

TITLE: EVALUATION OF INTERFERON-GAMMA RELEASE ASSAY FOR EARLY DIAGNOSIS OF LATENT TUBERCULOSIS IN HOUSEHOLD CONTACTS OF PULMONARY TUBERCULOSIS PATIENTS FROM PERNAMBUCO

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ABSTRACT:

Tuberculosis is still a major public health problem around the world. Early diagnosis of latent form of the disease (LTBI) is an important tool for tuberculosis control. These individuals are asymptomatic and can progress to active form of infection, which would restart the disease cycle and make them a transmission source. Currently, tuberculin skin testing (TST) and the Interferon-Gamma Release Assay (IGRA) are the tests available for LTBI diagnosis. Both tests indirectly detect exposure to the bacillus, since they evaluate the memory immune response to *M. tuberculosis*. In Brazil, LTBI is screened by TST. This test present low specificity and false-positive results due exposure to non-tuberculosis mycobacteria and BCG (Bacillus Calmette Guérin) vaccine. In this context, this study evaluated Quantiferon TB Gold In Tube (commercial IGRA) in LTBI early diagnosis in asymptomatic household contacts of pulmonary tuberculosis patients from Pernambuco during the period from May 2016 to April 2017. TST was applied in 82 individuals and blood samples collected for IGRA. TST was considered positive in the presence of an induration ≥ 5 mm, as well as IGRA, if there was a concentration ≥ 0.35 IU / ml interferon-gamma. Of these individuals, 35 (42,6 %) presented IGRA+/TST+ and 21 (25,6%) IGRA-/TST-. Seventeen contacts had IGRA indeterminate results and were excluded of agreement analysis between IGRA and TST. Nine (10,9 %) were discordant: 8 (9,7%) with TST+ /IGRA- and 1 (1,2%) with TST- /IGRA+ results. Regarding TST, IGRA presented 81.4% sensitivity, 95.3% specificity, 97.22% Positive Predictive Value, 72.41% Negative Predictive Value and 86.15% accuracy. In addition, according to the kappa coefficient $k = 0.71$ (95% CI, 0.4761 - 0.9501), there was a good agreement between the two tests. Based on these results, we conclude that IGRA is useful as a diagnosis tool to latent tuberculosis infection in contacts of pulmonary tuberculosis patients.

Keywords: *Mycobacterium tuberculosis*, Latent Tuberculosis, TST, Interferon Gama Release Assay, IGRA.

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