Reviewer’s report

Title: The Effect of Incident Tuberculosis on Immunological Response of HIV Patients on Highly Active Antiretroviral Therapy at Gondar University Hospital, Northwest Ethiopia: A Retrospective Follow-up Study.

Version: 2 Date: 6 May 2014

Reviewer: Neil Martinson

Reviewer’s report:

This manuscript reports on the rate of immunological failure (CD4-based) in patients starting ART and receiving ART for at least six months.

Major Compulsory Revisions

1. Suggest a proof reading by someone whose first language is English as there are a number of errors that need correcting as well as some rephrasing to make it easier to read (eg Active TB developed in 26(6.5%) of patients within 42 months on ART; Incident TB is defined as active TB which developed after initiating ART and prevalent TB as active TB for which treatment is initiated prior to ART).

2. It is a pity that the authors selected to only report those people with at least six months of ART, as it appears most immunological failures occur early after treatment initiation. Suggest

2.1. A flow diagram or text equivalent is included to show the total number of patients started on ART, the total number with >1 month of follow up, the number remaining in care at 6 months (484), 12 months, 18 months etc and the number who did not have enough data to be included in this analysis.

2.2. Show immunological failure rate in three or six month increments not one year.

2.3. There are several components to the treatment failure - rank the components that contributed to diagnosis of immunological failure - possibly stratifying by incident TB.

3. End of follow up time needs to be defined. Why is there an apparent censoring time of 42 months? The retrospective review was conducted in 2013. Patients were started on HAART ~5 years earlier - there should be some who have >60 months of follow up time.

4. Were there really only 484 people who started ART in the year Sept 2007-Aug 2008? What other eligibility criteria were used to include or exclude participants.

Minor Essential Revisions

5. Table 1 and Table 2 could be combined without losing data and decide whether your columns are immunological failure or incident TB.
6. Similarly could the KM graphs not be combined to show interesting interactions between TB and possibly baseline CD4 count. Or just have one figure with three of four subfigures contained it?

7. Suggest the multivariable Cox analysis be redone after discussion with a statistician

7.1. Excluding those variables that are either not biologically plausible or appear to have no impact in univariable analyses.

7.2. Consider collinearity -- CD4 count is likely to be very closely correlated with WHO stage and with functional level. I suggest you only include CD4 in your multivariable model and leave out the other two.

Discretionary Revisions

8. Can you not find a more reader-friendly term than "Immunological failure survival"?

Level of interest: An article of limited interest

Quality of written English: Not suitable for publication unless extensively edited

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

Declaration of competing interests:

I declare that I have no competing interests