

Tuberculosis

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- 1/3rd of the worlds population has been infected or exposed to tuberculosis
- MCC of death from infectious diseases in the world as well.
- Caused by Mycobacterium tuberculosis
- Two primary clinical phases and it has potential to infect almost every organ in the body.

Primary TB

- Person who has never been infected with TB comes into contact with TB and contracts the disease
- Symptoms are very wide— many patient are **asymptomatic**-they never know about this primary infection.
- **Fever**- most common symptom
- **Chest pain, cough**
- **CXR**- Normal mostly or hilar adenopathy

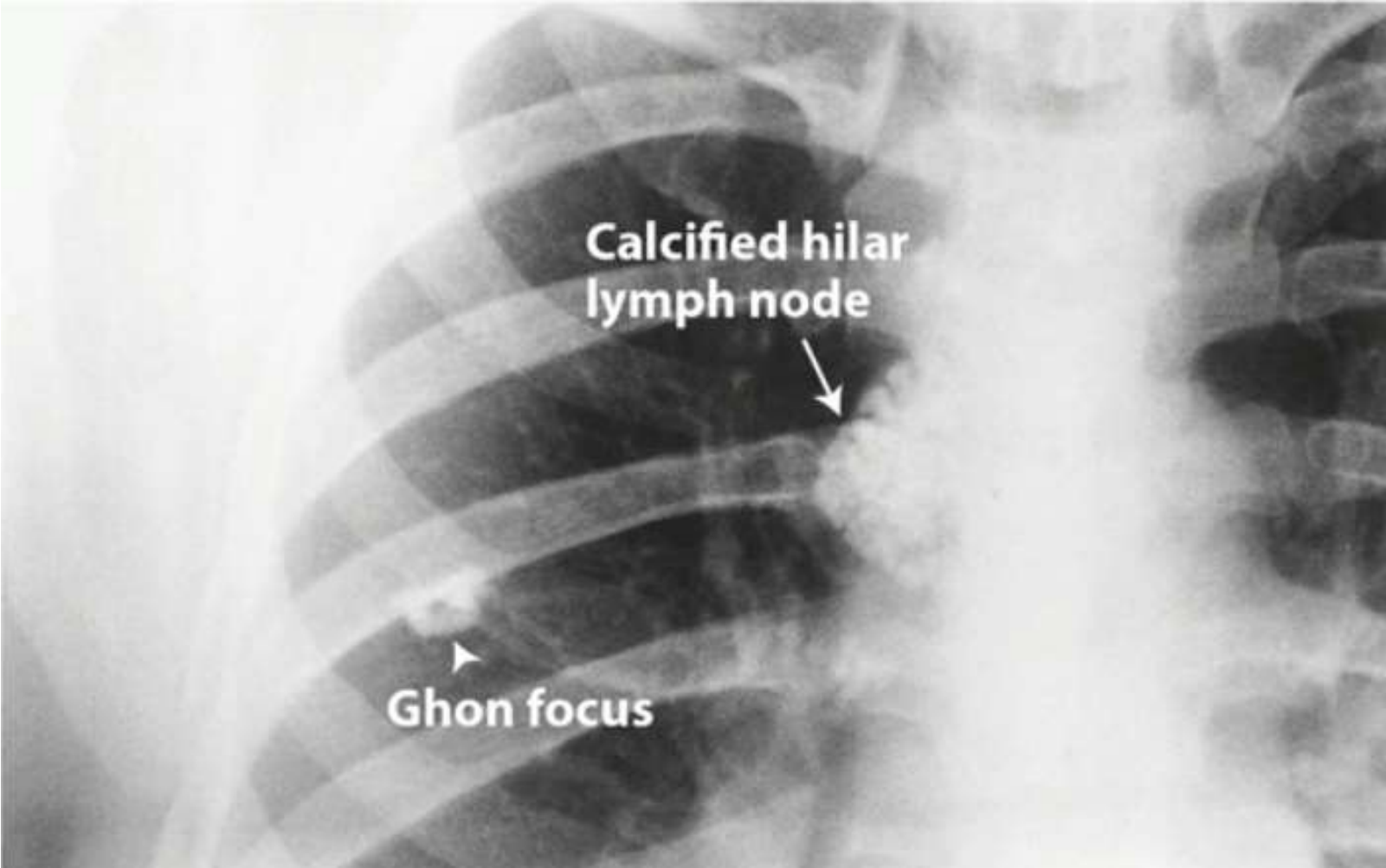
Ghon focus Primary lesion in mid to lower zone of the lung

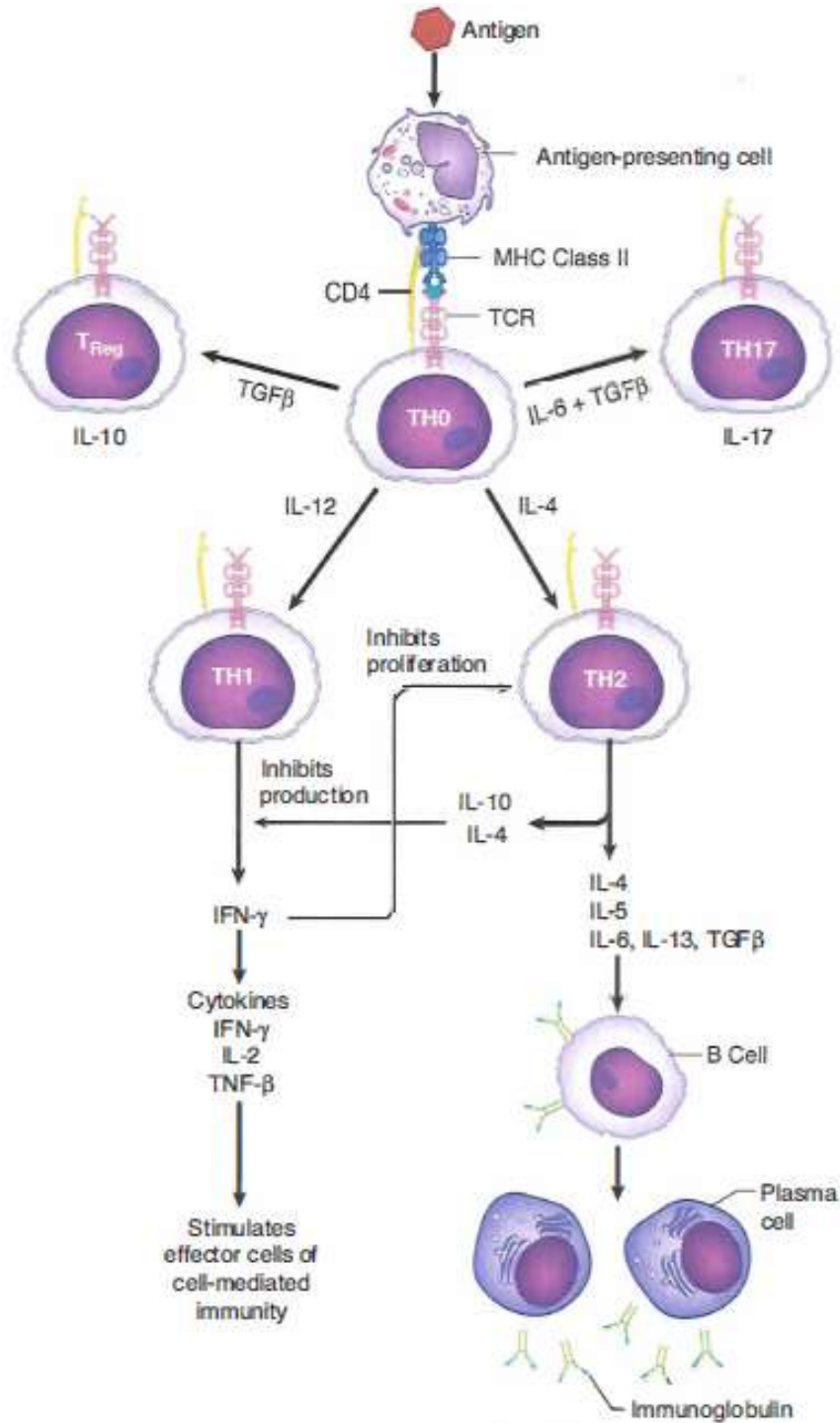
GF upon calcification seen on chest xray

- Small area of granulomatous inflammation

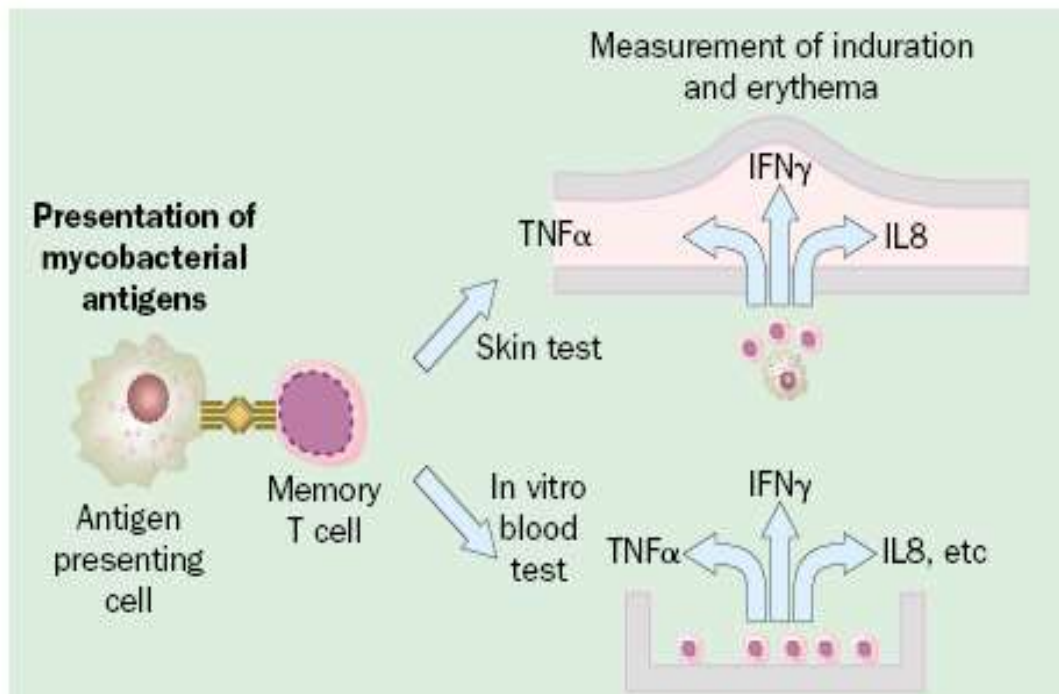
Ghon complex Indication of primary tuberculosis

- Ghon focus
- Hilar adenopathy



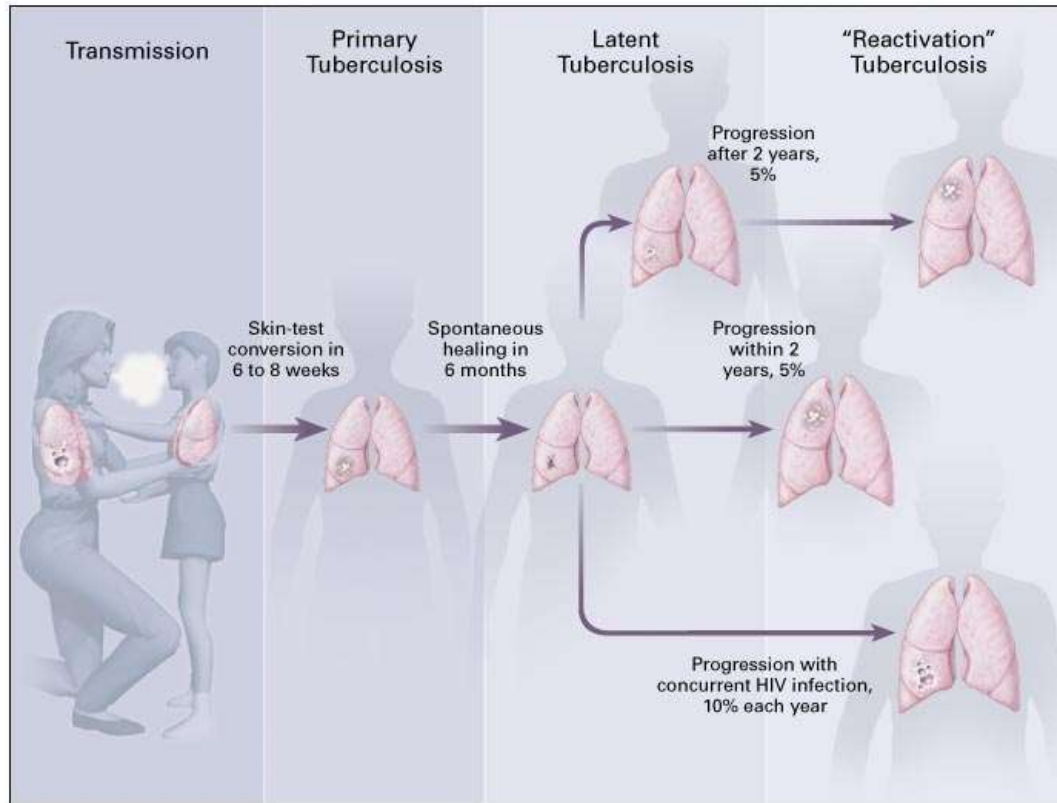


• Interferon Gamma Release Assays



- Rapidly replacing the Mantoux test in developed economies
- More specific than Mantoux for diagnosis of TB infection
- Preventing thousands of treatments for latent TB infection

Transmission of *M. tuberculosis*



Risk factors for progression

- HIV infection
- Diabetes mellitus
- Acquisition of LTBI in infancy or early childhood
- Apical fibronodular changes on chest radiograph
- Use of agents that antagonize the effect of tumor necrosis factor- α

- After tuberculous infection you become PPD positive

PPD skin test

- Positive
 - Current infection
 - Past exposure
 - Vaccination

PPD skin test

- 5 mm induration
 - HIV (+)
 - Close contact with TB
 - CXR findings suggestive of TB

PPD skin test

- 10 mm induration
 - Homeless
 - Immigrants
 - IV drug users
 - Chronically ill
 - Health care workers
 - Recently incarcerated

PPD skin test

- 15 mm induration
 - Always considered positive

PPD skin test

- Negative
 - No infection
 - Anergic
 - Malnutrition
 - Immunocompromise
 - Sarcoidosis

Induration	Considered Positive in these Situations
5 mm	<ul style="list-style-type: none">◦ HIV (+)◦ Close contact with TB-infected persons◦ CXR findings suggestive of TB
10 mm	<ul style="list-style-type: none">◦ Homeless◦ Immigrants from TB endemic regions◦ IV drug users◦ Chronically ill◦ Health care workers◦ Recently incarcerated
15 mm	<ul style="list-style-type: none">◦ Always considered positive

Secondary TB

- Fibrocaceous cavitary lesions

Secondary TB

- H&P
 - Fever
 - Hemoptysis
 - Weight loss
 - Night sweats

Secondary TB

- Complications
 - Parenchymal tuberculoma
 - Meningitis
 - Pott's disease
 - Lymphadenitis
 - Renal disease
 - GI disease
 - Miliary TB

Labs-Investigations

Labs

- Sputum culture (2-4 weeks)
- Acid-fast sputum stain
 - Negative – probably not TB
 - Positive – TB

Treatment

Treatment

- Latent TB
 - INH (6 to 9 months)

Treatment

- Primary or secondary TB
“RIPE”
 - Rifampin
 - INH (with vitamin B6)
 - Pyrazinamide
 - Ethambutol

BCG vaccine

- Can have a false (+) PPD
- 1st year of life
 - After 10 years should be PPD negative