Reply to Yates and Barr

C Ugarte-Gil[1,2,3],
F Pearson[4],
D Moore[3,5],
J Critchley[4],
R van Crevel[6]

1. School of Medicine, Universidad Peruana Cayetano Heredia, Lima, Perú
2. Department of International Health, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, USA
3. TB Centre, London School of Hygiene and Tropical Medicine, London, United Kingdom
4. Population Health Research Institute, St Georges, University of London. United Kingdom
5. Laboratorios de Investigación y Desarrollo, Universidad Peruana Cayetano Heredia, Lima, Perú
6. Department of Internal Medicine and Radboud Center of Infectious Diseases, Radboud university medical center, Nijmegen, the Netherlands

Corresponding Author: Dr Fiona Pearson, fpearson@sgul.ac.uk

Dear Editor:

Thank you for your interest in our work and your valuable comments.

In this paper we are not attempting to assess the extent to which dysglycaemia is causally associated with tuberculosis (TB). A number of prospective studies exist, amongst a body of evidence, supporting probabilistic causation between diabetes mellitus (DM) and TB.[1, 2] Rather, the aim of our study was to identify age-adjusted prevalence and clinical characteristics of DM and intermediate hyperglycaemia (IH) amongst those with newly diagnosed TB across four TB-endemic settings. In our South Africa population the prevalence of DM (10.9% (95%CI 7-14.9)) was the lowest across all four study sites. However, as the smallest site uncertainty around this estimate is greatest and the prevalence estimate was shown to increase after age standardization.

Drs. Yates and Barr would like us to provide additional data regarding dysglycemia during and after tuberculosis treatment to indicate the likelihood of DM amongst TB patients being transient. In our manuscript only one-third of the described TB patients with DM were newly diagnosed; the rest had a prior DM diagnosis. In table 4 the median lab HbA1c for new DM patients is 8.0 (IQR= 6.8-11.7) and the repeated HbA1c is 6.9 (IQR= 6.5-12.4). Looking at lab HbA1c data from 6 months after baseline 13.8 % of TB patients with newly diagnosed DM and 9.8% of patients with previously diagnosed DM had an HbA1c <6.5%.

Drs. Yates and Barr also ask for more data regarding the distribution of dysglycemia. In previously published work[3], we present distributions of laboratory-measured HbA1c for newly-diagnosed pulmonary TB patients with no DM diagnosis and newly diagnosed DM (but not historically diagnosed DM) by country. Indeed, the degree of dysglycemia is relevant in terms of TB susceptibility[4] and outcome[5].

We plan on analyzing HbA1c and glucose trajectories over time, and in relation to DM treatment and TB outcomes with the intention to publish in full. In this published work we chose to present dysglycemia in aggregated discrete categories to enable comparison of groups of patients in terms of their demographic and clinical characteristics. However, we are aware that in aggregating HbA1c any information about the details of a non-linear relationship will be concealed[3] and that any potential non-differential errors could be leading to differential misclassification. This is certainly a point for further consideration in any future analyses.

The authors declare no relevant conflicts of interest.

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