Reviewers report

Title: Predictors of persistently positive Mycobacterium-tuberculosis-specific interferon-gamma responses in the serial testing of health care workers

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Reviewer: Jae Chol Choi

Reviewers report:

Overall, only small studies evaluated the reproducibility of IGRA during serial test. Although the previous data suggest that spontaneous conversions and reversions can potentially occur during serial testing, your data is also certainly merit reporting.

According to your result, 33.3% of HCWs showed reversion of the result. Then, how could you conclude that QFT-GIT proved to be feasible for the serial testing? The conclusion should be changed. In your results, 41 of 44 (93%) who were positive of TST (10mm+) showed consistent results after serial testing. On the contrary, reversion was occurred frequently in TST negative population (5 of 6 HCWs). Several countries (e.g. Canada, UK, Italy, Germany, Switzerland, Netherlands, Korea and Norway) recommend a two-step approach of TST first, followed by an IGRA. When we adjust this recommendation for screening of HCWs, in TST+/IGRA- cases, serial test of IGRA is needed. Considering your result, IGRA could be used as a useful tool for serial test in HCWs who showed positive baseline TST. Furthermore, in TST-/IGRA+ cases, the possibility of false negative result of IGRA should be considered especially when the result showed a borderline zone. I thought that this is an important finding for clinical implication.

The interval between both QFT-GIT was too variable. May be you should mention the reason of variability of the duration.

Prior TST could show boosting effect depending on the time. I want to know the time of prior TST in case which showed reversion. Baseline IGRA result could be influenced by the prior TST.

Limitation paragraph: You mentioned in the discussion, prior TST could show boosting effect. Previous data suggested that the time interval is important. In your cases, 3 of HCWs showed conversion but they performed follow-up IGRA at 17 to 54 weeks interval. Therefore, it might not be the boosting effect by prior TST. I think that the paragraph of limitation must be changed.

Last paragraph of discussion

“One should bear in mind that neither LTBI nor active TB can be completely excluded by a single or even repeated negative IGRA results” – how could you conclude this findings? due to 3 of conversion cases? It’s too small numbers to
conclude this finding.

Table 1; describe the abbreviation of QFT-GIT

**Level of interest:** An article whose findings are important to those with closely related research interests

**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