

# European Respiratory Society Annual Congress 2012

**Abstract Number:** 2931

**Publication Number:** P2722

**Abstract Group:** 10.2. Tuberculosis

**Keyword 1:** IGRA (Interferon [gamma]) **Keyword 2:** Tuberculosis - diagnosis **Keyword 3:** No keyword

**Title:** Comparative performance of interferon gamma release assays in detection of latent tuberculosis infection among health-care professionals

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**Body:** Latent tuberculosis infection (LTBI) presents as the immersed part of the iceberg. Since health-care professionals (HCPs) are a group at increased risk of LTBI, the aim of this study was to clarify the role of IFN- $\gamma$  response based on QuantiFERON-TB GOLD In Tube (QFT-GIT) and T-SPOT.TB assays in HCPs screening, comparing with the tuberculin skin test (TST). In this cross-sectional comparative study, HCPs were interviewed according to a risk factor questionnaire from July 2011 to January 2012. Subjects who had a history of household contact with a pulmonary tuberculosis (PTB) case or had an underlying immunosuppressive disorder were excluded from the study. A total of 95 eligible HCPs working in a university hospital in northeast of Iran and in hospital wards with the highest number of admissions for patients with PTB were evaluated. The mean age of participants was  $33 \pm 7$  years with a female/male ratio of 57/38. 84 HCPs (88.4%) were bacille Calmette-Guérin (BCG) vaccinated at birth. Of the 95 HCPs, 43.2% were positive by TST, and about 29% by each of the IGRAs. Of 53 (55.8%) individuals with a positive test, 15 (28.3%) were positive to all three tests and 26 (49.1%) were simultaneously positive to at least two tests. The global agreements (k) between QFT-GIT and T-SPOT.TB with TST, and between the two IGRAs were

0.737, 0.684, and 0.779 respectively. BCG vaccination and prevalence of nontuberculous mycobacteria associated with reactivity to TST reagent could explain a part of discordance observed between the tests. To lessen concerns about interpretation of the results, we would recommend concomitant application of at least two tests for LTBI.