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**Title:** Discordance QuantiFERON-TB Gold in-tube and tuberculin skin test: Latent tuberculosis infection or immunological memory?

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**Body:** Screening for latent tuberculosis infection (LTBI) in patients with immune-mediated inflammatory diseases (IMID) is mandatory before starting treatment with tumor necrosis factor- $\alpha$  antagonists. In a considerable number of cases, the adopted tests, i.e. QuantiFERON-TB Gold In-Tube (QFT), Tuberculin Skin Test (TST), Chest X-ray (CXR), provide discordant results, whose significance is doubtful. In this study we evaluated the role of a II level protocol for the interpretation of discordant results obtained in the baseline LTBI screening. We enrolled 45 IMID patients with discordant tests at LTBI screening from a total of 1490, screened in our dedicated outpatients service in Florence. All of them underwent a further QFT and T.SPOT-TB, whereas two-step TST was performed in patients with negative TST, 14-21 days later the first tests. At baseline screening 11 patients scored TST+/QFT-, 7 TST-/QFT+, 27 TST-/QFT- with LTBI signs on the CXr. At the II level screening, in the TST+/QFT- group 6/11 (55%) resulted T.SPOT-TB positive and no QFT conversion was observed. In the TST-/QFT+ group, the patients with QFT-response < 1 UI/ml (4/7, 57%) reverted the previous result, 1/7 showed a positive two-step TST and no one scored positive to T.SPOT-TB. In the last group, 1/27 (4%) QFT converted, 1/27 TST converted, 3/27 (11%) scored positive with T.SPOT-TB. In the studied population, T.SPOT-TB showed a better agreement with TST than QFT. QFT confirmed reliability and reproducibility issues for results around the cut-off value. The use of T.SPOT-TB more than the two step TST, seems useful to investigate discordant results and to point out immunological responses otherwise undetected.