Tuberculosis



What is tuberculosis?

Tuberculosis (TB) is an infectious disease caused by bacteria called Mycobacterium tuberculosis. The bacteria usually cause an infection in the lungs, but it can affect other parts of the body such as the kidney, spine, and brain. If not treated properly, TB can be fatal.

What are the different types of tuberculosis infection?

TB infection can be classified as either “latent” or “active”.

A latent TB infection means a person is infected with the bacterium, but the disease does not develop and no symptoms are experienced. Latent infection occurs when the immune system of the infected person is able to keep the bacteria under control. The TB bacteria can remain dormant for years without causing the disease or symptoms. The World Health Organization states that about 10% of people who are infected with TB will become sick or infectious at some time during their life. People with compromised immune systems such as persons living with HIV, malnutrition, or diabetes; or people who use tobacco have a much higher risk of becoming ill.

However, in some cases, the TB disease may develop later. If the immune system weakens due to another disease or medications, the TB bacteria that were dormant may become activated. Activation causes the TB disease and associated symptoms.

For some individuals, active TB disease may develop within weeks of the initial infection.

What are the signs and symptoms of tuberculosis?

The signs or symptoms of active TB infection include:

- Cough that lasts 3 weeks or longer
- Presence of blood or sputum in cough
- Pain in chest
- Loss of weight
- Loss of energy
- Poor appetite

- Fever, chills, night sweats

How is tuberculosis transmitted?

People with active TB can transmit the bacteria through the air by coughing and sneezing. The bacteria spread through droplets in the saliva or sputum.

When a person with active TB coughs, sneezes, talks, or spits, tiny droplets containing the bacteria are released into the air and can be inhaled by people who are close by. The bacteria can spread from the initial location in the lungs to other parts of the body through the bloodstream. Only a small number of bacteria are needed to cause an infection.

Persons with latent TB infection cannot transmit TB because bacteria are not present in their saliva or sputum.

How is tuberculosis recognized?

Common tests to determine active TB include:

- chest radiography (x-rays),
- sputum smear microscopy (the sputum is examined by microscope),
- mycobacterial culture and phenotypic drug susceptibility testing (a method to determine if a person has drug resistant TB), and
- nucleic acid amplification testing (a method to determine if a particular virus or bacterium is present).

To help determine latent TB, the tuberculin skin test and interferon gamma release assay (a test of the person’s immune reactivity) may be used.

Can tuberculosis be treated?

TB can be treated effectively with a combination of drugs. It is important to follow the doctor’s directions and take the drugs exactly as recommended. If you forget to take your pills, or if you only take some of them, the tuberculosis bacteria may become resistant to the drugs (forming a drug-resistant TB strain).

TB is largely treated without hospitalization. However, those requiring additional medical assistance may be hospitalized and stay in an airborne isolation room.

What is drug-resistant TB?

Drug-resistant TB refers to TB strains that have developed resistance towards a drug or drugs. These TB strains cannot be managed by conventional treatments.

For example, multidrug-resistant TB is resistant to at least the drugs isoniazid and rifampin, two commonly used anti-TB drugs. Some strains of TB have emerged that are resistant to almost all anti-TB drugs. These are called extensively drug-resistant TB.

Should tuberculosis be an occupational concern?

In the workplace, employees can contract TB directly from actively infected persons or from breathing in air that contains the bacteria. While the risk of

workers contracting TB is higher in health care and in prisons where people with TB may be treated or detained, all workplaces should be aware of how TB can spread. General preventative measures include education to raise awareness in workers about TB, and encouraging employees to seek medical help when TB-like symptoms are noticed.

In high risk occupations, implementing a TB control program is important. A TB control program should include policies and procedures for:

- rapid identification, isolation, and treatment of individuals with infectious TB or those suspected of being infected,
- appropriate controls such as establishment of negative-pressure isolation rooms and a respiratory protection program, and
- adoption of routine practices and additional precautions by staff.

In a health care setting, infectious individuals should be placed in private rooms. The isolation room must be at negative air pressure and it must have adequate ventilation to dilute the concentration of contaminants within the room. The air from the isolation room must be directly exhausted to the outside. Other additional precautions such as the use of high efficiency particulate air (HEPA) filtration or ultraviolet germicidal irradiation (UVGI) may be used.

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