Pediatric Tuberculosis
TB Burden in India

• Highest TB burden country (1/5\textsuperscript{th} of global)

• 17\textsuperscript{th} among 22 high burden countries in terms of TB incidence.

WHO Report 2009
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.
Pathogenesis

Primary TB:

• Negative Mx to Positive Mx
• Airborne usually
• Incubation period: 4-8 weeks
• Primary focus: Apex of upper or lower lobe
• Primary focus in the lung, lymphangitis & enlarged hilar LN known as Primary Complex of Ranke
Pathogenesis cont...

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

CMI:

- Tubercle Bacilli
- Tubercle Bacilli
- Macrophage (APC)
- T Cell
- Cytokines

GRANULOMA
Host immune response to TB cont ...

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 cavitary TB.

5. Pneumonic form with no cavity
TB Spectrum
Parenchymal Progression

• PC
• HPC
• Pneumonia
• Massive pneumonia
• Primary cavity
• Bronchopneumonia
• Pleurisy
Complicated LN TB

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

• Miliary TB

• CNS TB

• Disseminated TB

• Dactylitis

• Isolated bone & joint involvement
Chronic Pulmonary Tuberculosis

• Assmann’s focus

• Pulmonary infiltration

• CPT: Cavitary
  Fibrous
  Fibrocaseous
Impact of BCG Vaccination

Intrathoracic versus Extrathoracic
RNTCP

• Based on internationally recommended DOTS

• Launched in 1997

• Expanded in phased manner

• Support from World Bank
Objectives of RNTCP

• To achieve & maintain cure rate of at least 85% among new sputum positive (NSP) patients

• To achieve & maintain case detection of at least 70% of estimated NSP cases in the community.
RNTCP cont...

- PWB started since 2006