Diabetes in active tuberculosis in low-income countries: to test or to take care?

Tuberculosis and diabetes are a topical example of an association between communicable and non-communicable diseases. These diseases are mutually linked, increasing each other's complications, making diagnosis and management more difficult and worsening disease course and outcomes. Furthermore, each disease is a risk factor for the occurrence and exacerbation of the other.[1]

In their Article in *The Lancet Global Health*, Jean Jacques Noubiap and colleagues[2] highlighted that the global prevalence of diabetes among patients with tuberculosis is almost twice as high as that reported by the International Diabetes Foundation, which predicted a 2017 prevalence of both of 8·8% in the global adult general population.[3] However, Noubiap and colleagues concluded that screening for diabetes in patients with tuberculosis might be recommended in high-income settings whereas, in low-income countries, where the prevalence of diabetes is lower and fewer health-care resources are available, more studies are needed, to determine the most systematic approach for diagnosis.[2] In Mozambique, we have found a low prevalence of diabetes in people with active tuberculosis,[4] but we firmly believe that the development of a systematic approach to treat non-communicable diseases, particularly diabetes, in low-income countries is urgent and necessary. However, it would be too simplistic to use a single blood glucose test as a screening method without considering other factors, such as education, the availibility and skills of health professionals, context, and social aspects. First, education is crucial for patients dealing with chronic diseases, such that they understand the importance of efficacious and regular prevention and therapy. Moreover, the dearth of qualified health workers and the excessive workload that these staff have prevents adequate patient–doctor communication, further limiting the wellbeing of the patient. Notably, the community and the traditional healers in low-income countries have a crucial role in the health system, making it necessary to develop collaborative systems, possibly involving traditional healers as entry points for the community. Community awareness regarding facts and myths of tuberculosis and diabetes might also be important, since discrimination and stigma can substantially affect general health and social life. Finally, particular attention should be paid to social determinants of health that affect health inequities, and which can have an immediate effect on health. Indeed, in light of these considerations, to solely perform systematic blood glucose tests in patients with active tuberculosis, especially in low-income countries, seems inappropriate not only in terms of health expenditure, but also because of the poor efficacy that this approach would have. It is crucial and urgent that we treat non-communicable diseases in patients with tuberculosis. Although fasting blood glucose tests should be done in patients with active or suspected tuberculosis who present with risk factors for diabetes, it is our duty to care for all patients with tuberculosis, not only in terms of their tuberculosis diagnosis, but also with consideration for their increased risk of diabetes (and other non-communicable diseases). In conclusion, screening for diabetes in patients with tuberculosis should be considered in low-income countries, and it should be done in an integrated, culturally-sensitive, social determinant-driven manner.

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1 Faurholt-Jepsen D, Range N, PrayGod G, et al. Diabetes is a strong predictor of mortality during tuberculosis treatment: a prospective cohort study among tuberculosis patients from Mwanza, Tanzania. *Trop Med Int Health* 2013; **18:** 822–29.

2 Noubiap JJ, Nansseu JR, Nyaga UF, et al. Global prevalence of diabetes in active tuberculosis: a systematic review and meta-analysis of data from 2·3 million patients with tuberculosis. *Lancet Glob Health* 2019; **7:** e448–60.

3 International Diabetes Federation. IDF diabetes atlas. 8th edition. 2017. https://diabetesatlas.org/IDF_Diabetes_Atlas_8e_interactive_EN/ (accessed March 29, 2019).

4 Pizzol D, Di Gennaro F, Chhaganlal KD, et al. Prevalence of diabetes mellitus in newly diagnosed pulmonary tuberculosis in Beira, Mozambique. *Afr Health Sci* 2017; **17:** 773–79.