Tuberculosis (TB)

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Definition

Tuberculosis (TB) is an infection, primarily in the lungs (a Pneumonia).

caused by bacteria called "Mycobacterium tuberculosis " .
There is also a group of organisms referred to as atypical tuberculosis.
These involve other types of bacteria that are in the *Mycobacterium* family.

It is spread usually from person to person by breathing infected air during close contact.

TB can remain in an inactive (dormant) state for years without causing symptoms or spreading to other people.

When the immune system of a patient with dormant TB is weakened, the TB can become active (reactivate) and cause infection in the lungs or other parts of the body.

Problems & Hypotheses

1-persistent cough	2-phlegm production	3-shortness of breath	4-sweating at night	5-Weight loss
• Respiratory tract infection "TB" • Bronchial mucosa irritation "Dust" • Lung tumor • Allergic reactions • Smoking • Congestive heart failure • Common cold • Bronchial inflammation • Bronchial sub-mucosal glands hyperplasia	• Pneumonia • Chronic bronchitis • Smoking • TB • Increase of mucous secretions • Bronchiectasis • Allergic reaction • Heart failure	• Anemia • COPD • Anxiety • Heart failure • Lung fibrosis • Lung tumor • Airway passages inflammation • Pleural effusion • Hypoxia • Chest pain • Pneumothorax • Respiratory tract infection • Respiratory muscles trauma • Myocardial infarction	• Malignancy • TB • Warm environment • Anxiety • Hyperthyroidism • Malnutrition	• Malignancy • TB • Anxiety • Anorexia • malnutrition Gastroesophageal refluxdisease

➢ Questions to ask the patient

- Any history of chronic or recent infection?
- Any history of smoking?
- Any history of medication?
- Any history of allergy?
- Any blood while coughing?
- Any history of fever
- What is the frequency and severity of the symptoms?
- Social history
- Family history
- If the symptoms worsen at a specific time?
- Any history of gastroesophageal reflux disease
- Any history of chest pain
- Any history of exposure to dust

causes

All cases of TB are passed from person to person via droplets.
When someone with TB infection coughs, sneezes, or talks, tiny droplets of saliva or mucus are expelled into the air, which can be inhaled by another person.

Once infectious particles reach the alveoli (small saclike structures in the air spaces in the lungs), another cell, called the macrophage, engulfs the TB bacteria.

Then the bacteria are transmitted to the lymphatic system and bloodstream and spread to other organs occurs.

The bacteria further multiply in organs that have high oxygen pressures, such as the upper lobes of the lungs, the kidneys, bone marrow, andmeninges -- the membrane-like coverings of the brain and spinal cord.

When the bacteria cause clinically detectable disease, you have TB

Symptoms

➢The usual symptoms that occur with an active TB infection are :

a generalized tiredness
weakness
weight loss
fever
night sweats.

➢ If the infection in the lung worsens, then further symptoms can include :

coughing
chest pain
coughing up of sputum (material from the lungs) and/or blood
shortness of breath.

➢If the infection spreads beyond the lungs, the symptoms will depend upon the organs involved.

Tests and Diagnosis

- a Tuberculin skin test (Mantoux test)
- X-rays or scans
- These include polymerase chain reaction(PCR) :
  to detect the genetic material of the causative bacteria
- sputum analysis (smear and culture)

Treatment

- **Isoniazid (INH)**
- **rifampin (Rifadin)**
- **Ethambutol (Myambutol)**
- **Streptomycin**
- **Pyrazinamide**

COMPLICATIONS

Bones. Spinal pain and joint destruction may result from TB that infects your bones. In many cases, the ribs are affected

Brain. Tuberculosis in your brain can cause meningitis, a sometimes fatal swelling of the membranes that cover your brain and spinal cord

Liver or kidneys. Your liver and kidneys help filter waste and impurities from your bloodstream. These functions become impaired if the liver or kidneys are affected by tuberculosis.

Heart. Tuberculosis can infect the tissues that surround your heart, causing inflammation and fluid collections that may interfere with your heart's ability to pump effectively. This condition, called cardiac tamponade, can be fatal.

Prevention

- Stay home.
- Ventilate the room
- Wear a mask.
- Cover your mouth.
- Finish your entire course of medication
- Vaccinations

Risk Factors

- ✓HIV/AIDS
- ✓Diabetes
- ✓End-stage kidney disease
- ✓Cancer treatment, such as chemotherapy
- ✓Drugs to prevent rejection of transplanted organs
- ✓Some drugs used to treat rheumatoid arthritis

, Crohn's disease and psoriasis

- ✓Malnutrition
- ✓Advanced age