

TUBERCULOSIS

Tuberculosis (TB) is an infectious disease usually caused by *Mycobacterium tuberculosis* (MTB) bacteria. Tuberculosis generally affects the lungs, but can also affect other parts of the body. Most infections show no symptoms, in which case it is known as latent tuberculosis. About 10% of latent infections progress to active disease which, if left untreated, kills about half of those affected. The classic symptoms of active TB are a chronic cough with blood-containing mucus, fever, night sweats, and weight loss. It was historically called "consumption" due to the weight loss. Infection of other organs can cause a wide range of symptoms.

Causes:

The main cause of TB is *Mycobacterium tuberculosis* (MTB), a small, aerobic, nonmotile bacillus. The high lipid content of this pathogen accounts for many of its unique clinical characteristics. It divides every 16-20 hours, which is an extremely slow rate compared with other bacteria, which usually divide in less than an hour. Mycobacteria have an outer membrane lipid bilayer. If a Gram stain is performed, MTB either stains

② Very weakly "Gram-positive" but does not retain dye as a result of the high lipid and mycolic acid content of its cell wall. MTB can withstand weak disinfectants and survive in a dry state for weeks. In nature, the bacterium can grow only within the cells of a host organism, but M. tuberculosis can be cultured in the laboratory.

Specialty	Infectious disease, Pulmonology.
Symptoms	Chronic cough, fever, cough with bloody mucus, weight loss.
Causes	Mycobacterium tuberculosis
Risk factors	Smoking, HIV/AIDS
Diagnostic method	CXR, culture, tuberculin skin test.
Differential diagnosis.	Pneumonia, histoplasmosis, sarcoidosis, coccidioidomycosis.
Prevention	Screening those at high risk, treatment of those infected, vaccination with bacillus calmette-guérin (BCG)
Treatment	Antibiotics.
Frequency	25% of people (latent TB).
Death	1.5 million (2018)

③ Treatment :

Treatment of TB uses antibiotics to kill the bacteria. Effective TB treatment is difficult, due to the usual structure and chemical composition of the mycobacterial cell wall, which hinders the entry of drugs and makes many antibiotics ineffective.

Active TB is best treated with combinations of several antibiotics to reduce the risk of the bacteria developing antibiotic resistance. The routine use of rifabutin instead of rifampicin in HIV-positive people with tuberculosis is of unclear benefit as of 2007.

Latent :

Latent TB is treated with either isoniazid or rifampin alone, or a combination of isoniazid with either rifampicin or rifapentine.

The treatment takes three to nine months depending on the medications used. People with latent infections are treated to prevent them from progressing to active TB disease later in life.

Education or counselling may improve the latent tuberculosis treatment completion rates.