Reviewer’s report

Title: Prevalence and risk factors for drug resistance tuberculosis in northeastern China

Version: 1 Date: 20 October 2013

Reviewer: Eiman Mokaddas

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Major Compulsory revisions:

Abstract:
In the abstract the objectives were not mentioned at all. It need to be spelled out clearly as the abstract is the summary of the whole study.

Background:
The author had mentioned the incidence of TB as crude number (1 million case in 2011). It would be more useful to mention the number of cases per 100,000 population as this can tell the magnitude of the problem in relation to the population density.

Materials and Methods:

1. The authors mentioned about the extensive questionnaire that was established to classify patients as new or previously treated TB cases. The questionnaire need to be displayed in detail with all the questions that have been asked to stratify the 2 groups. This is vital to the methodology especially when the authors considered one of the major drawbacks of the study is the poor discrimination between new and re-treatment with great chances for overlap.

2. The definition of new and pre-treatment was based on no treatment or treatment for less or more than 1 month. References for the 1 month issue as a cut off value need to be provided.

Strain Identification and drug susceptibility test:

1. The name of the manufacturer and the country of origin of the LJ media need to be mentioned in detail

2. In the second sentence it was mentioned: culture positive strains were used for strain identification and DST. This is topographically wrong. In stead it should be mentioned that all the MTB isolates from positive culture were identified and subjected to DST (please change the wordings)

3. Manufacturer pany of PNB and country of origin need to be mentioned

4. The detail of the incubation temperature and duration need to be mentioned

5. The same applies for the DST (DETAILS OF THE INCUBATION ATMOSPHERE NEED TO BE MENTIONED)
6. As per reading the DST in each LJ media with the specific drug concentration, the authors mentioned that the growth rate should be at least 1% on specific drug LJ medium compared to no drug LJ media. Here the 1% issue is not clear. How this is judged when reading LJ media. Details on the methodology of reading the susceptibility LJ media is needed. If not clarified this will create great confusion for the readers.

7. Again the authors mentioned that strain isolatin, identification and DST were performed in the hospital mentioned without detailing the time that was taken to get the positive isolates and if any automated system was used. This need to be spelled clearly.

MDR and XDR:

The definition of XDR is incorrect as the author had mentioned the 2 second line anti TB drugs that were used in their series. The real definition is that XDR is MDR plus resistance to one of the injectable anti TB drugs and any of the other oral second line groups such as quinoloes, macrolides etc...Please revise and mention the reference.

Results:

Bacterial strains and patient characteristics

1. The statistical significance for included and excluded groups is redundant and has no meaning in the display of results.

Prevalence of resistance to anti-tuberculosis drugs:

1. In fact all the numbers for the different resistances are % of resistance and not real prevalence. Thus the title should be the percentage resistance

Factors associated with MDR-TB:

1. The authors mentioned that their was a statistically significant difference between female and males MDR cases. The question is since female were less than 25% of the population studies but still are the highest in % MDR, was that investigated again to look more closer to what other factors could have contributed to the higher % resistance in females apart from the assumption mentioned in the discussion that females are usually the cares for TB patients weather in household or hospital settings. If not done then need to mentiomn it

Discussion:

1. The first paragraph is redundant (remove)

2. More literature need to mentioned in discussing the different results such as pretreatment v.s. new cases (both within China and internationally)

3. More literature need to be involved in discussing the different risk factors as well as the % resistances among different patient population

4. In no where the details of patients includin the presence of comorbidades was mentioned (except HIV as a shortcoming of the paper)

As per the limitations again as I have mentioned earlier, the classification of new v.s. retreatment was not clear as the questionnare mentioned in the methodology
was not displayed in the script

Minor Essential Revisions:
Many spelling and topographical mistakes need to be corrected
The name of the bacteria Mycobacterium tuberculosis need to be written always in italic

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, but I do not feel adequately qualified to assess the statistics.