Reviewer's report

Title: Risk factors for latent tuberculosis infection in close contacts of active tuberculosis patients in South Korea: a prospective cohort study

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Reviewer: Hua-Chang Fang

Reviewer's report:

This work was done to investigate the risk factors of contracting latent TB infection in contacts of active TB patients. The authors claimed they prospectively collected the contacts of active TB patients and did the TST and/or QFT-G to detect latent TB infection. The quality of data is not compatible with a prospective study. As mentioned by the authors, there are limitations of the study so that the data are not sound enough to make more contribution to the field. Specific comments are listed as follows:

Discretionary Revisions

1. In the method section of this manuscript, the authors did not mention how to collect the subjects who had contact with active TB patients. It is better to define the target subjects who would be investigated. Therefore, the completeness of collection of the target subjects can be assessed. There are also some points can be done better in a prospective study: 1) only part of the investigated subjects received both tests; 2) both tests were not done according to a standard protocol to exclude test interaction, though reason not interfering the result proposed.

2. In a previous large-scale study (JAMA. 2001 Oct 10;286(14):1740-7), the multivariate analysis revealed that the odds of having a positive TST result but negative IFN-gamma assay result were 7 times higher for BCG-vaccinated persons compared with unvaccinated persons. The report concluded the IFN-gamma assay was less affected by BCG vaccination compared to TST. However, in your multivariate analysis BCG vaccination did not seem to predict a positive TST. The reason as mentioned in your discussion is that most close contacts (94%) of TB infection patients were BCG-vaccinated so the test power is weak. Other risk factors of interest analyzed in the study such as sputum smear status of source case and cough of source case were not shown to predict a test result (TST and IFN-gamma assay). Again, the weak statistical power of the study is supposed to be responsible.

Level of interest: An article of limited interest

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.
Declaration of competing interests:

I declare that I have no competing interests