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論文名

Usefulness and limitations of QuantiFERON-TB Gold in Japanese rheumatoid arthritis patients: proposal to decrease the lower cutoff level for assessing latent tuberculosis infection

Abstract

Until recently, the tuberculin skin test (TST) was used to diagnose latent tuberculosis infection (LTBI), but is known to be unreliable and have variable specificity and crossreactivity with Bacille Calmette et Guérin (BCG) vaccine. According to a recent meta-analysis for the diagnosis of pulmonary tuberculosis (TB) infection, QuantiFERON-TB Gold (QFT-G) is a viable alternative to TST and is recognized as being of high specificity, even in populations receiving BCG vaccination. We aimed to determine the sensitivity and specificity of QFT-G in Japanese rheumatoid arthritis (RA) patients with a past history of TB. We assessed whether it is possible to decrease the cutoff using receiver operating characteristic (ROC) analysis. We evaluated chest computed tomography (CT) findings, prior history of treatment, and contact with active TB in 370 RA patients. Forty-nine patients before initiation of treatment with tumor necrosis factor (TNF) inhibitors were divided into two groups: 22 with a past history of TB and 27 without. We estimated the efficacy of QFT-G compared with TST and antituberculosis (anti-TB) glycolipid antigen antibody. QFT-G was positive (≥ 0.35 IU/ml) in 13.6% with a past history of TB, increasing to 27.3% at the intermediate range cutoff of 0.1 IU/ml. The sensitivity and specificity of QFT-G was 0.27 and 1.00, respectively, at 0.1 IU/ml. Using ROC analysis, the area under the curve (AUC) of QFT-G but not for the other two tests was significantly large. QFT-G is a useful diagnostic method due to its superior specificity, but the use of a cutoff value of 0.35 IU/ml will likely result in an underestimate. We propose that a lower interferon- γ (IFN- γ) titer of 0.1 IU/ml be adopted when deciding to administer anti-TB drugs before initiation of TNF inhibitors.