

Comparison of the Positive and Indeterminate Rates of QuantiFERON-TB Gold In-Tube and T-SPOT. TB According to Age-group

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Abstract : Background: There are two types of interferon-gamma release assays (IGRAs) in use for the detection of latent tuberculosis infection (LTBI), QuantiFERON-TB Gold In-tube (QFT-GIT) and T-SPOT.TB. There are some reports that IGRA results are affected by the patient's age. This study aims to compare the results of both IGRA tests according to age groups. Methods: We reviewed 54,882 samples referred to an independent reference laboratory (Seegene Medical Foundation, Seoul, Korea) for the diagnosis of LTBI from January 1, 2021, to December 31, 2021. This retrospective study enrolled 955 patients tested using QFT-GIT and 53,927 patients tested using T-SPOT.TB. The results of both IGRAs were divided in three age groups (0-9, 10-17, and ≥ 18 -year old). The positive rates and the indeterminate rates between QFT-GIT and T-SPOT.TB were compared. We also evaluated the differences in positive and indeterminate rates by age-group. Results: The positive rate of QFT-GIT was 20.1% (192/955) and that of T-SPOT.TB was 8.7% (4704/53927) in overall patients. The positive rates of QFT-GIT in individuals aged 0-9, 10-17, and over 18-year old were 15.4%, 13.3%, and 22.0%, respectively. The positive rates of T-SPOT.TB were 8.9%, 2.0% and 8.8%, in each agegroup, respectively. The overall prevalence of indeterminate results was 2.1% (20/955) of QFT-GIT and 0.5% (270/53927) of T-SPOT.TB. The indeterminate rates of QFT-GIT in individuals aged 0-9, 10-17, and over 18 years were 0.4%, 6.7%, and 2.6%, respectively. The indeterminate rate of T-SPOT.TB were 0.5%, 0.7% and 0.5%, in each age group, respectively. Conclusion: Our findings suggest that T-SPOT.TB has a lower rate of positive results in overall patients and a lower rate of indeterminate results than those of QFT-GIT. The highest positive rate was found in the over 18 years group for QFT-GIT, but the positive rates of T-SPOT.TB was not significantly different among groups by age. QFT-GIT showed variable and higher indeterminate rates according to age group, but T-SPOT.TB showed lower rates in all age groups (<1%).

Keywords : LTBI, IGRA, QFT-GIT, T-SPOT. TB

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