

TITLE: DETECTION OF *MYCOBACTERIUM LEPRAE* IN NASAL SAMPLES OF CONTACTANTS YOUNGER THAN 15 YEARS OLD OF LEPROSY CASES.

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ABSTRACT:

Leprosy is an infectious disease caused by *Mycobacterium leprae*, an obligatory intracellular bacillus. The main aim of this study was to investigate subclinical infection in leprosy contacts with age between 5 and 15 years of new cases detected in the Dona Libânia Center of Dermatology, Fortaleza-Ceará. In this study, it was included 69 index cases and their 101 contacts aged less than 15 years. Immunochromatographic ML-Flow test for detection of IgM antibodies against PGL-1 was conducted from venous blood obtained by fingerstick of all participants. Bacilloscopic index and detection of *M. leprae* DNA from nasal secretion were also performed. DNA extraction was performed using the Dneasy Blood and Tissue Kit (Qiagen) followed by amplification with primers targeting *M. leprae* RLEP region. PCR inhibition was seen in 13 nasal samples. Thus, bacilli DNA from nasal samples were detected in 16.1% (14/87) of the contactants of leprosy cases. In addition, the PCR positivity has higher among children between 10 and 15 years of age. A higher frequency of PCR positivity was found in contactants of paucibacillary (57%; 8/14) compared to multibacillary leprosy cases (43%; 6/14). A higher frequency of 33.1% (34/101) was found for ML-Flow test and two contactants were BI positive (1.98%). A similar seropositivity proportion was found among children younger than 10 years and those between 10 and 15 years old (31.5% and 37.5%, respectively). Our study shows that the combination of the detection of *M. leprae* DNA and the anti-PGL-1 serology are sensitive and specific, and may assist in monitoring the contacts with higher risk of developing the disease, especially the children. Moreover, our results demonstrate that paucibacillary cases also transmits the bacilli to their household contactants. The detection of the bacillus in the nasal mucosa, allied to the investigation of seropositivity to anti-PGL-1 reinforce the diagnosis of subclinical infection.

Keywords: *Mycobacterium leprae*, nasal mucosa, PCR detection, children, disease transmission

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