Reviewer's report

Title: Gastric and intestinal barrier impairment in African adults: a randomised controlled trial of micronutrient supplementation

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Reviewer: Giacomo Carlo Sturniolo

Reviewer's report:

The paper describes the effect of micronutrient supplementation on different components of gastric and intestinal barrier in African patients with mixed HIV-status.

Micronutrients seem to ameliorate hypochlorhydria but don’t affect intestinal permeability and bacterial traslocation. Interestingly, the gastric mucosa in HIV patients did not show severe atrophy at histology, so one can postulate that mechanisms other than atrophy are involved in HIV-related hypochlorhydria.

The major limits of this works are: 1) the results have been published partially in a previous work, 2) only one dose of micronutrients has been experimented, whereas probably a higher dose could have different effects and 3) the number of subjects varies greatly among the different tests.

MAJOR COMPULSORY REVISIONS
- The title should include HIV-status
- You should specify if the different number of subjects in the subgroups derives from patients’ selection or spontaneous participation
- Please explain or give the reference to explain the different role of the sugars used for permeability test
- Page 7: "... antiretroviral therapy reverses hypochlorhydria". Unfortunately this is not a randomized trial of antiretrovirals and therefore you can only observe the difference among groups.
- Page 7: please give the statistical significance of the difference in gastric pH among groups
- Page 8: Salmonella and Shigella infections have been mentioned in the results but the method is not explained, and you should explain better the numbers (198+357= 555 samples but the trial included 500 patients and gastric pH was measured in 200 patients)
- Page 8: it would be interesting to know the proportion of patients with altered intestinal permeability
- Page 9: it would be interesting to know more extensively the histological results, apart from atrophy (normal mucosa? Gastritis? Others?)

MINOR ESSENTIAL REVISIONS
- Page 11: could you better explain the hypothesis of tropical enteropathy that
obsures the relationship between permeability and bacterial traslocation? You should even specify if you found altered permeability and normal traslocation or both normal.
- Histological images in my opinion are not necessary.

**Level of interest:** An article of limited interest

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests