

TITLE: IDENTIFICATION OF MYCOBACTERIA IN TRIATOMYNE IN A LEPROSY ENDEMIC REGION IN CEARÁ, BRAZIL.

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ABSTRACT:

Leprosy is an infectious disease caused by the etiologic agent *Mycobacterium leprae*, an obligate intracellular bacillus, found predominantly in macrophages and Schwann cells. Brazil is the second country with the highest number of new cases in the world per year. In 2016, it was reported 25,218 new cases. Studies have reported the presence of bacillus in soil, water, armadillo, red squirrel, and more recently its viability has been demonstrated in triatomines (Hemiptera order). Other species of mycobacteria have been found in moths, aquatic insects (Hemiptera order) and mosquitoes. In a recent study conducted in Sobral, Ceará, the vectors *Triatoma pseudomaculata* followed by *Rhodnius nasutus* and *T. brasiliensis* were found in the urban and peridomicillary areas of leprosy cases. The microbiota of these two species of insects has the genus *Mycobacterium* as one of the dominant groups. Thus, it is important to analyze the overlap distribution of triatomines in regions endemic to leprosy. The main objective of this study was to detect the presence of *M. leprae* and other species of this genus in triatomines found in residences in the urban and rural area of Sobral, Ceará. The insects used in this study were provided by the Zoonoses Control Center of Sobral. The triatomines were captured by Sobral's own population and sent to one of the 24 Triatomine Information Centers (TIC) located in the health posts of the municipality. The genomic DNA of the triatomines was extracted and submitted to the amplification of the *hsp65* region of *Mycobacterium* sp. DNA samples of 154 insects (adults and nymphs) were obtained and submitted to PCR-Restriction Analysis (PRA) for the identification of fast and slow growing mycobacteria. Of the total samples analyzed, 26% (40/154) presented positive amplification to the genus *Mycobacterium*. The species *M. smegmatis*, *M. wolinski* 1, and *M. mageritense* were the most frequent. All the information in this study could be used to establish more adequate and effective measures for the prevention of the leprosy disease and to understand the ecology of mycobacteria in the nonhuman environment.

Keywords: Mycobacteria, triatomines, PCR, molecular diagnosis, Ceará

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