Reviewer's report

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

Version: 2

Date: 13 November 2013

Reviewer: Paolo Durando

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In this paper, Lee and colleagues aimed to assess the prevalence and the predominant risk factors of contracting LTBI in close contacts of active pulmonary TB patients who visited the Gyeongsang National University Hospital, Jinju, in South Korea. Moreover, the study aimed to compare the efficiency of TST and QFT-G for LTBI surveillance. Prevalence of LTBI resulted high and Authors' conclusions suggest that prior TB history and being a household contact were the predominant risk factors in the target population.

Major Compulsory Revisions

Some items addressed in the article need to be improved and some others have to be further clarified.

The first is to provide a clear definition of the inclusion/exclusion criteria for study entry. For example, those with a history of pulmonary TB were included in the study population: please, provide the reason for this choice. Moreover, give further information concerning both the duration of exposure (4 hours per week) and the method used for its measurement.

The second refers to the flow-chart for the screening and diagnosis of LTBI: more details need to be given concerning the Korean guidelines comparing them with other international guidelines. Moreover, no specific criteria were used for the screening of LTBI throughout the study population (someone was tested by TST, someone was evaluated using IGRA and some others underwent both the methods,...).

The third is to clarify why and how the data presented in this study were acquired from another multi-center research; were the objectives investigated in the present study foreseen in the original protocol approved by the local IRB?

Moreover, the study needs to be carefully reviewed through all the manuscript with respect to the proper use and choice of some references.

Minor Compulsory Revisions

ABSTRACT:

Page 2 lines 38, there is an error in the calculation of the percentages, please verify it. The total of TST positive is incorrect, please correct in this way “Of 308 subjects, 38,0% (116/305) were TST positive”.
BACKGROUND:
Page 3 lines 52-53: reference [1], please cite an update article in the reference and use more recent data in the sentence, according to Global Tuberculosis Report 2012. WHO.
Page 3 lines 62 – 64: references [3,4], please provide other recent International references to support the correct statement in the text.
Page 3 lines 65 – 68: the sentence is not clear. Please rephrase it.

METHODS:
Page 4 lines 80 – 81: please cite an appropriate reference to support the content of the text.
Page 4 line 87: please verify the period of exposure (4 hours per week) to AFB smear-positive and/or culture positive active pulmonary TB patient, according to international guidelines.
Page 4 lines 91 – 92: please use the term “potential risk factors”.
Page 5 line 101: please verify the dosage of intradermal injection.
Page 5 lines 102-103: please, give more details why you used 5 mm and not 10 mm as the induration cut off for positive TST cases.
Page 5 lines 112-113: please use the term “potential risk factors”.

RESULTS:
Page 6 line 124: please give more details about definition of “close contacts”.
Page 6 line 127: the results are different from those reported in the abstract. Please verify it.
Page 7 lines 150-159: Please rephrase this paragraph with less details; the numbers have been already outlined in Table 3.
Page 7 lines 161-166: Please explain in more details the flow-chart used for the screening and diagnosis of LTBI.
Page 7 line 164: In this study, 11 subjects resulted QFT-G positive and TST negative. Please, give a possible explanation for this result in the discussion.

DISCUSSION:
Page 7-8 lines 170-172: the patients with a history of TB had to be excluded from the study. Lack of a basal TST and/or QFT-G has to be considered in subjects with household contact.
Page 8 line 179: Please verify the percentage reported in the sentence.
Page 8 lines 180-182: Please check reference [11], maybe it is not appropriated.
Page 8 lines 183-187: this sentence refers to a study with a very small number of subjects. Please change reference [14] with a more appropriate.
Page 8 lines 192-197: please rephrase this paragraph.
Page 9 lines 198- 205: the gender differences in subjects with LTBI were not relevant in this study. Please rephrase this paragraph with less details on this

issue.
Page 9 lines 209-210: please, comment this sentence in more details: IGRA is a
gold standard test in the diagnosis of TB infection in individuals with TB history.
Page 9 lines 212-215: reference [21] is not appropriate, please change it.

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

Paolo Durando has no relevant affiliations or financial involvement with any organization or entity with a financial interest in or financial conflict with the subject matter or materials discussed in the manuscript.