Reviewer's report

Title: Risk factors for poor tuberculosis treatment outcome in Finland: a cohort study

Version: 1 Date: 1 June 2007

Reviewer: Andrew C Hayward

Reviewer's report:

This is valuable and original piece of research which is certainly worthy of publication. There is very little previously published work on outcomes of TB management in low incidence countries or analyses of risk factors for poor outcome.

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

There needs to be some discussion of the generalisability of the findings. Finland is unusual in that very little of the TB is in migrants, I also suspect that homelessness, imprisonment and drug use are not major issues in Finland and that relatively few TB patients have these risk factors. The authors have combined unemployment, imprisonment, homelessness and drug use into a single category so it is not possible to tell how important these factors are. They report no association between social risk factors and outcome which is likely because their social risk factor group is dominated by unemployment rather than more extreme social issues. In our recent analyses in London we have found imprisonment, drug use and homelessness to be the most important predictors of poor outcome. Story A, Murad S, Verheyen M, Roberts W, Hayward AC. Tuberculosis in London - the importance of homelessness, problem drug use and prison. Thorax. 2007 Feb 8; [Epub ahead of print] It is important to make the point that whilst these social issues are not a major issue in Norway they are important in other settings. The findings about service size and speciality may also not be generalisable outside of their setting. In London we certainly find that smaller centres cannot cater well for the needs of ethnically and socially diverse populations as they are less likely to be geared up to give directly observed therapy, provide interpreters or help to deal with complex social issues. The authors should therefore qualify their statement about centre size to make it explicit that this finding is relevant for low incidence countries with relatively little TB associated with immigration, homelessness, drug use and imprisonment but may not be relevant for other settings.

Most of the results are highly statistically significant but given the large number of significance tests carried out I would advise against overinterpreting factors that are associated with poor outcome. I do not think formal bonferroni corrections are necessary but the authors should be aware that p values that are relatively close to 0.05 could well have occurred by chance. For example the apparent lower risk of death in those with previous TB p=0.044 is likely to be a chance finding.

In the abstract conclusions it is not apparent why high death rates in immunosuppressed and elderly patients suggets the need for low thresholds of suspicion, rapid diagnostic tests or early empiric treatment. I the authors had demonstrated that the higher death rates in these groups were due to diagnostic delay this might be a valid conclusion but diagnostic delay was not examined.

I think some of the risk factors examined may also have formed part of the outcome definitions (e.g. short treatment is presumably the same or highly similar to "default" or to "physician stopped treatment early" which form part of the unfavourasble outcome definition) - also short treatment is inevitable if you die early in the course of disease so will inevitably be associated with death - this could account for the very high odds ratios seen - short treatment should therefore not be included in table 3

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Discretionary Revisions (which the author can choose to ignore)

What next?: Accept after minor essential revisions
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'