Leprosy: classification and clinical features
• Chronic infection caused by *M. leprae*

• Skin, mucous membrane and peripheral nerves

• Long IP, chronic course punctuated by episodes of immunological events (reactions)
Routes of transmission

• Source – untreated open LL case

• Routes
  – Droplet inhalation
  – Skin-to-skin
  – ? Ingestion
  – ? Insect-borne
Cardinal features

- Hypoesthesia/anesthesia over an area innervated by a peripheral nerve with/without typical skin lesion(s)

- Thickened peripheral nerves with/without tenderness

- Demonstration of AFBs in SSS
Classification

• Indian
  – Lepromatous
  – Tuberculoid
  – Maculo-anaesthetic
  – Pure neuritic
  – Borderline
  – Indeterminate
• **Ridley-Jopling** (clinical, immunological and histological)
  
  – Tuberculoid (TT)
  – Bordereline tuberculoid (BT)
  – Mid-Borderline (BB)
  – Borderline Lepromatous (BL)
  – Lepromatous (LL)
Clinical features
Indeterminate leprosy (I)

- Children in endemic areas
- Face / extremities
- Ill defined, hypopigmented patch with/without sensory loss
- 30% progresses to definite disease, usually lower spectrum
Tuberculoid leprosy (TT)

- One to three patches with well-defined raised borders
- Dry, hairless and anaesthetic
- Thickened regional peripheral nerve with/without tenderness
Borderline tuberculoid leprosy (BT)

- One to ten patches with *Satellite lesions*
- Hypo- to anesthetic, dry, less well-defined
- Thickened peripheral nerve(s) with/without tenderness
Mid-borderline leprosy (BB)

- Multiple lesions, smaller than BT, asymmetrical distribution, hypoesthetic

- Punched-out plaques with inner vertical edge and outer sloping edges – “inverted saucer shape”

- Thickened peripheral nerves with/without tenderness – multiple and asymmetrical
Borderline lepromatous leprosy (BL)

- Numerous smaller lesions, b/l and less symmetrical
- Macules, papules, plaques
- Multiple peripheral nerve thickening – asymmetrical
- Sensation ±
Lepromatous leprosy (LL)

- Innumerable lesions / diffuse infiltration
- Ill-defined macules, papules, nodules
- Bilateral and symmetrical
- Shiny, hypopigmented, coppery
- Loss of sensation ±
- Gloves & stockings hypoesthesia
Reactions
• Type I
  – Upgrading
  – Downgrading

• Type II (Erythema nodosum leprosum)
Type I reaction (T1R)

- Seen in borderline leprosy

- Either with initiation of treatment (upgrading) or lack of it (downgrading). May also be precipitated by stress, infections, pregnancy etc.

- Type IV hypersensitivity to *M. leprae* and/or its antigens
• Preexisting lesions become erythematous, tender and edematous; few new ones may develop

• Already thickened nerves become tender (neuritis)

• Sudden sensory and/or motor loss may develop depending on the severity
Erythema nodosum leprosum (T2R)

- Seen in LL and/or BL
- Multisystem disorder
- Type III hypersensitivity reaction
- Precipitated by infection, stress, pregnancy, treatment
• Evanescent, tender, erythematous nodules

• Appear in crops, persist 2-3 days, heal with hyperpigmentation

• Associated fever, joint pain, LNP, iritis/iridocyclitis, epididymo-orchitis

• Systemic involvement

• No change in preexisting lesions
Complications

• Related to leprosy

• Related to reactions
Complications related to leprosy

- Trophic ulcer
- Facial deformities
- Resorption of digits (bony involvement)
- Dactylitis
- Ocular leprosy... blindness
- Sterility in male
- Systemic involvement
Resorption of digits
Concentric bone atrophy
Dactylitis
Trophic ulcer
Complications related to reactions

• Nerve palsy .. Claw hands & toes, foot drop, wrist drop, facial palsy

• Type 2 rxn related systemic involvement
  arthritis
  orchitis
  glomerulonephritis, amyloidosis (recurrent type 2 rxn)
  iridocyclitis
  neuritis
  pneumonia
  hepatitis
  Acute laryngeal edema
Nerve palsy