

**TITLE:** COMPARATIVE EVALUATION OF THE RAPID MOLECULAR TEST WITH THE PROPORTIONS METHOD FOR THE DETECTION OF RESISTANCE TO RIFAMPICIN

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**ABSTRACT:**

Improving the diagnosis of tuberculosis (TB) is essential for Brazil to increase the detection of new cases, reduce the time to start treatment, to identify early cases of resistant TB, reduce transmission and morbidity and mortality of the disease, and consequently reduce incidence rates. In this sense, the Ministry of Health implemented in 2014 the Molecular Rapid Test for Tuberculosis, MRT-TB. The test is based on Real Time PCR, which allows extraction, amplification and DNA detection of *Mycobacterium tuberculosis* Complex (MTBC) in addition to screening for Rifampicin (RMP) resistant cases. The time to release the results is approximately two hours. This study aimed to compare the detection of resistance to RMP by MRT-TB with the antibiotic susceptibility test (AST) by the proportions method in Lowenstein Jensen medium, described by Canetti et al, 1969. In the time interval of October 2014 to December 2016, cultures of sputum samples were performed by LACEN-GO. Of these 426 (23.4%) were positive for MTBC and also submitted to AST by the proportions method. The results of detection of rifampicin resistance MRT-TB with AST were compared. It was observed that the molecular test had 100% sensitivity, 99.29% specificity, positive predictive value (PPV) of 57.14% and negative predictive value (NPV) of 100%. The prevalence of RMP resistance in the study population was 0.94%. We can conclude that MRT-TB was able to exclude the resistance in 100% of the cases, since there was no false sensitivity. However, in a context of low prevalence, even with high specificity the PPV was low, because of seven cases of Resistance detected, three were false resistant. It is of fundamental importance to confirm the resistance to RMP by the AST to ensure that the patients receive the appropriate treatment and can be reassessed regarding the treatment plan initially adopted.

**Keywords:** Tuberculosis, Rifampicin, Resistance, Molecular Rapid Test

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