**Reviewer's report**

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

**Version:** 3  **Date:** 7 July 2014

**Reviewer:** Brian Kigozi

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

Version 4

Reviewer: Dr. Brian K Kigozi

Date of review: 7th July, 2014

Reviewer's report:

** The Effect of Incident Tuberculosis on Immunological Response of HIV Patients taking Highly Active Antiretroviral Therapy at Gondar University Hospital, North West Ethiopia: A Retrospective Follow-up Study**

** by Abate Assefa et al

Authors have attempted to address queries which arose in the earlier version of the manuscript. However, the manuscript still has major revisions before publication.

Major comments:

Abstract:

1. Title: In the earlier version (3) the title used the phrase “Patients on Highly Active Antiretroviral Therapy” which has been amended to “Patients taking Highly Active Antiretroviral Therapy...” I suggest the authors use the former phrase.

2. Background: “Highly Active Antiretroviral Therapy (HAART)” is appearing. This is still interchangeably with “Antiretroviral therapy (ART)” throughout the abstract and manuscript.

3. Results: I suggest authors need to amend as follows. “At multivariate analysis, Cox-regression analysis showed baseline CD4+ T-cell count <100 cells/mm3 (AHR 1.8; 95%CI: 1.10#2.92, p=0.023) and being male sex (AHR 1.6; 95%CI: 1.01#2.68, p=0.046) were found to be significant predictors of immunological failure. There was borderline significant association with incident TB (adjusted hazard ratio (AHR) 2.2; 95%CI: 0.94-5.09, p= 0.06). The risk of
immunological failure was significantly higher (38.5%) among those with incident TB compared with TB-free (21.1%) (Log rank p = 0.036).

4. Conclusions: incident TB is not a major determinant of immunological failure as the null hypothesis is not rejected.

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1. Introduction and Methods: Reference no 8 should be cited as a website page in order to benefit the readers of the manuscript as the referred document is available on line. The document gives also various threshold for HAART initiation;
- patients with CD4+ T-cell count of # 200 cells/mm3
- WHO clinical stage 3 with CD4+ T-cell count of # 300 cells/mm3 etc.
(Methods, study setting and population, 1st paragraph). I suggest “new active TB” should be replaced with “incident TB.”

2. Methods
Study design and data collection: The following sentence is not clear and needs rephrasing as it appears as a prospective follow-up, “This period was selected to follow the patients for sufficient time.” Adult HIV patients……(having at least two CD4+ T-cell measurements). The word apart is missing. Similarly, the rest of the paragraph needs rephrasing to be more meaning full as it contains phrases like “…like the date ART was initiated…”, “All data needed for the study…”
Statistical Methods: Authors should mention the data software which was used for data entry and how it was exported to SPSS (version 20) for analysis. The word SPSS is appearing for the first time and should be spelt in full.

Results:
Baseline clinical characteristics of patients:
Second sentence I suggest the word “blood” is removed. The 3rd sentence the figures and percentages mentioned should be crosschecked with that derived from the table. Fourth sentence, percentages in brackets should come after the mentioned HAART regimens i.e stavudine/3TC/NVP or EFV (12.3%)…Reference should be made to Table 2).
Immunological failure after initiation of ART
3rd sentence: the median time from HAART initiation to immunological failure was 6 months. Authors should determine and compare the median time to immunological failure for patients with and without incident TB.
Figures 1-4: As in my previous report, y-axis should report the probability of immunological failure and x-axis report follow-up time in months.
Discussion: 3rd paragraph, 6th sentence. This sentence needs rephrasing and the following phrase removed, “…borderline association with…”
Use of reference manager like endnote to organize references. Reference [24]
cited before [23].

Minor revisions
Grammatical and spelling errors are still appearing in the manuscript. There is a need for proof reading by a person who comprehends and commands good English. Examples;
-introduction: 4th paragraph, first sentence: amend as …in TB/HIV co-infected patients….
-Methods:
Study setting and populations:
Hyphen between North and West and follow and up
WHO national guideline should be amended to “WHO national guidelines”
Ethical approval: Last sentence. “Individual records was coded and accessed only by research staffs.” This should be rephrased.

Results:
Baseline socio-demographic characteristics of patients: The 2nd last sentence needs correction and rephrasing.
CD4+ T-cell counts should be reported as cells/mm3 throughout the manuscript and abstract.
Discussion: 3rd paragraph, 1st sentence. There should be no hyphen between the words Cox and regression.

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

**Declaration of competing interests:**
No competing interests declared