

A role for mycobacterial blood culture and molecular analysis of lymph node tissue

Sir,

As tuberculosis ‘tops’ the list of treatable causes of pyrexia of unknown origin in the article by Bharucha et al (77(10), 2016, p. 579) (Table 2), the investigative strategy in the patient with pyrexia of unknown origin and lymphadenopathy (case 1) should have included mycobacterial blood culture (Chiu et al, 2007), and molecular analysis (using the Xpert nucleic acid amplification test) to detect *Mycobacterium tuberculosis* DNA in the fine needle aspirate from the lymph node (Maynard-Smith et al, 2014).

Mycobacterial blood cultures may be positive even in the absence of HIV coinfection, and also in the absence of coexisting immunosuppressive state or immunosuppressive drug use (Chiu et al, 2007), as shown in a review of the medical literature documenting 16 instances of *M. tuberculosis* bacteraemia in non-HIV patients during the period 1967–2004, where 36.4% of the patients did not have any underlying disease (Chiu et al, 2007). Indeed, outside the context of HIV coinfection, the full diagnostic potential of mycobacterial blood culture has yet to be realized.

In the context of evaluation of lymph node tissue (either fine needle aspirate or conventional biopsy specimen) a systematic review of seven studies showed that molecular analysis was characterized by pooled sensitivity for detection of *M. tuberculosis* which was 0.96 (95% confidence interval 0.72–0.99). Pooled specificity was 0.93 (95% confidence interval 0.70–0.99) (Maynard-Smith et al, 2014).

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Chiu Y-S, Wang J-T, Chang S-C et al (2007) *Mycobacterium tuberculosis* bacteremia in HIV-negative patients. *J Formos Med Assoc* **106**: 355–364. [https://doi.org/10.1016/S0929-6646\(09\)60320-X](https://doi.org/10.1016/S0929-6646(09)60320-X)

Maynard-Smith L, Larke N, Peters JA, Lawn SD (2014) Diagnostic accuracy of the Xpert MTB/RIF assay for extrapulmonary and pulmonary

tuberculosis when testing non-respiratory samples: A systematic review. *BMC Infect Dis* **14**: 709. <https://doi.org/10.1186/s12879-014-0709-7>

Sir,

We thank Dr Jolobe for his helpful correspondence on our review of current management of pyrexia of unknown origin.

We agree that mycobacterial blood cultures may have a useful role in diagnosis. However, bacteraemia, a manifestation of loss of control of replication of the organism within the granuloma, is uncommon in patients without significant immunosuppression (El Sahly et al, 2014). The cited retrospective study by Chiu et al (2007) involved 19 *Mycobacterium tuberculosis* bacteraemias from 6128 patients with a discharge diagnosis of tuberculosis. All the HIV-negative patients with bacteraemia had significant comorbidities, and were predominantly over 50 years old with disseminated tuberculosis.

We agree that polymerase chain reaction for tuberculosis, particularly using Xpert technology, has a high yield in patients with smear-negative, culture-positive pulmonary and extrapulmonary tuberculosis (Maynard-Smith et al, 2014). Clinical and histological features, however, often lead to presumptive treatment which is later confirmed by culture and full phenotypic or genotypic sensitivity testing and so the cost-effectiveness of routine polymerase chain reaction (which is not 100% specific) on tissue samples in settings of low endemicity has not been proven.

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El Sahly HM, Teeter LD, Musser JM, Graviss EA (2014) *Mycobacterium tuberculosis* bacteraemia: experience from a non-endemic urban center. *Clin Microbiol Infect* **20**(3): 263–268. <https://doi.org/10.1111/1469-0691.12298>

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Clarification

BJHM wishes to make clear that the content of the guide to Living longer with HIV, distributed with the November issue of the journal, was developed by the authors, without consultation with MSD and that the authors received no payment for writing this.

Erratum

The article *Improving the ward-based care of patients post-thyroidectomy* (vol 77(11), 2016, p. 652, <https://doi.org/10.12968/hmed.2016.77.11.652>) contained some minor errors. In *Figure 1* question 2 should have read ‘Which of the following investigations should be done routinely on the evening of surgery?’ and in question 4 dysphagia is not a symptom of hypocalcaemia, so should not have been ticked. In *Figure 2*, the Corrected calcium level in the central box should have been given as <1.7 mmol/litre. We apologise for any confusion caused.