

New blood test for tuberculosis could reduce the spread of this top global infections-disease killer:Study finds

A new study presented today at ADLM 2026 in Anaheim, California found that a simple blood test could accurately identify [tuberculosis](#) (TB)-a leading cause of death worldwide-among patients with varying degrees of exposure to the disease. If confirmed, these results could help save millions of lives and curtail a global health emergency.

“Every week of delay in diagnosing TB matters — so early identification may allow treatment to begin sooner and potentially reduce transmission,” said Dr. Sheng-Wei Pan, a physician in the department of chest medicine at Taipei Veterans General Hospital in Taiwan and the study’s lead author. According to the World Health Organization, a quarter of the global population is estimated to have been infected with the TB bacteria (*Mycobacterium tuberculosis*), and 5-10% will go on to develop active disease.

TB is almost always curable with [antibiotic therapy](#) when *M. tuberculosis* is detected in initial stages of disease progression. It is typically diagnosed by assessing samples of patients’ sputum, which are mucus secretions coughed up from the lungs and airways.

“However, not all patients can produce sputum when they first seek medical care, especially those with early disease or those with low bacterial burden,” Dr. Pan said. For that reason, non-sputum-based diagnostic tools are urgently needed.

The researchers evaluated a blood marker produced by the bacteria called 6-kDa early secreted antigenic target (ESAT-6). While ESAT-6 has been studied before, most sensors used to detect it have not been sensitive enough to distinguish active pulmonary TB from latent TB infection, TB exposure, or other lung diseases. Dr. Pan’s team used a new biosensor that overcame this limitation.

“The novelty of our study lies in the highly sensitive quantification of circulating ESAT-6,” Dr. Pan said.

The researchers quantified ESAT-6 levels in blood samples from 217 patients who either had an active pulmonary TB infection (cases) or did not (controls). The control group was further classified into patients with lung disease caused by different *Mycobacterium* species than the one that causes TB, those with lung cancer, people infected with latent TB (no symptoms) after being exposed to a contact with TB, uninfected people who were exposed to a TB contact, and healthy people with no known TB contacts.

The ESAT-6 marker did an excellent job of differentiating between TB- and non-TB patients. Moreover, the researchers noted a stepwise increase in the blood concentration of the marker across the spectrum of TB infection, with the lowest levels in uninfected people with TB contacts, medium amounts in those with latent TB, and the highest levels in patients with active TB. This strong, independent association held true even after the researchers accounted for other factors that could impact patients’ TB status, such as age, sex, and the presence of diabetes.

Unlike biomarkers that measure the body's immune response to infection, ESAT-6 is derived directly from the TB bacteria. "We believe this is one reason why it performs so well in identifying active TB," Dr. Pan said. The study found ESAT-6 did a better job discriminating among TB patient groups than two common blood-based markers.

Because the study used a design in which patients' disease status was known from the outset, further research is needed to confirm that ESAT-6 can predict TB status in real time. "We are currently planning a prospective study to further evaluate if this can be used in a real-world clinical setting," Dr. Pan said.

Although sputum cultures remain essential for verifying TB and providing information about drug resistance, ESAT-6 holds promise as a practical tool for triaging patients in instances when sputum-based diagnostics are limited or delayed.

Reference:

New blood test for tuberculosis could reduce the spread of this top global infectious-disease killer, Association for Diagnostics & Laboratory Medicine, Meeting: ADLM 2026

News Source:

https://medicaldialogues.in/pulmonology/news/new-blood-test-for-tuberculosis-could-reduce-the-spread-of-this-top-global-infectious-disease-killer-study-finds-180637?utm_campaign=&utm_content=EASL-EASD-EASO%20Issue%20New%20Guidance%20on%20Resmetirom%20and%20Semaglutide%20for%20MASH&utm_medium=email&utm_source=Newsletter&utm_term=