A new algorithm for the diagnosis of all forms of tuberculosis is required for South Africa

To the Editor: I write in response to ‘Diagnosing Xpert MTB/RIF-negative TB: Impact and cost of alternative algorithms for South Africa’ published in the SAMJ in February 2013.1

Modelling the impact and cost of alternative algorithms is essential to guide policy decisions; however, the entire National GeneXpert MTB/RIF (GXP) diagnostic algorithm requires major changes, rather than variations based on cost alone.1 This algorithm is suggested for all TB suspects and ignores the epidemiology of the South African (SA) tuberculosis (TB) epidemic, where 39% of cases notified have extrapulmonary TB (EPTB) or are unable to expectorate (15% and 24%, respectively).2,3

Given the high burden of TB disease in SA, an initial GXP on all patients with a positive symptom screen for TB is appropriate, despite the cost of the test. However, if the initial GXP is negative, particularly in HIV-positive individuals, a history and examination should direct further management to diagnose and treat the cause of the patient’s symptoms. To continue blindly with the algorithm – especially the suggested X/X alternative where any other possible form of TB or other opportunistic infection is ignored – is poor clinical medicine.1,4 Testing large numbers of patients with a second GXP for a <3% positive rate is not economically prudent.

If the first GXP ‘screen’ in all symptomatic patients comes back negative, the algorithm should cover the non-TB pathology that may be causing the patient symptoms as well as the more common forms of EPTB. Examples of diagnostic pathways could be: (i) if the cough is prominent, presumptive antibiotics and second sputum for GXP; (ii) if dyspnoea or chest pain is predominant, a chest X-ray for pericardial and pleural effusion would be appropriate; (iii) significant lymphadenopathy on examination could proceed to a fine-needle aspirate (FNA) of a lymph node or empirical TB treatment with clinical follow-up where FNA is not available.

The diagnosis of TB in SA with our dual TB/HIV epidemic cannot rely on an algorithm that only considers pulmonary TB; nor can the diagnostic search for TB exclude the individual patient, their
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symptoms and the very high possibility of diseases other than TB. An algorithm that uses sputum GXP as a screen in all TB suspects is appropriate in the SA context. However, if the first GXP is negative, a comprehensive healthcare system demands that further algorithms, that address the patient’s major symptoms or signs, are developed.

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