

TITLE: FREQUENCY OF *Mycobacterium tuberculosis* DRUG-RESISTANT IN NEW CASES OF PULMONARY TUBERCULOSIS IN MANAUS – AM.

AUTORS: NASCIMENTO, F. O.^{1, 2}; NEVES, S. E.²; SOUZA, J. R. S.²; SANTOS, M. P.²; ANTUNES, I. A.³; OGUSKU, M. M.².

INSTITUTION: 1. Graduanda em Biotecnologia, UNIVERSIDADE FEDERAL DO AMAZONAS – UFAM, Manaus – AM (Av. General Rodrigo Otávio, 6200. Coroado I. Manaus – AM. CEP 69077-000) - Brasil; 2. INSTITUTO NACIONAL DE PESQUISAS DA AMAZÔNIA – INPA, Manaus – AM (Av. André Araújo, 2936. Petrópolis. Manaus – AM. CEP 69067-375) – Brasil; 3. POLICLÍNICA CARDOSO FONTES, Manaus – AM (Rua Lobo D'Almada, 222 – Centro. Manaus – AM. CEP 69010-030).

ABSTRACT

Tuberculosis (TB) is an infectious disease caused by species of *Mycobacterium tuberculosis* Complex, which affects the humanity for decades and remains as a serious public health problem, mainly due to increased of drug resistance cases. This study aimed to determine the frequency of *M. tuberculosis resistant* in new cases of pulmonary TB in Manaus/AM. We analyzed 124 strains of *M. tuberculosis* isolated from 2013 to 2014, belonging to the Mycobacteria Collection of Mycobacteriology Laboratory (INPA). The strains had its identity confirmed by PCR using primers for insertion sequence IS6110 specific to the *M. tuberculosis* Complex. For analysis of sensitivity to drugs Isoniazid (INH) and Rifampin (RIF) was used Nitrate Reduction Method (NRM) with modifications, that depends of *M. tuberculosis* ability of reduce nitrate to nitrite. The mycobacteria were inoculated on Löwenstein-Jensen medium, without drugs and with drugs INH and RIF plus sodium nitrate (NaNO₃). After incubation for 7, 10, or 14 days, the Griess reagent was added and the nitrate reduction, indicated growth, detected by a color change. Of 124 strains, the frequencies of *M. tuberculosis strains* resistant were: 4 (3,2%) to INH, 2 (1,6%) to RIF and 3 (2,4%) strains for both drugs (INH + RIF). This study, indicates that the drug resistance, in new cases of pulmonary TB, could be a factor that may difficult the control of disease, since that Amazonas state has a high incidence rate. Furthermore, a constant monitoring can be indicate if the level of resistance of *M. tuberculosis* strains is increasing, as it was observed in two Brazilian national surveys. In that surveys there were an increase in primary resistance to Isoniazid 4.4% to 6.0 % and Rifampicin from 1.3% to 1.5%, and primary resistance for two drugs (INH + RIF) increased from 1.1 % to 1.4 %.

Keywords: *Mycobacterium tuberculosis*, Tuberculosis, Drug-resistant, Nitrate Reduction Method.

Development Agencies: FAPEAM/SUSAM-SES-AM/MS/CNPq – PPSUS.