

**Title: Epidemiological Features associated to RD<sup>Rio</sup> *Mycobacterium tuberculosis* Infection in Florianópolis metropolitan region**

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**Resume:**

Tuberculosis (TB) keeps as a serious public health problem despite of an effective treatment remains an important cause of morbidity and mortality in our country. Molecular tools aid the tuberculosis control programs through genetic monitoring the infection spread. The genetic variant RD<sup>Rio</sup> strains of *Mycobacterium tuberculosis* are characterized by a deletion of a 26.3-kb region, and associated with cavitary disease, increase in efficiency of transmissibility, drug resistance and higher levels of recent transmission. This study was conducted on 79 clinical isolates of new pulmonary tuberculosis (TB) cases in Florianópolis metropolitan region (2014), to assess the prevalence of RD<sup>Rio</sup> *Mycobacterium tuberculosis* infection. Radiological and laboratory data were evaluated along with demographic and clinical accessed by a standardized questionnaire. Isolates were classified as RD<sup>Rio</sup> or non-RD<sup>Rio</sup> *Mycobacterium tuberculosis* by multiplex PCR. The susceptibility of clinical isolates was performed with the BACTEC MGIT system. Sublineage RD<sup>Rio</sup> was responsible for 35.4% of the TB cases. The study evaluated factors related to the infection severity as hemoptysis (29.4%) or lung cavitation (48%), as well as related transmissibility as high bacillary load (smear 2+ or 3+)(63%). Among the samples seven single drug resistance were observed, streptomycin resistance three cases, isoniazid resistance two, rifampin resistance one and ethambutol resistance one, besides multidrug resistance (isoniazid+rifampin) two cases. No difference in clinical, radiological or laboratorial features was observed among patients with TB due to RD<sup>Rio</sup> or non-RD<sup>Rio</sup> strains. However, these data of patients assisted by Basic Health Care Program, support previous findings that RD<sup>Rio</sup> is the main responsible for TB in Brazil.

Key words: RD<sup>Rio</sup>, *Mycobacterium tuberculosis*, Epidemiologic Features