Reviewer's report

Title: CD4 lymphocyte dynamics in Tanzanian pulmonary tuberculosis patients with and without HIV co-infection

Version: 1 Date: 16 January 2012

Reviewer: Justin Green

Reviewer's report:

1. Is the question posed by the authors well defined? Yes, they describe a (sub-) analysis of the CD4 count dynamics in a large cohort of Tanzanian TB patients and well chosen controls


3. Are the data sound? Yes to my reading of them. In addition they have managed to get an 80% follow up over 5 months in sub-Saharan African HIV/TB patients; no mean feat.

4. Does the manuscript adhere to the relevant standards for reporting and data deposition? I think so except there is no flow chart so we have no way of knowing if the 1605 subjects they have recruited is representative of the TB population studied (i.e. what was the refusal rate to give consent?)

5. Are the discussion and conclusions well balanced and adequately supported by the data? Yes but confused and not in a readable order

6. Are limitations of the work clearly stated? Yes

7. Do the authors clearly acknowledge any work upon which they are building, both published and unpublished? Yes – they use data from a previously published micronutrient study which is referenced. However, it is not clear to me if this is a pre-set objective of that study or exploratory analysis – this should be stated in the introduction.

8. Do the title and abstract accurately convey what has been found? Yes

9. Is the writing acceptable? The intro and discussion could be improved. Specifically I think the intro could include a few of the studies in the discussion to set the scene better. These could then be removed from the discussion to shorten it a little. In addition the results (to my reading) is confusing as set out, although the tables show there is a set of real and interesting findings that need better presentation.

Discretionary Revisions (which are recommendations for improvement but which
the author can choose to ignore):

- Abstract would be better with absolute numbers rather than differences
- Ethics section – final sentence appears to be a repetition of previous one. If not please clarify
- Please state if these patients also received micronutrients in the referenced previous work

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

- There is no statistical justification why their multiple testing (e.g. table 4) has not been corrected e.g. with post hoc Bonferroni etc.
- Add a study flow chart as figure 1 please.
- The authors state they performed linear regression. However, they use categorical data (e.g. PTB+/- and HIV +/-) as well as continuous data (CD4 count). So I suspect logistic regression was performed? Please clarify/explain.
- Why was BMI, albumin and other potential confounders (that might predict extent or severity of disease) used in analyses?
- Figure 1 needs error bars
- Figure 2 is a repeat of table 4 – are both needed?
- Why do some groups (e.g. HIV-, PTB+) get transient increases in CD4 counts? Need to discuss and put in context of the immunology literature

Major Compulsory Revisions (which the author must respond to before a decision on publication can be reached)

- Rewrite results and discussion to read and flow better. Suggest taking HIV neg the HIV + then HIV + ART in that order.

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 consider I have no competing interests in reviewing this article. However, in the spirit of transparency I declare that I am employed by and hold stock in GlaxoSmithKline R&D Ltd.