Reviewer's report

Title: Community-acquired diarrhea among children and adults in urban setting in Senegal: clinical, epidemiological and microbiological aspects

Version: 1 Date: 27 May 2013

Reviewer: Ralf Krumkamp

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Major Compulsory Revisions

1. With your study design you cannot show which pathogen is the cause for childhood diarrhoea. You would need a healthy control group to compare asymptomatic infections. Please remove this statement from your paper (abstract, results and discussion).

2. You highlight that you compare children and adults, however in your analysis you compare <5 with >5 years. Adults are defined as 19+ (MeSH definition). In case you like to make statements for adults, you have to use this age stratum as well. In general it seems advisable to use more age-strata, because infections and symptoms differ substantially amongst age clusters.

3. Methods: How did you select study participants? Were this all patients with diarrhoea, a convenience or random sample?

4. Methods: It seems that you have missing data, please highlight how you tackled this in the analyses.

5. Lab methods: Please define unusual bacteria and describe how you interpreted these results for your study more clearly. Such bacteria and E. coli tend to be gut flora – you would need healthy controls to see weather they are pathogenic.

6. Lab methods: Were the stool specimens filtered/ concentrated? Not clear weather you applied two methods – please describe more clearly.

7. Statistical methods: You compare groups; please describe how the groups are established – what is the denominator (e.g. all patients with particular infection against those without this infection)? In case you do comparisons (e.g. virus vs. no virus) please always highlight your comparison group.

8. Never show only the p-value, this measure alone has less meaning. If you compare two groups always show the effect. This is much more relevant as a null-hypotheses test.

9. Co-infections: Co-infections are described. Would in interesting to compare observed proportions (pa&b) and expected proportions (pa*pb) to see whether some combined infection are more frequently observed.

10. Results p 8: Patients with viral infections: 94.9%+50.7%=145.6%?!

11. Results p 8: Don’t understand the comparison in the next sentence either:
“Among patients less than …”

12. Results last paragraph: (i) Why not together with the other co-infection results? (ii) Don’t understand comparison: Co-infections more frequent than single bacterial infection? I doubt this. (iii) I don’t understand how co-infections were compared with clinical and epi characteristics – please present more details.

13. Discussion p 9: “For all these patients, the origin …”, this statement count not be made from your study, because you did not investigated this study question. You can highlight that other studies found an association.

14. Discussion p 9: “In Dakar and its suburb, the rainy season …”, please provide citation.

15. Discussion p 10: “Our study also confirmed that rotavirus and other viruses …”, as mentioned above, this statement can not be made with your study design.

16. Discussion p 10: “The prevalence in our patients less then 5 [sic] years …”, please show the prevalence from the cited studies.

17. Discussion p 10: “Although this 22-month prospective study …”, is a very strong statement. For doing so you should compare your study with others systematically. I would remove this statement, especially because you did not use a control group, which other studies did.

18. Discussion p 10: Limited sample size is not the reason why you did not find association between risk factors. This is due to the study design.

19. Discussion p 10: “… 19% of patient were excluded …”, again results shown in the discussion, which are not presented in the results section.

Minor Essential Revisions

20. Please stick to the correct tenses throughout the article sections. Please revise your English (e.g. proper use of “respectively”).

21. Abstract, Results: Why are the organisms shown within the brackets? Are they the most frequent ones? What is the denominator for the %?

22. Always provide both frequency and the corresponding per cent.

23. Number below twelve should be written using letters.

24. In case you like to report p-values, you don’t have to show more precision then “<0.001”, smaller values have no practical relevance.

25. Please check writing of the organisms (italic, sometimes with sp. or spp or spp. and sometimes without spp. – please harmonise)

26. Abstract, discussion: You do not calculate the prevalence, just the proportion of infections in your group.

27. Please carefully reread the paper you are citing. Reither et al. for instance does include children >5 years in their study.

28. Page 5: Include citation for R software

29. Results, p 6: You don’t have to show the sex-ratio if you present the
percentages – both measure the same.

30. Results, p 6: Present median age (IQR) as it is left-skewed

31. Please use the words “observed” and “reported” properly. They seem to be used likewise.

32. Results: Try to avoid interpretation of data in the results section (e.g. blood in adults stool). Interpretation should be done along with further data in the discussion section (e.g. considering specimen distribution within age-groups as well).

33. Results p 6: “Presence of other diarrhoea cases was …”, do you mean “other cases in the family” or do you compare the two age-groups?

34. Results p 7-8: Only present numbers in brackets, not parts of the sentences, e.g. better write (40.8% vs. 28.4%, p=0.07).

35. Discussion p 8: “… isolated from 81% …”, not 80%?

36. Discussion p 9: Seasonality of roundworm only presented in discussion, yet not in results.

37. Figure 2 is not cited in the results

38. Figure 2 description: “detected” instead of “isolated”, because you used PCR and microscopy as well.

Discretionary Revisions

39. Background: change “source of poverty” to “socio-economic status”

**Level of interest:** An article whose findings are important to those with closely related research interests

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

**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.