’s oral environment may vary from individual to individual, this clustered multilevel model produces less biased estimates. The study aim has been clarified to eliminate any confusion as to the study’s purpose and additional clarity about the statistical model has been added in the statistics section.

d.Since this study uses ordinal variable to characterize both erosion and esophagitis, a graph showing the results for the 25 patients would be useful.

Tables 2 and 3 essentially shows the distribution of erosion characteristics as a function of tooth type and biopsy confirmed GER- associated esophagitis versus normal histology. Esophagitis was not characterized ordinally but categorically based on confirmed diagnoses determined from the results of “standard biopsies taken from the lower third of the esophagus during an endoscopy”. Based on the biopsy, subjects were categorized into either the control group (Non-GERD) or the GERD group (i.e. those with histologic esophagitis). Three subjects were diagnosed with eosinophilic esophagitis and were eliminated from the study.

If you have any additional comments or questions, please let me know.

Kind Regards,

Lynn Friesen, DDS, MS