



5. DIAGNOSTIC ACCURACY OF XPERT ULTRA FOR MICROBIOLOGICAL CONFIRMATION OF PULMONARY TUBERCULOSIS IN PATIENTS WITH PAUCIBACILLARY DISEASE

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Introduction. Worldwide, up to one-third of pulmonary tuberculosis patients are missed for microbiological confirmation. Assessment of specimens obtained during bronchoscopy is one of the well-recognized methods that can increase the rate of microbiological confirmation in pulmonary tuberculosis. The data on the diagnostic accuracy of Xpert MTB Ultra, a real-time PCR-based diagnostic tool, in bronchial aspirate specimens is very limited.

Aim of study. In the presented study, we have evaluated the performance of Xpert MTB Ultra in bronchial aspirate samples in patients with negative smear microscopy and Xpert MTB Ultra in freely expectorated sputum.

Methods and materials. We retrospectively reviewed microbiological and basic clinical characteristics of all patients who were consulted for suspected pulmonary tuberculosis at the Institute of Phthtisiopneumology in Moldova during 2022 and had both negative smear and Xpert Ultra results in sputum samples and in whom bronchial aspirate was obtained by bronchoscopy with further microbiological examination by Xpert MTB Ultra and culture for *M. tuberculosis*.

Results. 393 cases with a complete dataset have been analyzed, of which 80 have been diagnosed with pulmonary tuberculosis. Positive culture for *M. tuberculosis* was obtained in 2.5%, smear microscopy was positive in 1.8% (13 cases), and Xpert Ultra in 4.2% (30 cases) of bronchial aspirate samples. The sensitivity and specificity of Xpert Ultra in bronchial aspirate, using culture as a reference standard, were correspondingly 80.0% (95% CI, 37.5% – 99.0%) and 98.7% (95% CI, 97.0% - 99.4%). Additional microbiological confirmation of pulmonary tuberculosis was obtained in 11.2% (9/80) of the patients diagnosed with pulmonary TB.

Conclusion. Xpert MTB Ultra has good diagnostic accuracy in bronchial aspirate samples. That could improve the rate of microbiological confirmation and potentially reduce the time to treatment initiation in patients with pulmonary tuberculosis.