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Title: Molecular assay for tuberculous pleural effusion

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Body: Background: Tuberculosis (TB) is one of the most common causes of pleural effusion in a high burden country. The definitive diagnosis depends on the demonstration of M.tuberculosis in the sputum, pleural fluid or pleural biopsy specimens. In the most cases, the pleural fluid is paucibacillary, that decreases the sensitivity of diagnostic tests. Biomarkers appear to be useful, but underused. Nucleic acid amplification (NAA) techniques, the most promising development in TB diagnostics, have been shown to have high specificity, but limited and variable sensitivity, especially for smear-negative specimens. Objectives: to evaluate the role of molecular tests in TB pleural effusion diagnosis. Methods: pleural effusions from 57 TB patients, mean age 41±11 years, admitted to the Phthisiopneumology Service during 6 months, were examined for M.tuberculosis (by smear microscopy, culture on solid and liquid media (Bactec MGYT), and molecular tests (ProbeTec, Xpert MBT/Rif)). Results: all pleural fluids were smear-negative by microscopy. M.tuberculosis was identified by culture in 16% (8/57) of cases and by molecular tests in 19% (9/57) of cases, p>0,05. No correlation was found with age, sex, symptoms duration, fluid amount (by ultrasound) on admission day. Conclusion: Diagnosis of tuberculous pleuritis presents many challenges, due to paucibacillary specimens. NAA assays can clearly contribute in the diagnosis of tuberculous effusion, and molecular methods seem similar to culture. As accuracy of diagnosis is reduced, clinicians rely usually on clinical judgement and response to treatment. Definitive diagnosis of TB pleuritis often requires pleural biopsy.