Classification of Leprosy

WHO Classification

Clinical Classification
WHO Classification:

Two types: Purpose of treatment.

1. Paucibacillary Leprosy (PB)

2. Multibacillary Leprosy (MB)

Based on:

- Number of skin lesions
- Number of nerves involved
<table>
<thead>
<tr>
<th></th>
<th>Paucibacillary Leprosy (PB)</th>
<th>Multibacillary Leprosy (MB)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Skin Lesions:</strong></td>
<td>1 to 5 lesions</td>
<td>&gt; 5 lesions</td>
</tr>
<tr>
<td></td>
<td>Asymmetrical</td>
<td>Towards Symmetrical</td>
</tr>
<tr>
<td></td>
<td>Definite Loss of sensation</td>
<td>Loss of sensation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(May be / May not be)</td>
</tr>
<tr>
<td><strong>Nerve Lesions:</strong></td>
<td>Only 1 nerve involved</td>
<td>2 or more nerve involved</td>
</tr>
</tbody>
</table>
Clinical Classification:

Ridley and Joppling classified leprosy clinically into the following:

1. Tuberculoid (TT)
2. Borderline Tuberculoid (BT)
3. Mid Borderline (BB)
4. Borderline Lepromatous (BL)
5. Lepromatous (LL)

BB Leprosy is immunologically the least stable, and therefore the rarest.
Pure Neural Leprosy:

In all forms of leprosy, at least one peripheral nerve is attacked by M. Leprae, though this may not have any clinical evidence.

Leprosy can involve nerves without any skin changes. This unusual occurrence is called Pure Neural Leprosy.
Leprosy is a unique infectious disease, which exhibits a wide spectrum of signs and symptoms.

These various signs and symptoms represent:

1. Patient’s ability to contain the bacilli

2. Bacillus’ ability to adapt as a human parasite

when the patient’s ability fails, he gets clinical form of disease M. Leprae seldom kills its host.
Cell Mediated Immunity (CMI): Most importantly which the Infection is contained 

Healing takes place.

Determinant of clinical features

Good CMI → TT
Moderate CMI → Borderline
Absent CMI → LL
CMI to M. Leprae is absent or suppressed: **Lepromatous Leprosy**

Bacilli multiply and accumulate.

If CMI is present: **Tuberculoid Leprosy**

Infection localized

Tends to heal.

Between these Extremes: Spectrum of **Borderline leprosy**,
Healthy Person

M. leprae

Indeterminate Leprosy (Sub clinical Stage)

Clinical Features

PB
TT
1-3
Patches with Anesthesia

BT
4 to Multiple

MB
BB
Multiple

BB
BB
Multiple

BL
Multiple

LL
Multiple

Patches without Anesthesia

Patches or plaques

Nodules

D. Infl.
Clinical Features

- TT
- BT
- BB
- BL
- LL

Healthy Person

M. leprae

Indeterminate Leprosy (Sub clinical Stage)

- No. of Patches
  - 1-3
  - 4 to multiple
  - Multiple

- Size of Patches
  - Big
  - Medium to Small
  - Small

- Anesthesia
  - ++
  - + / -
  - -

- Border
  - Clear
  - Clear at some places
  - Slightly ill-defined

- Symmetry
  - Asymmetrical
  - Symmetry starts
  - Symmetrical

- M. leprae Clinical Features

Indeterminate Leprosy

(Sub clinical Stage)
Treatment of Leprosy
# Criteria for grouping

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Characteristic</th>
<th>PB (Pauci bacillary)</th>
<th>MB (Multi bacillary)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Skin lesions</td>
<td>1 – 5 lesions</td>
<td>6 and above</td>
</tr>
<tr>
<td>2</td>
<td>Peripheral nerve</td>
<td>No nerve / only one nerve</td>
<td>More than one nerve</td>
</tr>
<tr>
<td></td>
<td>involvement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Skin smear</td>
<td>Negative at all sites</td>
<td>Positive at any site</td>
</tr>
</tbody>
</table>
# Treatment of leprosy & std. regimen

- **Cap Rifampicin**: 10 mg/kg body weight (bw)
- **Cap Clofazimine**: 1 mg/kg bw daily and 6 mg/kg bw for monthly dose
- **Tab Dapsone**: 2 mg/kg bw daily

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PB Adult</strong></td>
<td>For people with PB leprosy and 15 years of age or more</td>
</tr>
<tr>
<td><strong>MB Adult</strong></td>
<td>For people with MB leprosy and 15 years of age or more</td>
</tr>
<tr>
<td><strong>PB child</strong></td>
<td>For people with PB leprosy and 10-14 years of age</td>
</tr>
<tr>
<td><strong>MB child</strong></td>
<td>For people with MB leprosy and 10-14 years of age</td>
</tr>
</tbody>
</table>
Advantages of Multi Drug Therapy (MDT)

• Safe, minimal side effects and increased patient compliance
• Kills the bacilli
• Stops progress of the disease
• Prevents further complications and reduces chances of relapse
• Renders LAP non-infectious,
• Reduces transmission and spread of disease
• Reduces chances development of resistance
• Reduces duration of the treatment
• Available in blister pack; easy to dispense, store and take
New case of leprosy: Person with signs of leprosy who have never received treatment before.

Other cases: Under NLEP all previously treated cases, who need further treatment are recorded as “other cases” including migrants

- Relapse cases of PB/MB
- Reentered for treatment (include defaulters) - Previously treated cases, clinical assessment shows requirement of further treatment

- Defaulter:
  - PB 6 pulses in nine consecutive months
  - MB 12 pulses in 18 consecutive months
Indications for prescribing MDT

- **Referred cases:** Patient referred for completion of treatment \(\text{Carries a referral slip}\)

- **Change in classification:** Appearance of more lesions

- **Cases from outside the state & Temporary migration or cross border cases:**

- **Indigenous case:** Residing for more than six months likely to stay till completion of treatment,
<table>
<thead>
<tr>
<th>Type of leprosy</th>
<th>Drugs used</th>
<th>Frequency of Administration</th>
<th>Dosage (adult) 15 years &amp; above</th>
<th>Dosage (Children 10-14 years)</th>
<th>Dosage Children Below 10 years</th>
<th>Criteria for RFT</th>
</tr>
</thead>
<tbody>
<tr>
<td>MB leprosy</td>
<td>Rifampicin</td>
<td>Once monthly</td>
<td>600 mg</td>
<td>450 mg</td>
<td>300 mg</td>
<td>Completion of 12 monthly pulses in 18 consecutive months</td>
</tr>
<tr>
<td></td>
<td>Clofazimine</td>
<td>monthly</td>
<td>300 mg</td>
<td>150 mg</td>
<td>100 mg</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dapsone</td>
<td>Daily Once</td>
<td>100 mg</td>
<td>50 mg</td>
<td>25mg</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Clofazimine</td>
<td>Daily for adults (every other day for children)</td>
<td>50 mg</td>
<td>50mg</td>
<td>50mg (alternate day, not daily)</td>
<td></td>
</tr>
<tr>
<td>PB leprosy</td>
<td>Rifampicin</td>
<td>Once monthly</td>
<td>600 mg</td>
<td>450 mg</td>
<td>300mg</td>
<td>Completion of 6 monthly pulses 9 consecutive months</td>
</tr>
<tr>
<td></td>
<td>Dapsone</td>
<td>Daily</td>
<td>100 mg</td>
<td>50 mg</td>
<td>25mg daily or 50 mg alternate day</td>
<td></td>
</tr>
</tbody>
</table>
MDT Regimens

Each blister pack contains treatment for 4 weeks.

PB adult treatment:
Once a month: Day 1
- 2 capsules of rifampicin (300 mg X 2)
- 1 tablet of dapsone (100 mg)
Once a day: Days 2–28
- 1 tablet of dapsone (100 mg)
Full course: 6 blister packs

PB child treatment (10–14 years):
Once a month: Day 1
- 2 capsules of rifampicin (300 mg+150 mg)
- 1 tablet of dapsone (50 mg)
Once a day: Days 2–28
- 1 tablet of dapsone (50 mg)
Full course: 6 blister packs
For children younger than 10, the dose must be adjusted according to body weight.

MB adult treatment:
Once a month: Day 1
- 2 capsules of rifampicin (300 mg X 2)
- 3 capsules of clofazimine (100mg X 3)
- 1 tablet of dapsone (100 mg)
Once a day: Days 2–28
- 1 capsule of clofazimine (50 mg)
- 1 tablet of dapsone (100 mg)
Full course: 12 blister packs

MB child treatment (10–14 years):
Once a month: Day 1
- 2 capsules of rifampicin (300 mg+150 mg)
- 3 capsules of clofazimine (50 mg X 3)
- 1 tablet of dapsone (50 mg)
Once a day: Days 2–28
- 1 capsule of clofazimine every other day (50 mg)
- 1 tablet of dapsone (50 mg)
Full course: 12 blister packs
For children younger than 10, the dose must be adjusted according to body weight.

It is crucial that patients understand which drugs they have to take once a month and which every day.
MDT Blister packs

First dose of the month

Doses for alternate day

Daily dose from second day

MB (Adult) Blister pack

MB (Child) Blister pack

PB (Adult) Blister pack

PB (Child) Blister pack
Before and after treatment
## Side effects of Dapsone

<table>
<thead>
<tr>
<th>Minor</th>
<th>Common side effects</th>
<th>Signs and symptoms</th>
<th>What to do if side effects occur</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anaemia</td>
<td>Paleness inside the lower eyelids, tongue and fingernails, Tiredness, oedema of feet and breathlessness</td>
<td>Give anti-worm treatment and iron and folic acid tablets. Continue dapsone.</td>
<td></td>
</tr>
<tr>
<td>Abdominal symptoms</td>
<td>Abdominal pain, nausea, and vomiting with high doses</td>
<td>Symptomatic treatment. Reassure the patient Give drug with food</td>
<td></td>
</tr>
</tbody>
</table>

| Serious                | Severe skin complication (Exfoliate dermatitis) Sulphone hypersensitivity Haemolytic anemia | Extensive scaling, itching, ulcers in the mouth and eyes, jaundice and reduced urine output Itchy skin rash | Stop Dapsone. Refer to hospital immediately. Never restart. |

|                        | Liver damage (Hepatitis) | Jaundice (yellow Colour of skin, eyeballs and urine) Loss of appetite and vomiting | Stop Dapsone. Refer to hospital. Restart after the jaundice subsides |
| Kidney damage (Nephritis) | Oedema of face and feet. Reduced urine output | Stop Dapsone. Refer to hospital |
## Side effects of Rifampicin

<table>
<thead>
<tr>
<th>Minor adverse effects</th>
<th>Side effects</th>
<th>Signs and symptoms</th>
<th>What to do if side effects occur</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red discoloration of body fluids</td>
<td>Reddish coloration of urine, saliva and sweat</td>
<td>Reassure the patient and continue treatment</td>
<td></td>
</tr>
<tr>
<td>Flu like illness</td>
<td>Fever, malaise and body ache</td>
<td>Symptomatic treatment</td>
<td></td>
</tr>
<tr>
<td>Abdominal symptoms</td>
<td>Abdominal pain, nausea, and vomiting</td>
<td>Symptomatic treatment. Reassure the patient Give drug with food</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Serious adverse effects</th>
<th>Side effects</th>
<th>Signs and symptoms</th>
<th>What to do if side effects occur</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hepatitis (liver damage)</td>
<td>Jaundice (yellow colour of skin, eyeballs and urine). Loss of appetite and vomiting</td>
<td>Stop Rifampicin. Refer to hospital. Restart after the jaundice subsides.</td>
<td></td>
</tr>
<tr>
<td>Allergy</td>
<td>Skin rash or Shock, purpura, renal failure</td>
<td>Stop Rifampicin</td>
<td></td>
</tr>
</tbody>
</table>
## Side effects of Clofazimine

<table>
<thead>
<tr>
<th>Side effects</th>
<th>Signs and symptoms</th>
<th>What to do if side effects occur</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin pigmentation (Not Significant)</td>
<td>Brownish-red discoloration of skin, urine, and body fluids</td>
<td>Reassure the patient, it disappears after completion of treatment</td>
</tr>
<tr>
<td>Acute Abdominal symptoms</td>
<td>Abdominal pain, nausea and vomiting on high doses</td>
<td>Symptomatic treatment. Reassure the patient. Give drug with food. If intractable stop clofazimine</td>
</tr>
<tr>
<td>Ichthyosis (diminished sweating)</td>
<td>Dryness and scaling of the skin, itching</td>
<td>Apply oil to the skin. Reassure the patient.</td>
</tr>
<tr>
<td>Eye</td>
<td>Conjunctival dryness</td>
<td>Moistening eye drops/frequent washing of eyes</td>
</tr>
</tbody>
</table>
Criteria to restart course of MDT

- **Relapse of Leprosy**: confirmed by laboratory.

- **Drop out cases**: Discontinued MDT > 3 months in PB
  > 6 months in MB leprosy
  Active signs of leprosy.

- **Active disease persists / new signs developed within a year,**

- **Suspicion of drug resistance**
Basic principles for management of ocular lesions

- **Immediate referral**: Impairment of vision
  Red painful eye,
  Infrequent blinking,
  Lag-ophthalmos

- **Start MDT**: if not taken previously

- **Manage conjunctivitis**: frequent cleaning of eye
  Tropical antibiotic application
  Rest to the eye by padding.

- **Eyelashes**: < 5 or > 5

- **Follow up treatment** as advised

- **Self care**: After acute phase is over. (Refer section on POD)

- **No perception of light’** (NPL): Incurably blind