Reviewer's report

Title: Cariogenicity and Erosive Potential of Pediatric Drugs: Study of Physicochemical Parameters

Version: 2 Date: 20 August 2013

Reviewer: Dien Gambon

Reviewer's report:

1. Is the question posed by the authors well defined?
   It is interesting what the pH of different medication is. If they have looked at the Knoop hardness of the enamel the erosive potential was more accurately determined. Every product with sugar can cause caries, it is good to know that many medicine contain sugar.

   It is interesting to know what pH the medicine have, and what buffer capacity, but in the part “background” is mentioned that first that the medication has a high erosive potentiation. Then suddenly were are looking at erosive potentiation and the cariogenic potential.

2. Are the methods appropriate and well described? TTA of buffer capacity is usual measured to pH 5.5 because that is the critical pH for the dissolution of enamel or till pH = 7, the pH of neutral saliva. Using the range 8.2-8.4 sound unlogic. It is difficult to compair these outcomes with other studies. (lussi et al. Lussi A (ed): Dental Erosion. Monogr Oral Sci. Basel, Karger, 2006, vol 20, pp 77–87.) and other products.

3. Are the data sound? Yes

4. Does the manuscript adhere to the relevant standards for reporting and data deposition? See 2

5. Are the discussion and conclusions well balanced and adequately supported by the data?
   What I'm missing is the erosive potential in relation to the habits of intake of the medication. Most children use their medication and rinse with water or drink a glass of water to remove the taste. That means that the erosive potentiation mentioned is not that high. The users manual gives mostly the advice to take the medicine with water.

   On the other hand comparing the pH with the pH of softdrinks only one antipsychotics have a really low pH.
   The buffer capacity is not comparable with other studies (see 2)
   The pH is a riskfactor for developing erosion, but the buffer capacity is more important as well as the way and frequency of intake of the medicine.
   Children with a good oral hygiene have a risk for developing dental erosion.
Children with a bad oral hygiene develop more caries.
Caries and erosion can occur in the mouth of the child but never on the same surface.
Sugar substitutes are preferred.

6. Are limitations of the work clearly stated? See 5

7. Do the authors clearly acknowledge any work upon which they are building, both published and unpublished? So far as I can see, yes

8. Do the title and abstract accurately convey what has been found? The medication is a risk factor for developing erosion and caries. Erosion get more attention than caries. The title suggest the opposite way.

9. Is the writing acceptable? Sometimes it is inconsistent and not logical. Keywords are unlogical too.

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** Yes, and I have assessed the statistics in my report.