Reviewer’s report

Title: Interaction of nutritional status and diabetes on active and latent tuberculosis: A cross-sectional analysis

Version: 0 Date: 18 Apr 2019

Reviewer: Kavitha Saravu

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Reviewer's Comments:

Interaction of nutritional status and diabetes on active and latent tuberculosis: A cross-sectional Analysis; Ref: INFD-D-19-00453

The authors have addressed a very important aspect of Interaction of Nutritional status with TB & DM.

Authors also have explored this association among LTBI which is commendable.

My specific comments are:

1. Table 1: How is that predominant Gender differences in TB patients and household contacts? It means, for household contact tracing, not all eligible male members were not available. How was the TB contacts screened? Is it by a house visit or the house hold contacts who were available? Is there a possibility that the gender bias could have affected the comparison? Especially age, hazardous alcohol use (more commonly in males)

2. Table 1: Other Comorbidities; the numbers for individuals with renal failure and HIV are too low; It may be that all individuals are not tested for this. In that case the number of individuals tested can be mentioned.

3. Under study procedure: Page 6, line 34. All household contacts were followed for one year to identify incident active TB disease. This is not clear. How often the household contacts were followed over 1 year and what was the follow up like? Were they followed up with symptom screen for TB? The result of this follow up is not mentioned anywhere. If it is not required, then the follow up need not be mentioned in this manuscript.

4. Statistical analysis section: Page 7, Line 4; Exclusions have been mentioned; Authors could better depict the enrollment, exclusions and main results as a flow diagram.

This is clearly, sub analysis of the data from the RePORT India Consortium. The sample size was not calculated prior to the study for the given objectives. What is the power of the conclusions?

5. Results section, Page No 8: The proportion of underweight, normal weight, and overweight or obese participants with diabetes was 11%, 25%, and 20% respectively. This is not clear; esp the numerator and denominator.

6. Discussion: Page 10, Page 36: "Our findings provide support for current Indian national guidelines recommending bi-directional screening of all diabetes patients for active TB
and all TB patients for diabetes". This study findings only tested and provide support that all TB patients should be tested for diabetes. Where is the evidence to support that all DM patients should be tested for TB?

7. Page 11, Line 53-58: "Our finding that prior diabetes diagnosis alone or in combination with elevated RBG is not associated with LTBI adds to the evidence that diabetes is not a significant risk factor for LTBI in India" The selection of a house hold contact cohort for LTBI seems biased in view of the strong gender bias. Hence could this be an inappropriate conclusion? Logically if DM is not associated with LTBI, then how is TB diseases associated with DM?

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

Yes

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

Yes

**Are the conclusions drawn adequately supported by the data shown?**
If not, please explain in your comments to the authors.

Unable to assess

**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I recommend additional statistical review

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