Author's response to reviews

Title: Antigen-specific assessment of the immunological status of various groups in a leprosy endemic region

Authors:

Angélica COC Fabri (angelicafabri@yahoo.com.br)  
Ana Paula M Carvalho (anapaulamcarvalho@yahoo.com.br)  
Sérgio Araújo (sergiooxwide@hotmail.com)  
Luiz Ricardo Goulart (lrgoulart@ufu.br)  
Isabela MB Goulart (isagoulart@centershop.com.br)  
Ana Márcia M Mattos (anamarciamattos@yahoo.com.br)  
Henrique C Teixeira (henrique.teixeira@ufjf.edu.br)  
Malcolm S Duthie (malcolm.duthie@idri.org)  
Rodrigo Correa-Oliveira (correa@cpqrr.fiocruz.br)  
Francisco CF Lana (xicolana@ufmg.br)

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Author's response to reviews: see over
Dear Editor,

We thank the reviewers for their positive assessment of our study and their helpful comments. We have made the changes suggested by the reviewers and highlight these in the revised submission. Our responses to specific comments are provided below,

With Kind Regards,

The authors.

Referee 1 - reviewer's report

Major compulsory revisions
1. This version of the paper requires some corrections before acceptance. The spelling must be checked, and some words are missing or need replacement.

Authors' answer: The manuscript has been revised, with spelling and grammatical corrections made as suggested in the “Quality of written English”. We have also rearranged the flow of the text in some areas to improve the reading.

Discretionary revisions:
1. The methods description could be more compact.

Authors' answer: We have reviewed the methods section and judged that all of information included is pertinent and important for the overall understanding of the study.

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

Authors' answer: Changes have been made as described above.

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Authors' answer: The statistical analysis section has been revised and changes have been made in the data analysis as suggested by the referee 2.

Referee 2 - reviewer's report

Major Compulsory Revisions

1. Is the question posed by the authors well defined?
   Ans. Question posed by authors is well defined.

2. Are the methods appropriate and well described?
Ans. Methods are appropriate and well described.

3. Are the data sound?
Ans. Data showed here is fine. But I have following questions:
   a. How authors have determined the cut off value? Which population (those were general population or unexposed population) and how many individuals they have taken to calculate cut off value. It should be mentioned in the manuscript.

   Authors’ answer: The description of cut off value calculation has been inserted in the Methods section (page 7, lines from 162 to 165).

   b. Household contacts and general population is not comparable. Both household contacts and general population could be taken from the same geographical area to detect subclinical infection as mentioned in the manuscript. Authors can not make conclusion as mentioned in manuscript at page number 3 line number 95-97 surprisingly is not the correct word on the basis of above mentioned fact. It is well known fact that in endemic population general population will be more exposed and give higher reactivity to antigens than to the population from less endemic area.

   Authors’ answer: We thank the reviewer for this note. We have removed reference to the comparison between the household contacts and general population from the Abstract. We have maintained the description in the results and discussion sections but now note and discussion the limitation of the two groups being sourced from different geographical areas.

4. Do the figures appear to be genuine, i.e. without evidence of manipulation?
Ans. Figures appear to be genuine.

5. Does the manuscript adhere to the relevant standards for reporting and data deposition?
Ans. Authors have analysed data by using proper statistical tools. But I have some suggestions:

   a. As mentioned in Figure 1 PGL-1 is showing 100% positivity for LL patients and levels are higher than ND-O-LID or LID-1 for most of the cases but authors has not described PGL-1 in result and discussion part.

   b. Authors should do statistical comparison between all the antigens including PGL-1 to find out which one is best among different groups of leprosy patients. Which antigen is superior for identifying LL cases?

   Authors’ answer: The PGL-I results shown in Figure 1 are described in page 8, line from 197 to 198. As suggested, the statistical comparison between all of the antigens has now been performed and is displayed in Figure 2. Data are also presented in the results section, page 9, lines from 201 to 205. The discussion of these data has been added in page 12, lines from 276 to 277.
c. What is the level of PGL-1 in general population?

Authors' answer: Comparability of anti-PGL-I responses with those against the other antigens was shown in Figures 1 and 2, and therefore the assessment of PGL-1 responses in the general population was not made. A further limitation of the potential for widespread use of the PGL-I antigen is also now described in page 12, lines from 277 to 279.

6. Are the discussion and conclusions well balanced and adequately supported by the data?
Ans. Discussion is supported by published literature and authors have genuinely discussed their findings. Conclusion should be change in terms of household contacts and general population otherwise it is fine.

Authors' answer: We have now discussed the limitations of our study design for the comparison of HHC and GPop responses. In addition, as advised in the "Major Compulsory Revisions", topic 3b, we have removed mention of this comparison from our conclusion.

7. Are limitations of the work clearly stated?
Ans. Authors mentioned about the limitation of work but it could be overcome by selecting same population for household contacts and general population.

8. Do the authors clearly acknowledge any work upon which they are building, both published and unpublished?
Ans. Authors have acknowledged literature upon which they built their study.

9. Do the title and abstract accurately convey what has been found?
Ans. Title and abstract conveyed the findings in this study.

10. Is the writing acceptable?
Ans. Acceptable

General comments:

1. Figure 2 legend mentioned EC group (page number 20; line number 540, 543) but in figure and manuscript authors have not mentioned about EC group.

Authors' answer: The group label has been renamed as Gpop to provide consistency between text and figure.

2. Page number 17, line number 456,457 incomplete reference should be deleted.
Authors' answer: This citation and reference has been removed.

Level of interest: An article whose findings are important to those with closely related research interests
Quality of written English: Acceptable

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