Exchanging the skin bleb for the test tube

Although we are somewhat buffered in the United States, the global burden of tuberculosis remains exceedingly high, due in part to a large pool of people with clinically silent, latent infections.

Detecting latent tuberculosis is important for public health reasons, since reactivated tuberculosis can lead to infection of vulnerable populations, including those with some degree of immunosuppression due to aging, comorbid disease, or immunosuppressive therapy such as corticosteroids or anti-tumor necrosis factor-alpha agents.

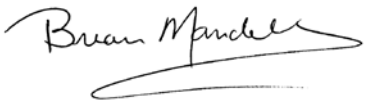
The widely used tuberculin skin test is safe and relatively inexpensive, although it is unwieldy because it must be done by a person skilled in its technique, and the patient must make a second trip to a health care provider 48 to 72 hours later to have it interpreted. A previous effort to make testing more user-friendly, the tine test, proved to be less reliable.

In this issue of the *Journal*, Drs. Cyndee Miranda, J. Walton Tomford, and Steven M. Gordon describe the relatively new ex vivo interferon-gamma-release assays, which have received the full support of the US Centers for Disease Control and Prevention and are beginning to supplant the tuberculin skin test.

Besides solving some of the logistic problems, these newer tests have additional benefits. The skin tests detect prior exposure to several nontuberculous mycobacterial species, including *Mycobacterium bovis*, the strain used in the bacille Calmette-Guérin (BCG) vaccine given in many countries around the world. Because many areas where BCG is given also have a high prevalence of tuberculosis and nontuberculous mycobacterial infection, this limited specificity can cause confusion when immigrants from these areas enter the United States and undergo skin testing. Many people unnecessarily receive antibiotic therapy for assumed latent tuberculosis, due to a false-positive tuberculin skin test.

The interferon-gamma-release assays utilize more limited mycobacterial material obtained from M *tuberculosis* and thus have a greater specificity but a similar sensitivity.

These tests are not perfect. There are challenges with the interpretation of some results, the assay kits are relatively costly, and laboratory technicians must handle the samples and assay kits with great care. Nonetheless, I believe that these tests are a positive step towards accurate recognition and treatment of patients with latent tuberculosis.



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