Reviewer's report

Title: Treatment outcome of tuberculosis patients in northwest Ethiopia. A five-year retrospective study.

Version: 1 Date: 7 June 2009

Reviewer: Bernt Lindtjorn

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The authors review outcomes of tuberculosis treatment in Gondar in North-West Ethiopia. They analyse the records in a hospital's tuberculosis unit. Such studies are important, and provide important feedback for tuberculosis control.

The authors write: “However, treatment outcome of tuberculosis patients has not been assessed yet in northwest Ethiopia”. I suggest the authors do a literature search and add more references. Over the years, many studies were done in Gondar and in North West Ethiopia. Particularly, the studies by H Getahun, and M Demissie are important for tuberculosis control.

The study is based on hospital data. The authors reviewed the tuberculosis registries. Did they also review the patient charts?

Patients coming to hospitals, especially in countries with limited health service coverage, are always selected (a systematic error, bias). This is seen from their data in that about 50% of the patients come from towns, whereas about 15% of the population lives in urban areas. The large number of patients transferred out shows that many patients came from areas far from Gondar.

I advise the authors change the title. This is not a study about tuberculosis in North-West Ethiopia. It is a study about tuberculosis patients coming to a University Hospital.

I lack a thorough discussion of the limits in this study. Selection bias is present in such data, and the authors need to discuss this limit. I believe that by discussing the limitations of the study, the authors will better communicate the challenges that institutions as Gondar face. Might be the authors should discuss how the tuberculosis work at a University unit should be integrated with the national control efforts?

Only 16.8% of the patients were smear-positive sputum positive. The proportion of smear-positive cases in a tuberculosis control programme is often used as a quality measure of the control work. The smear-positive rate in Gondar is low, and makes me question the diagnostic setup at Gondar Hospital. How is the quality of their sputum examinations? Are sputum tests routinely done at the hospital? The large number of smear-negative pulmonary tuberculosis is also an issue the authors need to discuss.

The authors include children in their study. Which criteria did they use to define
tuberculosis in children? The authors should also refer to earlier studies on paediatric tuberculosis at their hospital. These paediatric patients are probable also included in the 4000 patients they report. See Ethiop Med J. 2007 Apr; 45(2):159-63

The authors write that a patient with smear negative Pulmonary TB could be culture positive for M. tuberculosis? Is this a correct definition? If the hospital did not do cultures, the authors should use definitions appropriate to their setup.

The authors write that they used the Ethiopian National TB Guidelines, “with some modifications”. They should tell he readers what these adjustments were.

The authors did not mention HIV. Were patients not HIV tested? How many were on ART? In an important article in J Microbiol Immunol Infect. 2007; 40:116-122, Kassu A and colleagues report that over 50% of TB patients were co infected with HIV in Gondar. This issue needs to be discussed.

Although the author’s conclusion is well-balanced, the discussion part of the article is weak. The authors should not repeat their results. They should discuss the limits of their work, how their findings compare with earlier research in North-West Ethiopia, in Ethiopia and globally. They should also answer the question on what the implications of this study are.

The authors should also look at the way they present their results. It might not be necessary to repeat the results in the text when they are presented in a table.

On page 9 they write: “The number of smear positive pulmonary tuberculosis cases, smear negative pulmonary tuberculosis cases and extrapulmonary tuberculosis cases did not significantly increase (p=0.48; CI: 0.47 -0.49). What does 0.47 -0.49 mean?

I advise that both the Crude OR and adjusted OR be presented in table 4. What did the authors adjust for?

**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, and I have assessed the statistics in my report.

**Declaration of competing interests**: 'I declare that I have no competing interests