

Pediatric Tuberculosis



Tuberculosis



TB is an infectious bacterial disease of the respiratory system caused by *Mycobacterium tuberculosis*, that can disseminate into a deadly systemic infection.

Definition

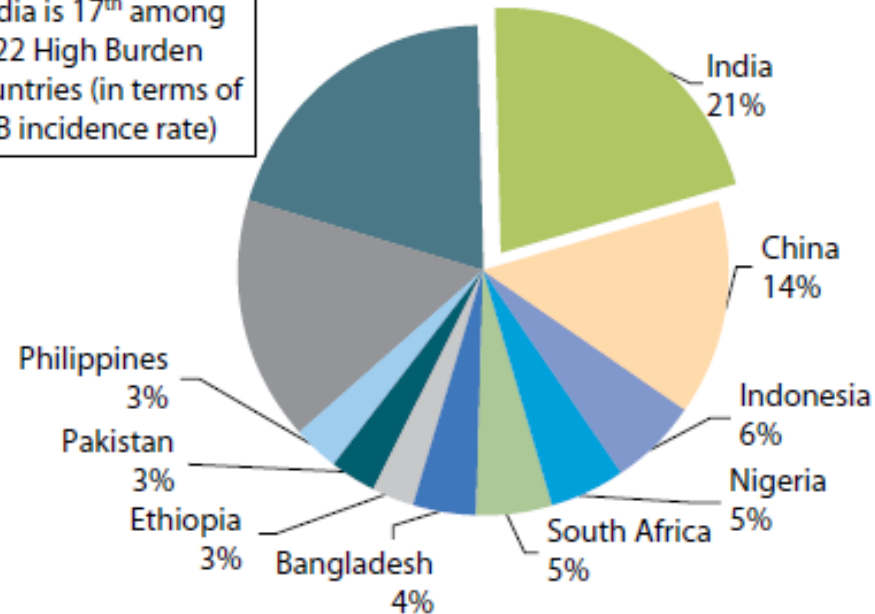
- **MDR-TB** defined as resistance to the 2 main first line anti-TB drugs, rifampicin and isoniazid
- **XDR TB** defined as resistance to at least INH and Rifampicin (i.e. MDR-TB), and 2 more classes of second line anti-TB drugs viz., any fluoroquinolone, and to at least one of the three injectable drugs (capreomycin, kanamycin and amikacin)

TB Burden in India

Figure 1: India is the largest TB burden country accounting for one fifth of the global incidence

Global annual incidence = 9.4 million
India annual incidence = 1.98 million

India is 17th among
22 High Burden
Countries (in terms of
TB incidence rate)



➤ Highest

(of global)

➤ 17th and
terms of

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Pediatric TB: Characteristics

- Infection occurs for first time
- Well marked enlargement of regional lymphatic nodes
- Tubercle bacilli spread by lymphatic & hematogenous route
- Cavity in primary TB is thin walled
- Primary infection usually non-infectious
- Mortality mainly due to extrapulmonary TB
- Healing by mainly calcification

Adult TB: Characteristics

- Tissues already exposed.
- Lowering of immune defences locally in lungs, leads to reactivation & mainly locally progressive disease.
- No significant regional or hilar LAP.
- Localized to one organ.
- Hematogenous spread uncommon.
- Main cause of death.
- Healing of lesions by fibrosis.

Types of Tuberculosis

- Primary TB
- Secondary Reactivated TB
- Disseminated TB

Pathogenesis

Primary

➤ Negative

➤ Airborne

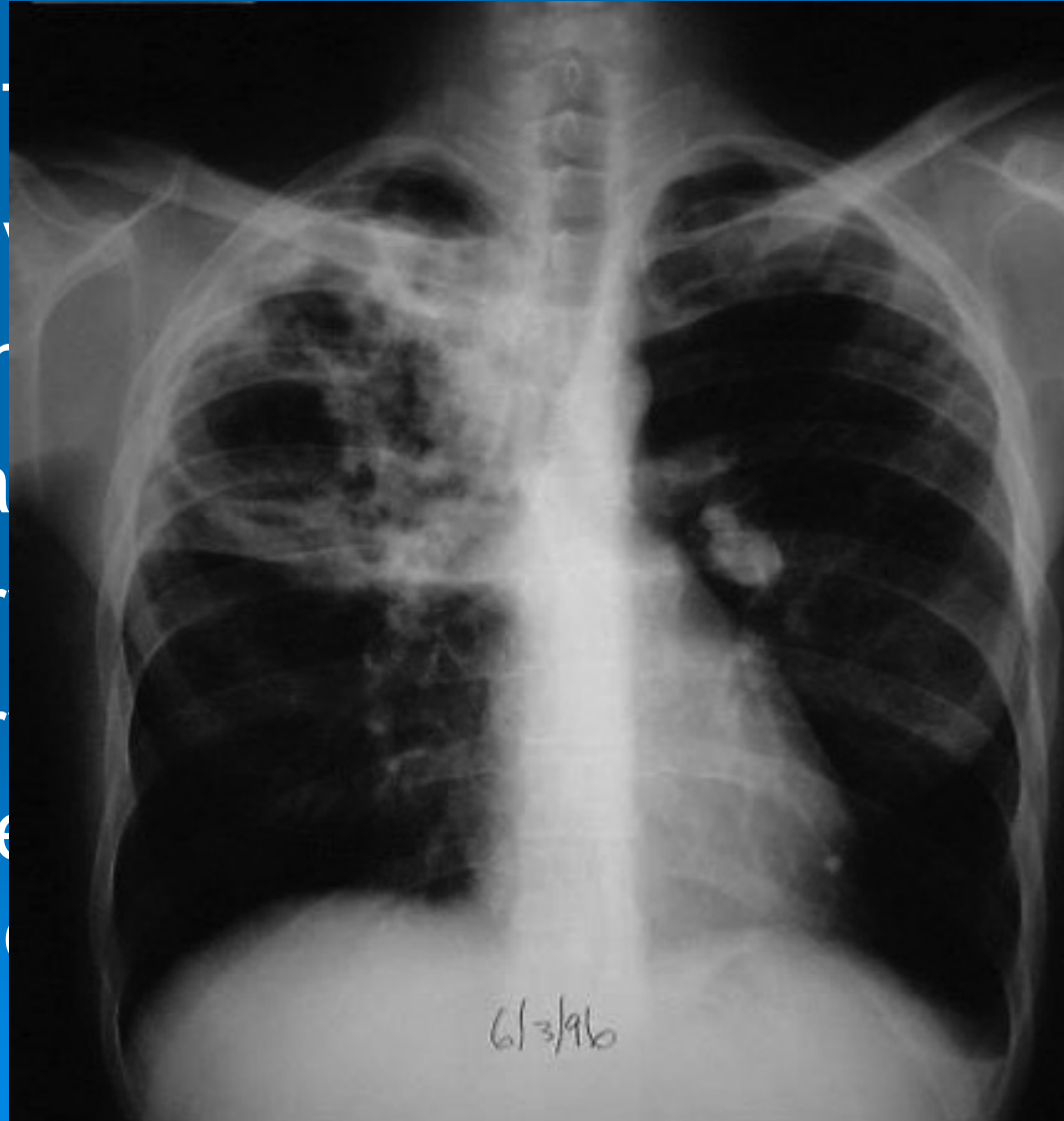
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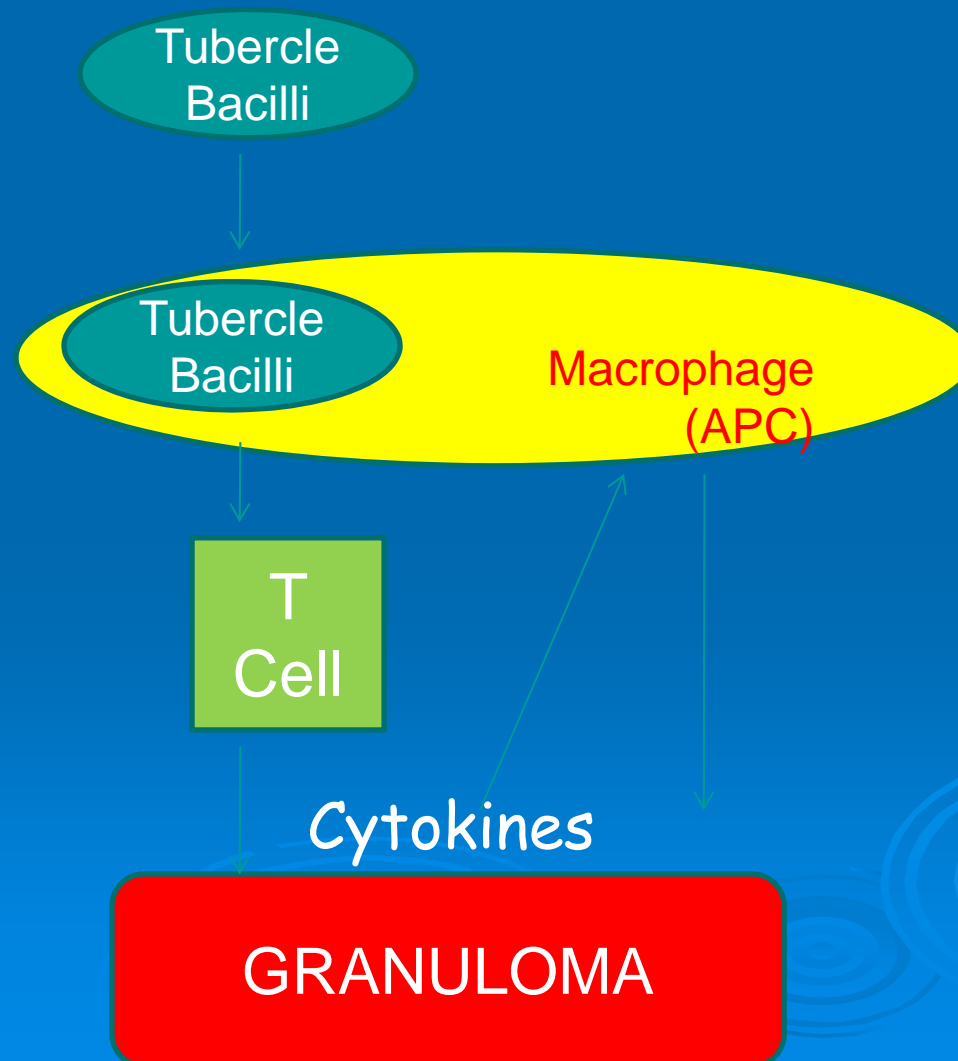
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Pathogenesis cont...

- Intracellular infection
 - Spreads via lymphatics & blood stream
 - Delayed type immunological reactivity
 - Controlled by T lymphocytes.
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Host immune response to TB

CMI:



Host immune response to TB cont

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DTH:

- Due to T suppressor cells
- Specific or non specific
- Leads to destruction of host tissues & may contain bacteria.

Tuberculosis without tubercles




Response to TB infection

1. Only infection & no disease.
2. Primary complex development.
3. Progressive disease
4. Granulomatous necrotizing or destructive cavitory TB.
5. Pneumonic form with no cavity


TB Spectrum




Parenchymal Progression

- PC
 - HPC
 - Pneumonia
 - Primary cavity
 - Bronchopneumonia
 - Pleurisy
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Complicated LN TB

- Mediastinal LN enlargement
 - Partial bronchial obstruction
 - Complete bronchial obstruction
 - Rupture of subcarinal LN
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Hematogenous spread

- Miliary TB
 - CNS TB
 - Disseminated TB
 - Dactylitis
 - Isolated bone & joint involvement
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Chronic Pulmonary Tuberculosis

- Assmann's focus
- Pulmonary infiltration
- CPT: Cavitary
Fibrous
Fibrocaseous

Impact of BCG Vaccination

Intrathoracic versus Extrathoracic



Thanks

