

A Brief Review on Hansen's disease (Leprosy)

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Abstract

Leprosy is an infectious disease that is brought on by the rod-shaped, acid-fast bacteria *Mycobacterium leprae*. The illness mostly affects the skin, eyes, peripheral nerves, and mucosa of the upper respiratory tract. Leprosy is curable, and prompt medical attention can help avoid disability. Multidrug therapy can be used to treat leprosy (MDT). Droplets from the lips and nose are prone to spread leprosy during frequent and intimate contact with untreated people. For the disease to be completely eradicated as a public health problem, early detection and treatment with multidrug therapy (MDT) are necessary. If leprosy is not treated, it can result in long-term harm to the skin, nerves, limbs, and eyes. There were 208 619 new leprosy cases worldwide in 2018, according to official data from 159 countries in six different WHO regions. Based on statistics, the prevalence rate is 0.2/10 000.

Keywords: Leprosy, *Mycobacterium leprae*, Multi Drug Therapy (MDT), disease transmission.

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INTRODUCTION

Leprosy is another name for the Hansen Disease. *Mycobacterium leprae* is the cause of leprosy, which has been known since the time of the Bible. Long-term close contact between genetically predisposed and vulnerable people and untreated multibacillary patients is the main method of leprosy transmission. Bacilli found in upper airway discharge are transmitted through inhalation. The main point of entry or departure for *M. leprae* is the nasal mucosa. Understanding the pathogenesis, variations in the clinical features and progression of the disease have been made possible by a deeper understanding of the structural and biological characteristics of *M. leprae*, the sequencing of its genome, as well as scientific advancements in the mechanisms of host immune response against the bacilli. This article seeks to provide an update on epidemiology.

The disease leprosy is contagious and has a protracted incubation period. This illness is frequently referred to as a "social disease" since societal factors contribute to its transmission. *M. leprae* develops slowly, and the illness often takes 5 years to manifest. The time it takes for symptoms to manifest can range from a year to 20 years or longer. The illness mostly affects the skin, eyes, peripheral nerves, and mucosa of the upper respiratory tract.

DEFINITION

Leprosy (*Hansen's disease*) Is Chronic Infections Disease Caused by *Mycobacterium leprae*. This Disease Affects Mainly The Peripheral Nerves. It Also Affects The Skin, Muscles, Eyes, Bones And Internal Organs.

Causative Organism

Mycobacterium leprae"or *Leprae bacilli*"is the bacteria that causes leprosy.

Signs and Symptoms of Leprosy

Headache, Malaise, Chilliness, Mental depression, Numbness of body.

Main Diagnostic Signs

- Skin blemishes or hypopigmented areas In leprosy-affected areas
- Finger amputation,
- Toes with claws,
- Nerves thicken and hair begins to fall out.
- Tumors on the face and ears' skin,
- Sweating cessation or hair loss over the skin lesion
- Total or partial loss of sensation (pain, touch, and temperature) is common.

Modes of Transmission

- **Contact Transmission:** The lepra bacilli are transferred by close contact with families and

leprosy patients. Another potential is indirect interaction with soil spores.

- **Droplet Infection:** Leprosy is frequently brought on by droplet infection, which is spread by sneezing and coughing.
- **Other Routes of Transmission:** Include mother-to-child breast milk, insect (vector) bites (such as flea and bed bug bites), and tattoo needles.

Incubation Period: 3-5 Years

Classification: leprosy is classified as follows-

A. Madri Classification

1. Indeterminate Leprosy (IL)
2. Tuberculoid Leprosy (TL)
3. Borderline Lepromatous (BL)
4. Lepromatous Leprosy (LL)

B. Indian Classification of Leprosy

The Indian classification (1981) is classified by Indian leprosy association (Hind Kusht Nivaran Sangh). It is a clinico-bacterial classification:

- **Intermediate Leprosy:** Is defined by the presence of one or two indistinct hypopigmented macules and normal but occasionally reduced feeling. Bacteriologically, the lesions are negative.
- **Tuberculoid Leprosy** One or two clearly defined lesions, which may be raised or flat, hypopigmented or erythematous, are present. Expansion of peripheral nerves.
- **Borderline Leprosy:** Four or more lesions that are flat or raised, well-defined or ill-defined, hypopigmented or erythematous, and have sensory loss or impairment. Numerous bacterial positives are present.
- **Lepromatous Leprosy:** The body is covered in flat or raised, ill-defined, shiny, smooth lesions that are distributed symmetrically. Eyelashes and brows are absent. Bacteriological tests have shown these to be positive.
- **Pure Neurotic Leprosy:** There are no skin lesions, yet it affects nerve endings.

Diagnostic Tests

1. Complete physical examination of the patient and case history.
2. Histamine test.
3. Serum examination.
4. Biopsy examination
5. Laboratory test of secretions of nose, throat and skin of the patient.

Complications

1. Partial or complete deformity or handicap
2. Loss of manpower or national loss.
3. Social and mental tension etc.

Leprosy Control

Community Nurses Play a Major Role.

Community nurses are a key component in the leprosy

control. All leprosy control programs are said to require the following components as a minimum.

1. **Medical Measures:** Estimation of the issue, early case discovery, medication therapy with several agents, surveillance, immunoprophylaxis, chemotherapy prophylaxis, deformities, rehabilitation, and others.
2. **Social assistance.**
3. **Program administration.**
4. **Assessment.**

As a community health nurse, she must provide explanations for three areas of medical management, namely: upkeep of cleanliness, Loss of sensation affects how one takes care of their hands, feet, shoes, etc.

Treatment

Dapsone has an important drug for the treatment of Leprosy; Govt. of India has recommended the drugs as-

1. Paucibacillary Patients

- Dapsone -100mg daily - 6months
- Rifampicin - 600mg once a month

After the completion of 6 months dapsone may be continued according to the condition of the patient observation is necessary for at least two years after the treatment.

2. Multibacillary Patients

- Dapsone 100mg daily - for initial 2 weeks.
- Rifampicin 600 mg daily - for initial 2 weeks.
- After that the treatment given 2 years.
- Dapsone 100mg daily.
- Rifampicin 600mg once a month
- Clofazamine 50mg daily.

Daily treatment diagnostic test and follow up should be continued up to 5 years.

Duration of Treatment

1. Paucibacillary leprosy for 6 months
2. Multibacillary leprosy for 12 months
3. Educate the people regarding multidrug therapy.
4. Educate the importance of regular treatment.
5. Educate how to take medicine, storage of medicines, side effects of medicines etc.
6. Explain about the duration of treatment

Body Hygiene

- i. Washing your hands with soap every day is essential.
- ii. Wash every area of your body every day.
- iii. Give hands (or feet) that lack sensation special attention.

Clothing Hygiene

Unclean clothing serves as a haven for fleas, lice, and other parasites, which irritate the skin and let pathogens in.

Hygiene

People with dirty habits are more likely to get leprosy than those with clean habits because dirt brings disease (or) sickness.

Hygiene Upkeep for Homes

- Sweep the house and corners daily and properly dispose of the dirt.
- Let fresh air in by opening the windows.
- Maintain a spotless bathroom.

It's Crucial to Maintain the Grounds around the House

- Keep the grass mowed to maintain good hygiene.
- Put kitchen trash in the dustbin rather than throwing it out into the compound.

Sensation Loss

Skin Care

- Wash your hands and feet every evening after work, preferably with soap.
- Submerge the hands (or feet) in water for at least 20 minutes.
- After bathing, scrape off any dead skin with a stone (or) finger; do not use a razor blade.
- Do not use butter to moisturize your skin; instead, use cooking oil or Vaseline. It's essential to soak

Foot Care

- After washing your feet, examine them and push with your thumb on the six locations marked with a "x" on the thumb, and so on.
- If the region is swollen, itchy, or red. These issues should raise red flags.
- If we don't walk, we can prevent it.
- Take a break from work and rest your foot at home.
- Don't walk to the clinic if you require a bandage.
- Rest is the most fundamental kind of treatment.
- If you've lost feeling in your feet, wear the appropriate shoes to protect them.
- When you're walking, take small steps. The feet won't be under as much stress.
- Steer clear of uneven terrain.

Eye Care

- Common activities like blinking the eyelids 20 times three times a day can aid in the early stages of eyelid thinning.
- Check your eyes every day to see whether you lose sensation in them. To see if there are any dust particles in your eye, use a mirror. If so, take them off using a fresh piece of cloth.
- At night, cover your eyes with a fresh cloth (or a bed sheet). This will stop dust from entering our eyes through the home's roof, which we are unable to see.
- Cleanse your hands and apply some fresh oil to your eyes if they are dry; having dry eyes is harmful.
- If there is direct sunlight, use eye protection.

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