Reviewer's report

Title: Treatment outcome of smear-positive pulmonary tuberculosis patients in Tigray Region, Northern Ethiopia.

Version: 1 Date: 28 January 2012

Reviewer: Matthew Arentz

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Overview

I would like to thank the authors for their submission and their work. While I do believe this article has some significant concerns, it does allow the opportunity to highlight successes in TB control in Ethiopia and describe barriers to effective TB treatment. Further editing of the content, especially in the discussion, could significant improve the paper to a point of acceptance, and I hope the authors consider editing and resubmitting.

Abstract

It appears the font size changes during the introduction.

In the results section, the wording is confusing. I would change ‘big family size’ to greater than 5 family members. In addition, you do not state an odds ratio for unemployment. The wording of the results is much better in the text than in the abstract.

Introduction

In the first paragraph, the font again seems to change size.

Please define treatment success by the WHO criteria.

You comment that treatment can be challenging for both patients and providers on page 4. Please provide a better reference that TB treatment is challenging or better define what you mean. Specifically, are there data that any of the variables you evaluate might be associated with default or poor treatment outcomes?

After you describe the global DOTS implementation framework, please describe efforts to improve TB diagnosis (especially smear microscopy) in Ethiopia. Who oversees TB diagnosis and treatment? Is therapy directly observed daily? Who does the observation (a healthcare provider, community member or family)? Who is screened for TB? Who receives smear microscopy? Is there quality assurance for smear microscopy and, if so, by whom? Are drugs free? Which standard regimen/s are used?

Do any/all retreatment cases get drug susceptibility testing? If not, a large proportion of your poor outcomes in retreatment cases could be due to drug
resistance. Please define how DST is used in Ethiopia, especially in retreatment cases.

Material and Methods
Can you clarify that this was a consecutive sample of smear positive patients from the selected districts during the time limits of the study?

Statistical Analysis
Please define what variables were factored into your adjusted OR's.

Results
Were all patient’s offered HIV testing? If so, the ‘HIV unknown group’ could be relevant. Other studies have shown patients who refuse HIV testing to have a higher risk of poor TB treatment outcomes.

Discussion
This section needs significant work to improve the grammar and flow of the text.

The statement at the end of page 12 “the lowering of the immune system level with increasing age would be the reason for unsuccessful TB treatment” appears to be speculation and, if backed by data, should be accompanied by a reference.

Your comments about crowding are not cohesive. Why do you think you found a higher risk of poor treatment outcomes in families of greater than 5? While crowding promotes spread of TB it should not, in itself, be a risk factor for poor outcomes. What other confounders could be present?

Please clarify paragraph 2 on page 13, as it is confusing and does not explain your observation of unemployment as a risk factor for poor treatment outcomes.

Please comment on how inclusion of smear negative patient might have changes your observations, especially in subjects with HIV co-infection.

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:

no conflicts of interest to disclose