Reviewer's report

Title: Childhood Tuberculosis and its treatment outcome in Ethiopia: a 5-years retrospective study

Version: 2 Date: 22 September 2013

Reviewer: Alan Altraja

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This manuscript handles childhood TB and its treatment outcomes, which is indeed a significant public health issue. Unfortunately, the manuscript is unacceptable for publication in its current form see the following major concerns. The manuscript can be improved significantly by revisiting the original data (re-thinking what variables are needed, pursuing missing data, proper quality control on the data), new statistical analyses, and thorough re-writing of the manuscript.

The major problem, even apart from the quality-of-data issues, is the novelty of the data: what this study adds to the pre-existing knowledge in this area of TB?

The first two large paragraphs of the Materials and Methods section („Diagnosis and treatment of TB among children in the study area“ and „Study area“) do not entirely represent „methods“. Although proper description of the background is important for this kind of studies, the Materials and Methods section should be shortened by placement of most of the descriptive contents into the Introduction.

This study was carried out in Addis Ababa. Did the study cover the entire Addis Ababa? How does this reflect the situation in the whole country?

Standard definitions of the Ethiopian NTLCP guidelines were used in this study. Why were not WHO definitions used? In the sub-section „Definitions for treatment outcomes (FMOH, 2008):“, the definitions are given in full. However, the full definitions can be deemed redundant if correct references were used in the former sub-section.

In the paragraph „Study design and data collection“, a more thorough description of what data were namely collected, by whom etc., is needed. How was the main database for this study created? How were the missing data handled or were the data missing in the TB registries of each health center pursued in some way? Were separate TB registries present at each health care center? On page 5, line 124, there is mentioned that the data were extracted from TB registration books… .

In the paragraph entitled “Data processing and analysis”, how were the data checked for completeness and accuracy?

The description of statistical analysis seems to be either incomplete or badly
vague. What is meant under “Descriptive statistical methods” (page 5, line 125)? What was Chi-square test used for (lines 126-127)?

Results: although the coverage of testing for was HIV increasing with years, the HIV serostatus was unknown for as large proportion as 52.1% of children; among those tested, 26.8% were co-infected with the virus. It would be interesting to know, what could be the proportion of HIV positivity among the untested population (in Discussion)? It has been, however, mentioned that children with unknown HIV sero-status had poor treatment outcomes (Discussion, page 8, line 214). The Discussion is a bit inconsistently written, which makes it difficult to follow, e.g. the HIV issue is revisited later on this page (page 8, lower paragraph).

Discussion: there are numerous pretty serious limitations mentioned, e.g. the lack of socioeconomic data. Some data were confessed to be incomplete. What data? Furthermore, the authors claim that some data collected from registries may be inaccurate. What data? Major discussion is needed to evaluate the influence of the absence of data not collected at all (socioeconomic data), but other input data must be at least correct. The limitations also include the retrospective nature of the study.

Table 1: Without referral to the text, it is not clear for the reader, what does “PTB-” mean? Smear-negative pulmonary TB? Why there are no statistical differences mentioned? Why are some of the treatment outcomes marked as “NA”?

Figure 1 may not depict the most important finding from this study. Instead, a forest plot of the main results would be of more value.

**Level of interest:** An article of importance in its field

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

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare that I have no competing interests.