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Appropriate technology in tuberculosis diagnostics

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We would like to make three points in response to Alwyn Mwinga's Comment (Jan 8, p 97)¹ on our comparison of diagnostic techniques for tuberculosis in HIV patients with inadequate sputum production.²

First, the statement that the use of the string test “will be hampered by the need for sputum induction” seems to be a misunderstanding: sputum induction added nothing to the results of the string test and was used only as a comparative test for this research. In fact, our findings clearly show that the string test alone offers better diagnostic sensitivity than sputum induction. By obviating the need for sputum induction, it could remove an important risk factor for nosocomial transmission of tuberculosis, particularly in resource-poor settings with a high tuberculosis burden, no isolation facilities, and wards crowded with highly susceptible HIV-infected patients. We would therefore suggest that the string test should supersede sputum induction if these data are borne out in other settings.

Second, we believe that the string test might indeed have a potential role in the difficult diagnosis of paediatric pulmonary tuberculosis, and we have shown that the string test procedure is well tolerated by children with suspected tuberculosis as young as 4 years, and highly acceptable to their parents and attendant nursing staff.³ Such findings could open the way for a comparative efficacy study with other diagnostic procedures including sputum induction.

Third, we strongly concur with Mwinga's observations that the slowness of conventional solid media culture hampers tuberculosis diagnosis and that availability of specialist equipment marketed for more rapid liquid-culture-based techniques is limited. Fortunately, however, the liquid-culture method used in our research (the microscopic observation drug susceptibility [MODS] assay), which involves the simple microscopic observation of characteristic *Mycobacterium tuberculosis* colonies in broth, requires nothing more complex than an incubator and an inverted light microscope and standard laboratory consumables which are available widely.^{4,5} Detection of tuberculosis with simultaneous readout of rifampicin and isoniazid sensitivities takes a median of 7 days. At less than US\$2 per sample, we believe that MODS warrants more widespread use, especially in developing countries where most tuberculosis occurs.

References

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We declare that we have no conflict of interest.

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