COMPARISON BETWEEN TRADITIONAL TECHNIQUES AND POLYMERASE CHAIN REACTION (PCR) FOR HUMAN TUBERCULOSIS DIAGNOSIS

THESIS. A. C. B. Assis submitted this thesis for her Doctorate in Tropical Diseases at Botucatu School of Medicine, São Paulo State University, UNESP, Botucatu, São Paulo, Brazil, 2005.

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ABSTRACT: Traditional microbiological diagnostic techniques such as bacilloscopy and culture were compared with polymerase chain reaction (PCR) for isolation of *Mycobacterium* spp from human patient secretions. PCR was standardized to diagnose tuberculosis. Three pairs of primers were used: one for *Mycobacterium* spp detection, one for the *Mycobacterium tuberculosis* complex, and one specific for *Mycobacterium bovis*. Two hundred clinical samples (195 of sputum and 5 of urine) were sent to the Mycobacterium Laboratory of Adolfo Lutz Institute - Bauru, São Paulo, for tuberculosis analyses. Bacilloscopy and culture were positive in 8.5% (17/200) of the samples, with no direct correspondence between them. This value is within the 10% disease prevalence for the city of Bauru. *Mycobacterium flavescens* was biochemically identified from HIV-infected patient. *Mycobacterium bovis* was not isolated. PCR was positive in 13% of the samples (26/200). There was an agreement between the three diagnostic techniques; PCR was more effective than bacilloscopy and culture, with no difference between them. PCR sensitivity, specificity, negative and positive predictive values were 65.38%, 100%, 100% and 96%, respectively. Bacilloscopy and culture sensitivity and specificity were 64.7% and 96.7%, respectively. PCR showed a fast, specific, and more sensitive technique than the traditional techniques for tuberculosis diagnosis.

KEY WORDS: Tuberculosis, diagnosis, PCR

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