

## Urine brilliance: urine TB LAM's role in challenging AIDS cases from LMIC's perspective

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### Background

The identification of reliable markers for active tuberculosis (TB) diagnosis is pivotal, especially in challenging scenarios, particularly in low- and middle-income countries (LMICs), where co-infections, notably among individuals with AIDS, pose significant diagnostic challenges. Lipoarabinomannan (LAM), an immunogenic virulence factor released from metabolically active or degrading mycobacteria, presents a promising avenue for overcoming these hurdles. In this study, we present a case series that underscores the intricacies of TB diagnosis, specifically focusing on individuals co-infected with AIDS in LMICs.

### Case(s) description

Our primary objective is to elucidate the diagnostic potential of urine LAM, strategically addressing challenges posed by atypical presentations and co-existing infections, particularly in the context of AIDS within LMICs. Several cases demonstrate the probability of TB, indicated through clinical presentation, where urine TB lipoarabinomannan (LAM) testing yielded positive results. One notable case involves prolonged undetected genitourinary tuberculosis spanning multiple years, emphasizing the difficulty of early diagnosis. Another case pertains to an AIDS patient initially suspected of CNS lymphoma, with a negative TB workup; however, the subsequent discovery of progressive TB occurred towards the end of the patient's life, aligning with the availability of TB LAM testing at our centre. Additionally, an AIDS patient diagnosed with cryptococcal meningitis tested positive for TB LAM, revealing the diagnostic challenges of concurrent infections. A comprehensive CT thorax-abdomen-pelvis revealed multiple lymphadenopathies, responding favourably to antituberculosis treatment. The last case involves an elderly lady with talaromyces co-infected with TB, substantiated by ancillary investigations.

### Discussion

Recognizing the imperative to avoid missing TB diagnoses in this vulnerable population, particularly in LMICs, we underscore the significance of urine TB LAM testing. Positive outcomes from LAM testing emphasize its potential for detecting TB amidst the backdrop of concurrent opportunistic infections in AIDS individuals within LMICs. The exploration of innovative methods, such as urine LAM testing, emerges as a crucial strategy to mitigate the risk of overlooking TB in this complex clinical context, ultimately enhancing health outcomes for individuals living with HIV in resource-limited settings.

### References

Huerga H, *et al.* (2019) Diagnostic value of the urine lipoarabinomannan assay in HIV-positive, ambulatory patients with CD4 below 200 cells/ $\mu$ l in 2 low-resource settings: A prospective observational study. *PLoS Med* 16(4): e1002792.

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## A unique case of *Listeria monocytogenes* superinfection of tuberculous lymphadenitis

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### Background

Lymphadenitis due to *Listeria monocytogenes* (LM) is rarely described. We present a case of lymphadenitis due to LM and *Mycobacterium tuberculosis* (MTB), which, to our knowledge, has never been described.

### Case(s) description

A 59-year-old woman from Mexico, with a history of recurrent otitis, presented to the Emergency Department with a 2-week history of erythematous and painful swelling in the right retromandibular site (Figure 1). Admission blood samples showed mild neutrophilia, raised C-reactive protein (74 mg/l, normal value <5 mg/l) and hyperglycemia (402 mg/dL). Ultrasound of the right neck showed multiple hypoechoic, enlarged lymph nodes from which a subcutaneous large hypoechoic collection originated, via a fistula (Figure 2). The infectious disease specialist performed an ultrasound-guided needle aspiration of the collection (Figure 3) and the drained material tested positive at the nucleic acid amplification test for MTB (acid-fast bacilli smear microscopy was negative and, later, culture became positive). Three induced sputum and bronchoalveolar lavage fluid had negative nucleic acid amplification test, smear, and culture. The HIV test was negative. A standard quadruple antitubercular treatment, including rifampicin, isoniazid, ethambutol, and pyrazinamide, was started. LM also grew in the culture of the drained material. Therefore trimethoprim/sulfamethoxazole was added for 10 days with improvement of the local inflammation in the right retromandibular site.

### Discussion

Tuberculous lymphadenitis is one of the most common extrapulmonary manifestations of tuberculosis. Bacterial superinfection of tuberculous lymphadenitis has been rarely reported. Overall, only 19 cases of LM-associated lymphadenitis have been reported<sup>1</sup>. The most frequent predisposing condition of LM-associated lymphadenitis is diabetes mellitus, as in our patient in whom a new diagnosis of diabetes was made. Co-infection of MTB and LM infection has only been reported twice<sup>2,3</sup>, but at sites other than lymph nodes. An ultrasound-guided needle aspiration performed promptly by an infectious disease specialist, with a careful selection of tests to be sent, may be relevant to correctly and quickly frame the aetiology of a lymphadenomegaly.