Reviewer's report

Title: Outcome correlation of Smear-positivity but Culture-negativity during Standard Anti-tuberculosis Treatment in Taiwan

Version: 1
Date: 31 October 2014

Reviewer: Harriet Mayanja

Reviewer's report:

- Major Compulsory Revisions - NONE

This is a well written paper looking at clinical outcomes among patients treated for tuberculosis who remain smear positive, yet culture negative during treatment follow-up.

MINOR ESSENTIAL REVISIONS

1. The background is clear, highlighting prior literature as well as well stated study objectives.

2. Definition of treatment failure needs to be included in background.

3. Initially unclear at what time point SPCN was looked at, as the different treatment time points have different implications, Authors could for example specifically state out right that they looked at Months 2, 5, 9 and post treatment. This is alluded to in the literature review of 2 studies in Taiwan and Cameroon (lines 65 to 71). Line 134, generally states that SPCN was seen in 13.9% patients "during treatment", but different times have different implications. This is later better brought out in results e.g. in line 175, and discussion lines 228-230, but could be included in methodology.

4. Its unclear whether by standard of care, all SPCN were given longer treatment, or only depending on other factors eg cavitation. Was this prolonged treatment by protocol, or physician choice, or standard of care. At what SPCN time was the decision made to prolong therapy? Was there a difference in outcome between those on standard treatment compared to those with prolonged treatment, assuming these were two different groups.

5. Table 3 - it's interesting that many patients were on second line treatment. This does confuse the picture. Its initially assumed that all patients were on first line treatment (Line 81... new pulmonary TB cases.....), but table 3 suggests otherwise.

6. Discussion, lines 228 to 231 rather unclear to the reader, and could be confusing. May be better to revise; e.g. in line 229 "...but only 6.8% (54/800) have culture -positive....", or "...but only 46.6% (54/116) of these have culture -positive....".

7. Discussion lines 238-241 - of note culture is not always available, and many clinicians use smear results at month 5 to predict treatment failure. I assume this is an important issue that this study addresses, and needs to be clearly brought
out, and culture requirement then cannot be emphasized as a requirement for evaluating responses to therapy.

8. Lines 265 to 267 may need revision. Already it's known and implemented in many countries that treatment is prolonged in cavitating TB, which in this study is related to SPCN. Also culture not always available. Thus the last sentence may not be a generalizable practical option in many care centers.

9. Figures - Figure 2 may not add a lot of information, Text could suffice. Figure 3A - correct key from SPNC to SPCN. Also wonder if this figure necessary - I do not seen to see the text referring to this figure, although the information is captured in results and discussion sections.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

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

Declaration of competing interests:

'I declare that I have no competing interests'