

Leprosy

Leprosy (Hansen's disease) is a chronic, systemic infectious disease, affecting primarily the peripheral nerves and secondarily the skin mucous membranes, the eyes, bones, lymph nodes and viscera.

- ① chronic granulomatous infection caused by acid Fast bacteria *Mycobacterium leprae*. (MI)
- ① MI cannot be grown on culture media -- in-vitro drug sensitivity is not possible.
- ① Growth and drug susceptibility are done by injecting inoculate in mouse foot pad.
- ① Live dormant in macrophages but alive.
- ① Transmitted from person to person through nose skin lesions of the infected persons.
- ① Affect mainly PNS, NS, Skin and various tissues.

History of leprosy:

- ① Leprosy was recognized in the ancient civilizations of China, Egypt and India.
- ① Discovered by Gerhard Armauer Hansen in 1873.

Transmission:

- ① The exact mechanism of transmission of leprosy is not known.
- ① The most widely held belief is that the disease is transmitted by contact between cases of leprosy and healthy persons.

Sub!

- ① Transmission nasal ~~dis~~ discharges.
- ① Leprosy is known to occur at all ages ranging from early infancy to very old age.

Mode of infection:

Leprosy is slow communicable disease and incubation period is between first exposure and appearance of signs of disease.

Direct contact → Prolonged close contact of susceptible individuals to an open cause of leprosy. (damaged skin, nasal secretions, mucous, membrane contact)

Materno-fetal transmission: ⇒ Transmission from milk from mother to infant.

Risk factors for leprosy:

- ① close contact → contacts of patients with leprosy have a higher risk of developing leprosy than the general population.
- ① People who live in the areas where leprosy is endemic
- ① Immunity → Immuno compromised individuals are more susceptible to infection.
- ① Genetic influences → There is some evidence that genetic defects in the immune system may cause certain people to be more likely to become infected.
- ① Armadillo exposure → Leprosy is enzootic in the nine-banded armadillo.

Symptoms:

- ① Leprosy attacks the nervous system, particularly the nerves of the hands, feet and face.
- ② In tuberculoid leprosy, skin lesions typically develop in areas of nerve damage. Skin becomes pale, may develop a ~~mottled~~ reddish copper colour.
- ③ Lepromatous leprosy → loss of sensation to pinprick or light touch. Starts at the fingers and toes, affect a small patch of skin to begin with but as time passes many skin lesions and nodules develop, organ deformities.
- ④ Thickening of peripheral nerves.
- ⑤ Lumps or swelling on the earlobes on face.
- ⑥ Tender, enlarged peripheral nerves.

Classification:

~~The~~ It is the two type -

i) ① Skin smear result classification.

ii) ② clinical classification.

i) Skin smear result classification:

① paucibacillary leprosy - few bacilli.

Two to five skin lesions with negative skin smear results at all sites.

② Multibacillary leprosy (MB):

Any form of leprosy in which the patient shows positive smears at any site.

ii) Clinical classification:

1. ~~Ind~~ Indeterminate Leprosy (IL)

2. Tuberculoid leprosy

3. Lepromatous leprosy.

4. Borderline leprosy.

① Borderline tuberculoid leprosy.

① " borderline leprosy.

① " Lepromatous leprosy.

Tuberculoid leprosy:

The bacilli are usually absent in slit-skin smears.

The histopathology shows tuberculoid granulomas composed of epithelioid cells surrounded by a zone of lymphocytes.

Lepromin test is strongly positive.

Pathogenesis:

① The areas most commonly affected by leprosy are the superficial peripheral nerves, skin, mucous, - membranes of the upper respiratory tract, eyes, and testis.

① Tissue damage is caused by the degree to which cell-mediated immunity is expressed, the extent of bacillary spread and multiplication, immunologic complication and nerve damage.

① *M. leprae* is an obligate intracellular acid-fast bacillus with unique ability to enter nerves.

Diagnosis:

- ① clinical symptom diagnosis. (anesthesia, nerve enlargement and characteristic skin lesions)
- ① Slit-skin smears: Ziehl neelsen staining of skin smear.
- ① Skin biopsy.
- ① Nerve biopsy.
- ① Lepnomin test.
- ① In an endemic country or area, an individual should be regarded as having leprosy if he or she shows ONE of the following cardinal signs.
- ① Skin lesion consistent with leprosy and with definite sensory loss, with or without thickened nerves.
- ① positive skin smears.
- ① A skin smears test, may also be done.
- ① With paucibacillary leprosy no bacteria will be detected
- ① In contrast bacteria are expected to be found on a skin smear test from a person with multibacillary leprosy.

Treatment:

- ① common drugs. (MDT = Dapsone + clofazimine + Rifampicin)
- i) Dapsone. (weak bactericidal)
- ii) Rifampicine.
- iii) clofazimine.

The combination of these three drugs is known as multidrug therapy (MDT)

- ① 6 month regimen for paucibacillary (PB) leprosy-
 - ① Dapsone 100 mg (D) ① Rifampicin 600 mg. (M)

Complication:

- ① Disfigurement.
- ① Hair loss, particularly on the eyebrows and eyelashes.
- ① Muscle weakness.
- ① Permanent nerve damage in the arms and legs.
- ① Inability to use the hands and feet.
- ① Nosebleeds.
- ① Iritis (inflammation of the iris of the eye), glaucoma (an eye disease that causes damage to the optic nerve) and blindness)
- ① Infertility
- ① Kidney failure.