

TITLE: MUTATION IN THE *rpoB* GENE IN IMMUNOCOMPETENT PATIENTS WITH EXTRAPULMONARY AND PULMONARY TUBERCULOSIS IN REFERENCE UNIT IN FORTALEZA, CEARÁ, BRAZIL

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ABSTRACT:

Mycobacterium tuberculosis is the infectious agent that causes tuberculosis (TB). In 2015 it was estimated an incidence of 10.4 million new cases, with 1.4 million deaths worldwide. In spite of its higher occurrence as lung disease, TB can manifest in other organs, through the bloodstream. The manifestation of TB in other organs is called extrapulmonary TB. The objective of this study was to characterize the frequency of the mutation in the *rpoB* gene in *M. tuberculosis* isolates with pulmonary and extrapulmonary clinical form. All study participants were immunocompetent, and had no history of prior treatment. Thirty seven samples were tested, being five from patients with extrapulmonary TB and 32 from pulmonary TB. The collection of the material of patients was performed in outpatient clinics of the São José Hospital for Infectious Diseases and Walter Cantídio Hospital in Fortaleza-Ceará between the months of March 2015 and March 2016. The bacterial growth was cultivated in Löwenstein-Jensen medium, followed by sensitivity test to antimicrobial agents by method of the proportion. The extraction of genomic DNA from cultures was conducted in the Laboratory of Research in Mycobacteria of the Department of Pathology and Legal Medicine, Federal University of Ceará. The detection of mutations at positions 516, 526 and 531 of the *rpoB* gene was performed by multiplex PCR followed by visualization in agarose gel. Out of the total, 29.7% (11/37) had a mutation in the region 531, being 40% (2/5) from extrapulmonary TB and 28.1% (9/32) from pulmonary TB. Of these 11 samples with mutation, 80.8% (9/11) showed phenotypic sensitivity to all drugs tested. The detection of the mutation in the *rpoB* gene mainly in patients with extrapulmonary TB should be investigated by molecular techniques, in order to cure the disease and avoid treatment failure. Also, it is important to note that the primary resistance is undersized in Fortaleza, Ceará.

Keywords: *Mycobacterium tuberculosis*, *rpoB* mutation, multiplex PCR, molecular diagnosis, primary resistance

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