Reviewer’s report

Title:HIV prevalence in tuberculosis patients in Israel, 1999-2011: A retrospective cohort study

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Reviewer:Richard Long

Reviewer’s report:

The authors have reported the results of a cross match of the National TB and HIV Registries in Israel. The study covers the period 1999-2011 and is descriptive in nature. Unfortunately, there are some quite serious limitations with the data as presented and the analysis. These are summarized below.

Major:

1. The HIV Registry appears to be a Registry of all laboratory proven cases of HIV/AIDS. It would not appear to include those that were HIV tested and negative. The average estimated HIV testing coverage of TB patients during the study period is reported to be very high (88.4%). The reference for this is a TB surveillance and monitoring report in Europe. What is not known is the date of the HIV test relative to the date of diagnosis of TB. Can the authors indicate whether the positive HIV test result was reported before or during treatment of TB? The HIV co-infection rate was remarkably low in 1999. Was this because testing coverage was very low that year?

2. Since the HIV co-infection rate is very much dependent upon the country-of-birth of new immigrants, it is quite conceivable that any trend in HIV co-infection rate of TB patients relates to the relative contribution of arrivals from high vs low HIV prevalence countries over time. Are the authors able to relate their trend in HIV co-infection rates to trends in country-of-birth of new arrivals?

3. The authors have compared HIV positive to (presumed) HIV negative TB cases using chi-square and Student's-t test for categorical and continuous variables, respectively. This limits any conclusions that might be drawn from the analysis. For example, it appears that HIV positive cases were more likely to be culture-positive because they were more likely to be adults (>17 years of age - children being much less likely to be culture-positive). Likewise, HIV-infected cases were more likely to die during follow-up (we are not told how a TB death was defined - the follow-up period was reported to last from January 1, 1999 until December 31, 2011) but since most HIV co-infected cases were foreign-born from high HIV prevalence countries and those same countries could have high MDR-TB prevalence rates, it is not clear whether death is related to HIV or MDR-TB. Thus, it is not possible to know whether HIV is an independent risk factor for TB death. Odds ratios with 95% confidence intervals would be better.

4. Since only 9 of 254 TB cases were younger than 18 or older than 64 years of age (3.5%), it may be better to restrict their comparison of HIV positive to HIV
negative TB cases to the age group 18-64 years.
5. The authors disease site analysis does not include cases with both pulmonary and extra-pulmonary disease. Many HIV co-infected TB patients would be expected to have both.

**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:**

no competing interests