Reviewer's report

Title: Characterization of extensively drug-resistant Mycobacterium tuberculosis isolates circulating in Siberia

Version: 4 Date: 8 January 2014

Reviewer: Duncan Chanda

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BMC Review Dymova et al
A potentially good piece of work that adds to understanding of MDR/XDR epidemiology in the region and the comparative use of two molecular epidemiological tools

I propose minor essential revisions is line with the following observations:

Major
1. What is the study design? Observational prospective cohort or retrospective cohort study? Was it a clinical study with clinical and laboratory data prospectively collected? The authors should clearly state the kind of study design in order to put the findings in context. Refer to further minor observations below on the same subject

Minor essential observations
1. Line 137 to 154 describe clinical events where as the methodology suggest “samples randomly selected”…earlier on line 79-80 makes reference to consent being obtained. Is this a prospective or retrospective study? From whom was the “consent obtained”

2. Sentence from 157 to 161 needs revision. What is the relevance of mentioning the death? This is not an outcomes study. Is this the only death that occurred

3. Description of TB, I would recommend “tuberculous pneumonia” instead of cheesy pneumonia which is not standard English. (Line 141) This can be confused with caseous granuloma or cheesy granulomatous lesions-found at post mortem. My understanding of “cheesy pneumonia “ in this context is pulmonary tuberculosis. Is this what he authors are trying to portray? Then they should state so or use one of the standard word.

4. Some sentences need revision or recasting and some are ambiguous or not clear:

4.1. In the Abstract line 20-21: “The purpose of this study was to identify mutations in drug resistance genes and conduct drug susceptibility testing on clinical isolates of M. Tuberculosis from TB patients from Siberian”. I suggest the sentence to be recast as “The aim of this study was to conduct drug susceptibility testing and identify mutations in drug resistance genes in clinical isolates of M. Tuberculosis from some TB patients presenting for treatment in
Siberia”…This is because the aim is to identify MDR/XDR TB and THEN find associated genes.

4.2. Under Introduction line 55 the sentence “The cause of XDR TB isolates…” the term “isolates” should be dropped from the sentence

4.3. Under Sample Description in line 149, there is reference to “Destructive changes in lungs…were detected radiologically”. Since these changes are radiological the term “lesions” to cover opacities, cavitations etc would be more appropriate than “Destructive changes…” AND line 150 make reference to “Tuberculous decay was not detected in one patient…” What does the term “Tuberculous decay ..” mean in this context.

4.4. In line 152, there is reference to “Bacterial excretion…” being microbiologically confirmed. This sentence is ambiguous. Normally excretion is a physiological process implying expelling of toxic products from the body through the GIT? Is this the meaning? This needs clarification.

5. Line 157-161 make reference to “continuous flow of recurrent tuberculosis” The sentence is ambiguous and must be revised

**Level of interest:** An article of importance in its field

**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.

**Declaration of competing interests:**

I declare that I have no competing interests