Reviewer's report

Title: Effectiveness of different strategies to treat anemia in Mexican children: a randomized clinical trial

Version: 1 Date: 28 November 2009

Reviewer: Kerry Schulze

Reviewer's report:

The paper describes a well done study addressing a question of interest. However, the paper is lacking in some areas that should be addressed. Some issues should be addressed throughout, but in particular should inform a revision of the abstract and discussion (items 1-4 below), while greater detail is required in the methods section on a variety of issues (items 5-9 below).

Major compulsory revisions/issues to address:

1) In the title this paper is referred to as an "effectiveness" trial, while in the body of the paper the "efficacy" of the intervention is referred to. Clarification is required as to how the authors perceive their own study.

2) There is too much emphasis on morbidity and anthropometry throughout the paper (methods, results, discussion) when the study is not powered to see differences in these outcomes.

3) Additionally, there is too little information in the paper on how compliance/rejection was assessed considering this was part of the rationale for the study.

4) Given that all the treatment regimens provided different amounts of iron, the authors should examine iron intake (compliance rate x supplement Fe content) in one of their models to help describe the impact of each supplement on change in Hb. Moreover, the authors should provide a rationale for what they think is the best possible intervention strategy given their findings. (Is the MMS to be recommended if compliance is somewhat affected? Are the more palatable interventions effective enough?)

Methods section:

5) Was the sample size chosen before the study or calculated post hoc to justify the number of participants, as the wording seems to imply?

6) Were IS, IFS, and MMS delivered to homes in liquid form? How were mothers advised to administer? For which of the interventions were the treatments "counted"? (page 6, line 25) To what precision were they weighed, using what, where (eg. in the home)?

7) More detail is required on the methods for collecting adherence/rejection
information. What were the questions that were asked? The paper reports that "treatment rejection was computed as the percent of weeks that the mother reported any difficulty when giving the treatment to the child...", which does not seem like a very discriminatory variable--was this more likely to happen when children were sick, tired, full, etc? It seems that if the treatment regimen was not well defined (eg. always give at the beginning of a meal) there are many factors other than the supplement itself that could lead to rejection.

8) Page 9, line 1 onward--The authors should clarify whether children who did not complete the treatment were included in the analysis as long as a follow-up blood sample was available. It seems this would be the appropriate "intent-to-treat" analysis. Figure 1 implies that children were lost to follow up because they EITHER did not follow the treatment regimen (the most extreme form of treatment "rejection"--and thus ideally kept in the analysis if a blood sample is available) OR because they did not give a blood sample. Is this the correct interpretation? Or were children who discontinued the treatment never asked for a follow-up blood sample?

9) The description of the data analysis using compliance data is not clear.

Minor essential revisions

10) Units for Hb are wrong throughout--should be g/dL

11) Page 7, line 4-5: "Also, height or length..." does not fit here since it is addressed in the next paragraph

12) Page 8, line 15: The questionnaire is introduced on page 6, line 25, which is more appropriate placement since it is a high priority objective of the study to evaluate compliance. It is repetitive to reintroduce it here without providing substantially more information on how it is used.

13) Page 9, line 8: morbidity data expressed per what unit time?

14) Results, page 11, line 1: "When comparing adherence rates...", there weren't significant differences in what? The sentence is too vague.

Discretionary revisions

15) Results, page 10, line 17: why not show the results for the effect modification with age?

Level of interest: An article of importance in its field

Quality of written English: Needs some language corrections before being published

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