Reviewer’s report

Title: Sub-clinical abnormalities detected by PET/MRI in household tuberculosis contacts

Version: 0 Date: 27 Nov 2017

Reviewer: Robert Gie

Reviewer's report:

Dear Authors

This is a very interesting subject that the authors are investigating. In my opinion what the authors are investigating is subclinical TB. There have been a number of articles suggesting this entity exists. Diagnosing subclinical would be important in low burden countries with good tracing and investigation utilities as early treatment can be instituted preventing the development of infectious cases. The definition of subclinical Tb is not well established. To begin to understand this entity we need studies with well established timelines, from onset of exposure, to onset of symptoms (or lack of symptoms) to the performance of the high tech investigations. This article has the possibility to help understand subclinical TB if these timelines can be tightened.

Main suggestions:

1. That case 28 ( images F) be removed from the analysis as this patient clearly had previous TB with upper lobe scarring which was not previously treated. This may not fit the present definition of subclinical TB.

2. The the time between exposure and investigation should be limited. At present the time of investigation is stated to be 3 months but varies from 22-752 days. The data might be very interesting if those with a short time from exposure to investigation are compare to those with a longer time. Although the number studied is limited ( n=30) the results might suggest interesting findings.

2. Similarly the IGRA was only positive in 12/30 cases and in 7/12 cases with an abnormal PET scan. Is there a possibility that those with an abnormal PET scan and negative IGRA were the patients with a short time between exposure and investigation and secondly that the abnormal PET scan proceeded the IGRA result.

In my opinion by thinking of reporting the results exploring the time of exposure and the relationship between the IGRA results and positive PET scans could contribute to the understanding of subclinical TB and contribute significantly to the body of literature.
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.

No

Are the conclusions drawn adequately supported by the data shown?
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Yes

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I am able to assess the statistics

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