Reviewer’s report

**Title:** Predictors and Delay in Detection of Failure and Switching of First Line Anti-retroviral Therapy in Ethiopian Children with HIV/AIDS

**Version:** 1  **Date:** 16 May 2012

**Reviewer:** Linda Aurpibul

**Reviewer’s report:**

Reviewer’s comments

Manuscript title: Predictors and Delay in Detection of Failure and Switching of First Line Anti-retroviral Therapy in Ethiopian Children with HIV/AIDS

Authors: Tigist Bacha, Birkneh Tilahun, Alemayehu Worku

This article is about antiretroviral treatment for HIV-infected children in a resource limited setting. The important questions have been addressed including prevalence of treatment failure, timing for detection of failure, and timing for switching to second line drugs, as well as predictors for failure have been presented.

The authors have posed 3 research questions which were easily identifiable and understood;

- To determine prevalence of treatment failure among children receiving first line ART
- To identify predictors of treatment failure
- To address the delay in switching to second line regimens

Those questions were not novel, a lot of papers from other regions worldwide have reported similar findings, but the fact that this study is a large pediatric cohort from one African country has made it interesting and worth to be considered. As it is a retrospective study, there is no control group. The number of subjects is large enough to make the results valid.

However, I would like to recommend revisions on the following issues;

**Major comments**

**Title**

The word “delay” could discourage readers from further reading. Rewritten would make it more understandable and interesting i.e.

“Predictors of Treatment Failure and Time to Detection and Switching in HIV-infected Ethiopian Children Receiving First Line Antiretroviral Therapy”

**Abstract**
• There were 167 cases with treatment failure (80 clinical and 87 immunologic failure), while there were 18 with both types of failure, were they included in 167? Should it be easier to understand saying how many had only clinical, how many had only immunologic, and how many had both of them?

• In the results part, the authors claimed that there were 167 cases with treatment failure which meant they were readily been diagnosed as having treatment failure. Why they said that 144 cases were not detected? Actually there were 24 children who have been switched to second line ART, while other 124 have already been detected as having treatment failure but not yet switched to the second line regimen. The authors should make it clearer.

Methods
• References for z-score calculation should be provided.
• Why the authors use cut-off at -3SD? (while -2SD is approximately 3rd percentile which is commonly used as a cut-off for delayed physical growth).
• What is the mean time of detection of treatment failure? Was it extracted from medical record? Whether it was from the date of ART initiation to the date when VL > 100, or having clinical sign/symptoms, or date when the word “failure” was noted should be clarified (and also the mean time to switch regimen is needed to be clarified).

Results
• Chronic diarrhea which was found to be a strong predictor for treatment failure did not include in the Table 3.

Discussion
• The authors should provide some explanation for why the five predictors led to treatment failure in Ethiopian context i.e. associated with inevitable suboptimal adherence, poor family environment, or concomitant illnesses/medication used etc.

Figures
• All 4 figures added no additional information to what we have learned from Table 3. They can be removed without effect on the completeness of results.

Minor comments
Abstract
• Reading only abstract, the number of hospitals included was questionable. It should be stated as “at four major hospitals”.
• What is AHR stand for? Abbreviations are needed to be defined at the first use.
• Did 95CI mean 95% confidence interval?

Methods
• Descriptive statistic should be presented in number (percentage), median (range or interquartile range), or mean (standard deviation).
Why did the analysis not start with univariate and follow by multivariate analysis, what is the bi-variate?

Results

- As more than half of children were > 5 years of age, the mean age should be better reported in years than months.
- CD4 count should have unit (cells/mm3)

Tables

- Only horizontal lines are needed for tables
- There should be no abbreviation in table’s legends; all abbreviations used should be defined in footnote
- Number of decimal should be consistent everywhere in the table (either 1 or 2 decimals).

Table1

- Number of cases in each hospital could be described in text if there was no difference in outcome or baseline demographic information between hospitals.
- The number “n=1186 was not needed to be presented for every characters, as there was only parental status which the number was 1155, they might better add the number of “unknown” instead.
- The fact that only 36 cases received TB treatment could better be described in text than presented in the table.

Table 3

- WHO clinical staging should be “stage 1 or 2” and “stage 3 or 4” (not “and”)
- Level of adherence (good, fair, poor) should be defined.

Other comments

- English language editing (grammar and spelling) is needed, and many typo errors are presented.

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:

I have no competing interest