Reviewer's report

Title: Extrinsic tooth staining potential of high dose and sustained release iron syrups on primary teeth

Version: 3 Date: 12 December 2014

Reviewer: Ava Chow

Reviewer's report:

The authors demonstrate that combining two different forms of soluble Fe significantly reduces the staining ability of Fe over either form of Fe alone. These results have important implications in clinical care. However, there are some concerns regarding the study which are addressed below.

MAJOR COMPULSORY REVISIONS

1. The statistics that are used are not appropriate for the study design. As each sample was measured at multiple time points, and multiple groups are present, the appropriate statistic to use would be a two way repeated measures ANOVA, followed by post hoc tests should the initial ANOVA reveal the presence of a significant difference.

2. Additional details about how the teeth were stored and processed should be made available. Were they sterilized? Pellicle removed? Were they all stored for the same amount of time? If teeth were not sterilized and stored for different amounts of time, bacterial growth could affect the results. Additionally, were the teeth rinsed of the iron staining solutions prior to color measurement? This is important information to include as residual solution remaining on the tooth (but not necessarily staining the tooth) could affect the color read out.

3. The use of the word "approximate" to indicate the total iron dose is concerning. In order for the experimental groups to be comparable, they should be exposed to the exact same dose of iron.

4. For group 4, why was the particular ratio of Fe fumarate/Fe oxide polymaltose selected?

5. The discussion could be further developed to include a hypothesis as to the mechanism that may be involved in WHY mixing the two forms of Fe together would reduce staining.

MINOR ESSENTIAL REVISIONS

6. There are a number of grammatical inconsistencies and spelling errors that can be easily corrected with minor editing and proofreading. Some of these are listed below but is by no means a complete list:

   throughout the manuscript: in vitro vs in-vitro; one way vs one-way vs One way ANOVA;
This study tests, in vitro.

4 hours vs 4 hours; One way vs one way

Ferric to ferric

stains, AND wavelength....

till vs until

4 cm in diameter?

XXmL vs XX mL

approximately 100 mg? should be exact.

scheffe's to Scheffe's

need to define "clinically visible staining" in the stats section as that is the first instance it is mentioned in the body of the manuscript.

prevalane to prevalence

evaluate to evaluate

presentation of the data in a graphic form (vs tabular form) would allow the reader to more easily discern the difference between groups

An article of importance in its field

Needs some language corrections before being published

Yes, and I have assessed the statistics in my report.

I declare that I have no competing interests.