

Discordance among commercially-available diagnostics for latent TB infection

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In populations with a low prevalence of tuberculosis (TB), the majority of positives with the three tests commercially available in the U.S for the diagnosis of TB are false positives, according to a new study.

"We compared commercially available tests for latent [tuberculosis](#) infection (LTBI) in a diverse population with a low LTBI prevalence," said James Mancuso, MD, DrPH, of the Walter Reed Army Institute of Research Preventive Medicine Residency Program. "Our results suggest that in low-prevalence populations, most positive results obtained with these tests are false positives."

The findings were published online ahead of print publication in the American Thoracic Society's [American Journal of Respiratory and Critical Care Medicine](#).

The cross-sectional study involved 2,017 military recruits at Fort Jackson, South Carolina, who completed a risk factor questionnaire and underwent testing with the 3 tests: 1) tuberculin [skin test](#) (TST), 2) the [interferon gamma](#) release assays (IGRAs) QuantiFERON®-TB Gold In-Tube test (QFT-GIT) and 3) the TSPOT® TB test (T-Spot). The Battey Skin Test (BST) was also administered to assess the impact of non-tuberculosis mycobacteria (NTM) reactivity on test discordance.

The specificities of TST, QFT-GIT, and T-Spot were not significantly different. Of 88 subjects with a positive test, 68 (77%) were positive to one test, 10 (11.4%) were positive to two tests, and only 10 (11.4%)

were positive to all three tests. Bacille Calmette Guerin vaccination, tuberculosis prevalence in country of birth, and Mantoux skin test reaction size were associated with TST positive, IGRA negative test discordance, supporting evidence that NTM sensitization can cause false positive TST results. Greater quantitative test results and higher TB risk strata were associated with increased concordance between tests.

"Our data support a high proportion of false positives with any of these three tests in a low- prevalence population," added Dr. Mancuso, "as 77 percent of our subjects had positive results with only one test. Lower quantitative results were associated with a smaller risk for TB exposure and single positive tests, and lower risk for TB exposure was associated with decreasing test agreement."

There were some limitations to the study, including the lack of a gold standard for determining the presence of *M. tuberculosis* infection and administrative restrictions that resulted in an increased proportion of inadequate blood draws and TST reading times, which were slightly shorter than optimal.

"Low positive predictive value (PPV) is a well-known issue with the TST, and risk stratification is recommended to guide interpretation of the test," concluded Dr. Mancuso. "Our study suggests that risk stratification may also increase the PPV and reduce the number of false positives with the IGRAs. In accordance with the CDC's recommendation, people at minimal risk of [TB infection](#) should not be targeted for LTBI testing, regardless of which test is used."

Provided by American Thoracic Society

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