

Public health microbiology: my personal perspective



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My Personal Perspective on Tuberculosis Over the last 100 years, tuberculosis (TB) has killed more than 100 million people (Iseman), and this has continued unaffected over the last half-century, in spite of the existence of effective anti-tuberculosis drugs. About a third of the world's population is infected with *Mycobacterium tuberculosis*. Among communicable diseases, TB is the second leading cause of death worldwide after HIV/AIDS, killing nearly 2 million people each year. Approximately 13% of TB cases have co-existent HIV infection (Tomford). Sad to say, one of the victims of tuberculosis is my Aunt. She is 46 years old now and she has been diagnosed with tuberculosis several years ago. While observing her symptoms and treatments, I came to realize that the lessons I learned from my research and studies on tuberculosis proved to be true.

Tuberculosis or "TB" is short for a disease called tuberculosis. Tiny germs that can float in the air spread TB. The TB germs may spray into the air if a person with TB disease of the lungs or throat coughs, shouts, or sneezes. The people nearby can breathe TB germs into their lungs. TB germs can live in a person's body without making him sick (Tuberculosis facts). The immune system traps TB germs with special germ fighters. Germ fighters within the body keep TB germs from making the person sick. However, there are times when the TB germs can break away and spread. Thus, the germs can attack the lungs or other parts of the body. They can go to the kidneys, the brain, or the spine (Tuberculosis facts). A group of five closely related species, which form the *Mycobacterium tuberculosis* complex, causes tuberculosis: *M.*

tuberculosis, *M. bovis*, *M. africanum*, *M. microti*, and *M. canettii*. *M.*

tuberculosis (Koch's bacillus) is responsible for the vast majority of TB cases in the United States (Tomford). The main defining characteristic of the genus

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Mycobacterium is the property called acid-fastness, which is the ability to withstand decolonization with an acid-alcohol mixture after staining with carbolfuchsin or auramine-rhodamine (Tomford).

Common symptoms of TB may include A cough with thick, cloudy, and sometimes bloody mucus (sputum) from the lungs for more than 2 weeks, a rapid heartbeat, a swollen neck (when lymph nodes in the neck are infected). Other symptoms may include: Fever, chills, and night sweats, fatigue and muscle weakness, loss of appetite and unexplained weight loss, shortness of breath and chest pain (in rare cases). Symptoms of TB outside the lungs (extra pulmonary TB) vary widely depending on which area of the body is infected. For example, back pain can be a symptom of TB in the spine (Symptoms).

Doctors diagnose active tuberculosis (TB) in the lungs (pulmonary TB) by using a medical history and physical examination, and by checking the symptoms (such as an ongoing cough, fatigue, fever, or night sweats).

Doctors will also look Sputum cultures. Testing mucus from the lungs, (sputum culture) is the best way to diagnose active TB. These tests will show which medications will kill the bacteria. Results of sensitivity tests can take between 1 and 6 weeks because TB-causing bacteria grow very slowly (Exams and test).

One of the great news about tuberculosis is that it can be cured. However, TB germs are strong. It takes at least six to nine months of medication to wipe them all out. It is therefore important that the patient should take all the medicine prescribed by the physician. Big problem occurs when the patient stop taking medication too soon because TB germs that are still alive become even stronger. Thus, the patient may need stronger drugs to kill

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these "super" TB germs (Tuberculosis facts). Doctors treat tuberculosis (TB) with antibiotics to kill the TB bacteria. These medications are given to everyone who has TB, including infants, children, pregnant women, and people who have a weakened immune system (Treatment).

Worked cited

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