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## Exploring the 3 Keys to Ending the TB Epidemic Amid the COVID-19 Pandemic

Announcer:

You're listening to *Tackling TB* on ReachMD, sponsored by Qiagen. Here's your host, Dr. Paul Doghramji.

Dr. Doghramji:

The World Health Organization has set the year 2030 as the date to eliminate tuberculosis, or TB for short. But does the presence of the COVID-19 pandemic change that? And what steps can we take now to help meet the goal of eliminating TB, all while managing the COVID-19 pandemic?

This is *Tackling TB* on ReachMD. And I'm Dr. Paul Doghramji. Joining me to review the need for TB testing, surveillance, and prevention is Dr. Sarojini Qasba. She's currently a hospitalist, hospital epidemiologist, medical director for antimicrobial stewardship, and pediatric emergency room physician, all at Suburban Hospital in Bethesda, Maryland. Previously, she was medical director for the tuberculosis program in Montgomery County, Maryland. Dr. Qasba, thanks for being here today.

Dr. Qasba:

Thank you.

Dr. Doghramji:

Let's start with some context here, Dr. Qasba. What is tuberculosis and what is its impact on the world?

Dr. Qasba:

So tuberculosis, as we know, is a communicable disease that is one of the top 10 causes of death worldwide and a leading cause of death from a single infectious agent ranking above HIV/AIDS. TB is an old disease; 24th of March in 1882 is when Robert Koch announced his discovery of the bacillus that's responsible and subsequently named *Mycobacterium tuberculosis*. There's a large umbrella of mycobacterial organisms, most of what we consider atypical. But tuberculosis sort of falls outside of that umbrella as it's quite communicable. The disease is spread by person-to-person contact. There is pulmonary tuberculosis that is within the lungs and extrapulmonary, which is sites affected outside the lung. When we say tuberculosis, we mean someone who has active disease versus someone who has what's called latent tuberculosis infection, which we call LTBI.

Active TB is what a person has symptoms of TB, such as fevers, night sweats, fatigue, weight loss, and cough, and remembrance of communicable disease.

Latent tuberculosis is what a person does not feel sick, can't spread the disease, and generally has a normal chest x ray. Overall, in latent tuberculosis without treatment, about 5 to 10 percent of infected persons will develop TB, which is the active disease, at some time in their lives. About half of those people who develop tuberculosis disease will do so within the first two years of infection. And for persons whose immune system is weakened, especially those with HIV, the risk of developing tuberculosis disease is considerably higher than for persons with normal immune systems.

Just some statistics to put things in perspective. According to the WHO, approximately 10 million persons were infected with tuberculosis in 2019 and 1.4 million died in that same year.

Dr. Doghramji:

Now you talked about this a little bit before, but can you tell us more about latent tuberculosis infection and its impact in the U.S.?

Dr. Qasba:

Sure. In 2019, there is an estimated 1.7 million persons with latent tuberculosis infection, and it is projected that about 10 percent of these patients will progress to active disease in their lifetime. Thirteen million latent tuberculosis infected patients are in the U.S. and 71.4 percent are reported active cases in the U.S. or non-U.S. born.

And at-risk population for progression are those that are immunosuppressed, such as patients with HIV/AIDS, diabetes, end-stage renal disease, patients who may be placed on chemotherapy for cancer. Fifty one percent of U.S. TB cases continue to be reported from four particular states. That's California at 23.7 percent, Texas at 13 percent, New York at 8.5 percent, and Florida at 6.3 percent. It is very important to identify patients who have latent tuberculosis infection by testing them and offering the medications to prevent them from developing active tuberculosis.

Dr. Doghramji:

And since TB is preventable and treatable, can you speak about the importance of testing, treatment, surveillance, and prevention?

Dr. Qasba:

So TB is treatable and preventable. In order to diagnose someone with latent tuberculosis infection, there are two modalities that we are aware of and that we use in the United States. And those are IGRA, or interferon gamma release assays, and the skin test, which I'll refer to as the TST. TST is a well-known and old test. It's been used all over the world, but clearly there are some challenges when you use the skin test and these are as follows: A patient needs to make two appointments; one for placement and the other for the skin test to be read. There are oftentimes misreadings of the test. It's important to measure the induration and not the erythema, which is often what's measured. In terms of IGRAs, or the interferon gamma release assays, there are two currently on the market in the U.S. One is the QuantiFERON-TB test, or the QFT, of which the QFT Plus is the latest version. And the T-SPOT, both measured interferon gamma levels in the blood, but via different techniques.

So a lot of times people ask why IGRA over TST. And the IGRA is a more sensitive and specific than the TST. In the TST, there's overlap with atypical mycobacterium organisms which can tend to show positivity in these patients. IGRAs will not be positive in the setting of BCG vaccinated patients. It's one blood draw, one visit, and no user error. The IDSA, ATS, and CDC are all the organizations and agencies that recommend the use of IGRAs as opposed to TST testing for latent tuberculosis.

The important thing to remember is to offer treatment to patients who are positive so they can prevent themselves from developing active tuberculosis. And currently these are the following options that are available. Rifapentine and isoniazid to be given weekly for three months. Rifapentine and isoniazid to be given daily for one month. Rifampin to be administered daily for four months. Or isoniazid to be given daily for six months.

Dr. Doghramji:

For those just tuning in, you're listening to *Tackling TB* on ReachMD. I'm Dr. Paul Doghramji, and today I'm speaking with Dr. Sarojini Qasba about the importance of TB testing.

So Dr. Qasba, now that we have a better understanding of tuberculosis, let's further explore this epidemic that's occurring within a pandemic. How has COVID-19 affected the goal to eliminate TB by 2030?

Dr. Qasba:

There has been clearly a shift in efforts both domestically and internationally, from everything pre-covered to covered in this shift has included reassignment of staff and national TB programs to COVID-related duties, reallocation of budgets, and decrease of both outpatient inpatient visits for tuberculosis. Also data collection and reporting have been affected during the pandemic for reporting tuberculosis.

The WHO goal is to eliminate TB as an epidemic by 2030. However, the COVID-19 pandemic may negatively impact that goal. COVID-19 threatens to reduce elimination efforts and could increase deaths by as much as 0.4 million persons. Reallocation of essential TB services to address COVID-19 resource needs, the economic impact of the pandemic is projected to worsen two determinants of TB incidence: Funding and unemployment, as well as undernutrition. Models suggests that an increase in TB cases could rise as much as 1 million persons per year between 2020 to 2025.

Dr. Doghramji:

And if we continue on that theme, how might the economic impact of the COVID-19 pandemic influence TB incidents?

Dr. Qasba:

It definitely will have a dramatic impact on the incidence of tuberculosis. As I mentioned, the efforts have shifted. So the surveillance for tuberculosis and the money that has been set aside for TB surveillance, diagnosis, prevention, and treatment have all dramatically shifted to COVID efforts.

Dr. Doghramji:

Lastly, Dr. Qasba, what are some parting thoughts you'd like to leave with our listeners?

Dr. Qasba:

Active tuberculosis is a treatable disease. And latent tuberculosis, if diagnosed, can be treated, which can prevent active tuberculosis from developing in patients. This should be offered and highly encouraged to patients. Newer diagnostic tests are more sensitive and specific with minimal error in diagnosis and less convenient to the patient. As an example, the interferon gamma release assays, which I mentioned earlier, which are more sensitive, specific, not so much of an inconvenience to the patient.

March 24th is set aside to bring awareness to TB and its global impact on health and health outcomes. And everyone should remain very vigilant in mitigating infectious diseases and clinicians to remember, to detect, and test, and prophylactically treat latent tuberculosis so we can decrease the number of active tuberculosis throughout the United States and the world as we know it to be very communicable in nature.

Dr. Doghramji:

Well, those will certainly be some helpful pointers for our audience. And on that note, I want to thank my guest, Dr. Sarojini Qasba, for speaking with me about the impact of the COVID-19 pandemic on testing and global TB elimination goals. Dr. Qasba, it was great having you on the program.

Dr. Qasba:

Thank you once again. It was my pleasure.

Dr. Doghramji:

And you've been listening to *Tackling TB*, sponsored by Qiagen. To access other episodes on this series, visit [reachmd.com/tacklingTB](https://reachmd.com/tacklingTB), where you can Be Part of the Knowledge.

Announcer:

That was Dr. Sarojini Qasba from the Suburban Hospital in Bethesda, Maryland. To access this and other episodes from this series, visit [ReachMD.com/TacklingTB](https://ReachMD.com/TacklingTB). Thanks for listening.