

***Mycobacterium tuberculosis*: Genotyping by MIRU-VNTR e Spoligotyping of patients isolates from correctional facilities in the Rio de Janeiro State, Brazil**

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In the Rio de Janeiro State (RJ) prisoner system the TB incidence is ~33 times higher than in general population. However little is known about genotype strains circulating in correctional facilities. This study aimed to get insights on the phylogenetic profile of *M. tuberculosis* isolated from the system. The MIRU-VNTR technique and Spoligotyping were applied to genotype 306 strains isolated from TB inmates diagnosed in Units of the Prison System of RJ, mainly located in the metropolitan regions, during the year of 2012. MIRU-VNTR generated 9 genetic groups with 100% similarity, of which six groups were composed by two isolates each, two with three isolates and the remain group comprise 5 isolated, totaling 7.2% of cluster (22/306). By Spoligotyping 90.1% of the strains were pooled into 29 genetic groups. Of 271/306 (88.6%) samples Spoligotyping profiles were already described in the SITVITWEB, whereas 35 were of new patterns. The most frequent family was the Latin-American Mediterranean (LAM) (128/276, 46.4%), followed by T (69/276, 25%) and Haarlem (H) (67, 24.3%) which together accounted for 85.6% of all isolates. These three families are the main genotypes found worldwide, and in Brazil LAM family is predominant. The introduction of a drug susceptible isolate of the Beijing family was the first in our prisons. Cluster lowered by both techniques (5.6%, 17/306). Although LAM was the prevalent family in the correctional facilities the biggest clustered cases had matching isolates spoligotype of T lineage (SIT53, 7/17, 41.2%), suggesting recent transmission intra wall. The other clustered LAM cases may be reflecting the main genotypic circulating in the free population and associated with the neglected situation in prison reactivation of past infection is occurring. All this claim for better TB control at the entrance in prison and monitor the prisoners during their feathers.

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