Reviewer’s report

Title: Social and environmental conditions related to Mycobacterium leprae infection in children and adolescents from three leprosy endemic regions of Colombia

Version: 2 Date: 22 Mar 2019

Reviewer: Kevin Escandón-Vargas

Reviewer's report:

This is a very interesting and well-conducted study.

Authors have successfully addressed the comments of the reviewers.

Below there are issues that need to be considered before publication.

As editor and reviewer for this manuscript I really enjoyed reading it.

Check Héctor Serrano-Coll's affiliation. Graduate school?

Please remove any additional files you do not want published alongside your manuscript, including cover/response to reviewers, consent to participate form, and ethics approval (both as supplementary files and at the end of the Word manuscript).

BACKGROUND

Page 3: Please correct lines 10-14. The source (reference 3) says "Up to 11% with grade 2 disability (G2D) at the time of diagnosis, increasing to 27.3% during follow-up have been reported". Decline?

Line 17: Change "percentage" to "percent".

Line 19: Change "aged" to "age", "are" to "were".

Line 28: change "has" to "have".

Line 41: do not capitalize natural octyl disaccharide.

Line 52: BCG (bacillus Calmette-Guerin): write out first, then abbreviate.

Line 58: This sentence is the same as in the line 16. Delete it from the earlier place.

Page 4 Line 12: delete "could be" after responses. It reads better.
METHODS

Line 36: change "younger than 18 years of age" to "18 years and younger". Rationale: you included 18-year-old people.

Page 6 Line 15: Delete the ethics declaration section. The same content as part of the Declarations at the end of the manuscript is enough.

RESULTS

Page 6: TABLE 1: put ", years" in the last column heading.

Page 7 Line 21: change "<0.05" to "=0.001".

Line 29: change "low-medium" to "medium-low".

Line 30: change "Figure 1" to "Figure 1A".

Page 8: TABLE 2:

- I recommend to put a 1 in all the baseline categories to allow comparison and avoid confusing the readers. If the table size is a problem for you, then reduce the font size.

- ORs were not conducted with the same variable/level of comparison, why? This facilitates comparison and you put "1" in the category with the lowest OR. Same comment for Tables 3 and 4.

- Change "," to ".".

- Change "Medium low" to "medium-low"

Page 9 Line 11: change "<0.05" to "=0.0001". Be consistent (to avoid confusing the reader), change "Uraba region" to "UAC'hR", you meant the same, right? Otherwise, consider using a simple term "the Uraba region". Check throughout the manuscript.

Line 21: change "Figure 1" to "Figure 1B".

Line 34: change "low medium" to "medium-low".

Line 44: Change "<0.05" to "<=0.001".

Line 52: change "Figure 1" to "Figure 1C".

Page 10: TABLE 3: change "," to ".".

Line 43: change "<0.05" to "=0.0001".
Line 48: change "Figure 2" to Figure 2A".

Page 11: TABLE 4: change "," to ".".

Line 48: Contacts could have been vaccinated for their first time. Delete "re-". Delete "received this reinforcement".

Line 55: change "<0.05" to "<0.01". Change "anti-IgM" to "IgM", anti-IgG to "IgG". Correct p value for IgG, in the Figure 2B it is 0.007.

Line 59: change "Figure 2" to "Figure 2B".

Page 12 Lines 12-16: write out MB and PB (first uses).

Line 17: change "anti-IgM" to "IgM", anti-IgG to "IgG".

Line 16: This sentence lacks something, it does not read well. "Surprisingly, anti-NDO-LID antibodies detected by Protein A, anti-IgM or anti-IgG showed similar rates, however, when subjects were stratified by their residency with either MB or PB cases (p-value > 0.05) (Supplementary Material)." Which is the suppl material? There is none as additional file.

Line 25: change "Figure 3" to "Figure 3A".

Line 47: Change "years exposure" to "years of exposure". Correct p value for IgM, in the Figure 3B it is 0.044. Consider mentioning IgG (P=0.031) as well. Remove OR (to be consistent with your approach), leave just the p values. Change "Figure 3" to "Figure 3B".

Line 50: Move "Table 4" to line 43.

Line 50: Please add a phrase giving account of the slight statistically significant differences. Unlike other comparisons, protein A (and IgG) had p > 0.05 in this case.

Page 13 Line 8: Which is the suppl material? There is none as additional file.

Line 18: change "related with" to "related to".

Table 5: Change "exposition" to "exposure".

DISCUSSION

Page 15 Line 34: Was the antibody measurement approach of Amorim similar to yours?

Line 43: delete extra ].

Page 16 Line 32: change "results" to "resulted".
Page 17 Line 23: Make clear that with "such prophylactic measures" you only mean BCG vaccination, because treatment with rifampin (preferable to rifampicin) is not supported by your data.

Please discuss the differences on the basics (methodology chosen and why) and results between protein A, IgM, and IgG, in terms of interpretation or impact in your results. Furthermore, you propose regular monitoring of anti-NDO-LID abs in children: are (will) these (be) widely available? would you make a recommendation to use one of these measurements in future studies?

FIGURE 1:
- Missing: P value for IgM, x-axis for IgM and IgG. Change "," to ".".
- In the legend you mention A, B and C. Parts B and C are missing, and part A is not labeled.

FIGURE 1 LEGEND:
- Please be consistent throughout the manuscript. Change "lower-lower" to "low-low", "lower" to "low", "lower middle" to "medium-low". (use the find tool)
- Correct what you wrote about box and whisker plots. The ends of the box represent the upper (Q3) and lower (Q1) quartiles, so the box spans the interquartile range, NOT THE RANGE (MIN-MAX). The horizontal bar represents the median... delete "of the range". This applies for Figs 2 and 3 as well.

FIGURE 2: Remove the tag "Figure 2" from the figure itself.

FIGURE 2 LEGEND:
- Delete "re-".

FIGURE 3:
- Remove the tag "Figure 3" from the figure itself.
- Change x-axis "Time" to "Exposure time".

ALL FIGURE AND TABLE TITLES: Check that they have max 15 words. Change "teens" to "adolescents". Also, improve quality (when zoom is used, words should be clear and readable) of Figures. The low-quality is due to the multi-label figures; do not affect resolution of individual figures. Use a professional software.
ABBREVIATIONS

Change "regions Uraba-Antioquia-Chocoano" or "Uraba Antioquia-Choco" to "Uraba-Antioquia-Choco region" throughout the manuscript (use find tool). Chocoano is a typo, right?

Alphabetize the list.

Include household contact (HHC) and use this abbreviation throughout the manuscript since it is currently used in some, not all parts (use the find tool in word). Also add ICMT.

DECLARATIONS

In the "Funding" section of your declarations, please clarify the role of the funding body in the design of the study and collection, analysis, and interpretation of data and in writing the manuscript. For instance, "The funding body had no role in the design of the study, analysis, interpretation of data and in writing the manuscript".

REFERENCES

Complete references 5 and 8 according to journal reference style.

Reference 16: Change language i.e., Available at instead of Disponible

Please remove the field codes before submitting a new version. Save for yourself a file with the field codes to make further changes if necessary. Please double check citation since I am concerned that there are only field codes for the reference list but not for the in-text reference numbers.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

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Does the work include the necessary controls?
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