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Negative and Positive Predictive Value of a Whole-Blood Interferon- γ Release Assay for Developing Active Tuberculosis: An Update.

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Source

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Abstract

RATIONALE:

only limited data are available on the predictive value of interferon- γ release assays for progression from latent tuberculosis infection to active tuberculosis (TB).

OBJECTIVES:

to build on our initial study comparing the QuantiFERON-TB Gold in-tube assay (QFT) with the tuberculin skin test (TST) in close contacts of patients with TB and evaluating progression to active TB for up to 4 years.

METHODS:

a cohort of close contacts of smear-positive index cases established between May 2005 and April 2008 was tested with QFT and TST. Through April 2010, progressors to active TB were consecutively recorded.

MEASUREMENTS AND MAIN RESULTS:

of the 1,414 contacts (141 children), 1,033 were still resident in Hamburg at the end of the study period, and results of both tests were available for 954. QFT, but not TST, results were associated with exposure time ($P < 0.0001$). For QFT, 198 of 954 (20.8%) were positive; 63.3% (604) were TST positive at greater than 5 mm and 25.4% at greater than 10 mm. Nine hundred and three contacts refused chemoprevention and 19 developed

active TB. All 19 (100%) had been QFT positive with a progression rate of 12.9% (19 of 147) over the observation period. Corresponding values for the TST were significantly lower: 89.5% (17 of 19) and 3.1% (17 of 555) at greater than 5 mm, and 52.6% (10 of 19) and 4.8% (10 of 207) at greater than 10 mm, respectively. The progression rate of 28.6% (6 of 21) for QFT-positive children was significantly higher than 10.3% (13 of 126) for adults ($P = 0.03$).

CONCLUSIONS:

results suggest that QFT is more reliable than the TST for identifying those who will soon progress to active TB, especially in children.