Reviewer’s report

Title: Recurrent tuberculosis in Finland 1995-2013: a clinical and epidemiological cohort study

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Reviewer: Troels Lillebæk

Reviewer’s report:

Overall, "Recurrent tuberculosis in Finland 1995-2013: a clinical and epidemiological cohort study" is a comprehensive population-based retrospective study providing useful data on TB recurrence in a low incidence setting. Some comments that might improve the manuscript:

General:


Specific comments:

Abstract:

You write; "Because of a growing proportion of tuberculosis (TB) cases in immigrants and increasing drug resistance of Mycobacterium tuberculosis in Finland, we investigated the epidemiology and risk factors of TB recurrence in a population-based registry cohort of 8084 TB cases between 1995-2013." Comment: I do not see why immigrants and drug resistance are used as arguments for looking into recurrence? Perhaps provide a better intro. First of all, you relate recurrence to initial therapy given for episode 1 and the treatment outcome.

The abstract is rather "talkative". I can be reduced and appear more sharply and accurately. Just an example, you write: "The rate of TB recurrence, after careful validation of the register data, was low despite the absence of a comprehensive DOT (directly observed therapy) policy. The first two years after a TB episode have a particularly high risk for recurrence. The observed premature discontinuation of treatment calls for improved training of the physicians." Could read: "In Finland, the rate of recurrent TB was low despite no systematic directly observed therapy. The first two years after the initial TB episode had the highest risk for recurrence and the observation of premature treatment discontinuation in nearly one fourth recurrent cases calls for improved training of physicians."
Background:

Fine intro in Background, but a bit vague finish when you write: "The aim of the present study was to investigate in a national, population based cohort the occurrence of recurrent TB in Finland during the years 1995-2013, and the factors affecting the risk of recurrence, in order to strengthen the TB treatment program in the changing epidemiologic environment." Write more sharply and accurately what you investigate and why? First of all, you relate recurrence to initial therapy episode 1 and treatment outcome. See also general comment.

Methods:

You write: "Data on anatomical site of disease (pulmonary/extrapulmonary), radiological, histological and microbiological results, TB diagnosed before 1995, immunosuppressive diseases and medication, substance abuse, exposure to TB, travel to high TB incidence countries, the drug regimen in the first episode, adverse effects and adherence to treatment were extracted from patient charts." Where these data available for all cases? If not, specify for each category the availability. In my experience, these data are not recorded systematically in patient charts, but may be different in Finland. Also, do you actually use radiological?, histological?, immunosuppressive diseases, exposure to TB, and travel to high TB incidence countries? Leave out if not used or available.

Results:

You write: "A history of substance abuse, mostly alcohol, was registered in the patient records in at least one TB episode of 59% of males and none of females; 49% of males had substance abuse recorded in both episodes." How about the rest? No abuse or no information?

Discussion:

You write: "We investigated the epidemiology of and risk factors for recurrent TB in Finland in a comprehensive national, register-based cohort of 8084 TB cases from 1995 to 2013, with full clinical data on recurrent cases, …" Again, I am not really sure how much you analysed risk factors. You mention several in the methods, but how many did you actually analyse? For how many did you have complete data? Due to the retrospective design and missing data I don't think you can write you analysed risk factors - but perhaps some specific risk factors with complete or nearly complete data.

You write: "Patient chart review revealed that in nearly one fourth of the recurrent cases, the physician had discontinued the treatment of the first episode prematurely." This is an interesting and important finding, but you do not really discuss why? Can you explore this point further?
You write: "Just over one half had a successful outcome according to WHO criteria". This is low, you write it has changed the later years, could be explored.

Conclusions:

You write: "In the absence of a comprehensive DOT strategy, and with an increasing proportion of cases with foreign origin, the rate of TB recurrence was found to be low compared to most other low-TB-incidence countries." Why the connection to foreign origin - should not necessarily be connected to relapse - perhaps even greater awareness on TB in this population segment?

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

Yes

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

Unable to assess

**Are the conclusions drawn adequately supported by the data shown?**
If not, please explain in your comments to the authors.

Yes

**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

Not relevant to this manuscript

**Quality of written English**
Please indicate the quality of language in the manuscript:

Needs some language corrections before being published

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