

Leprosy

①

Also known as Hansen's disease

Infectious disease caused by Hansen's bacillus
Mycobacterium leprae.

Transmission: Hansen's disease is transmitted from person to person by respiratory droplets.

→ Risk groups: Those living in endemic areas, contaminated water, and other diseases like HIV which affect immune system are under risk of getting leprosy

Classification of leprosy

Most acceptable classification:

(1) Tuberculoid leprosy (TT) →

Ridley - Jopling

Few skin lesions
found on face limbs.
dry & scaly, healed.
large & asymmetric
hypopigmented macule.
Anesthetic lesion, Hypohidrosis

(2) Borderline tuberculoid (BT)



(3) Borderline lepromatous

Lesions similar as TT form

They are smaller & more numerous.
Nerves are less enlarged
can remain in this stage or can
convert to TT or progress to LL
(back)

(4) Lepromatous leprosy

Bordeaux lepromatous →

Nummular lesions
consist of Macules, papules, plaques, nodules
Lodger like inverted scabies
(Punched out lesions)

Lepromatous leprosy

Not Anæsthetic -
Disease may remain at this stage
May improve or regress



Early cutaneous lesions

- consist mainly of pale macules
- late infiltrations are present & numerous bacilli
- Macular lesions are small, diffuse & symmetric
- little or no loss of sensation

Pathophysiology →

Transmission by aerosol spread
from infected Nasal secretion to exposed
Nasal & oral mucosa

Leprosy → Doesn't spread
by direct contact
through intact skin

Incubation period 6 months to 40 yrs or longer.
Cogn - 17 / 10 yrs 22

→ cooler parts like
Superficial peripheral
nerves, skin, mucous membs
of upper resp tract -
Ant chamber of Eyes, testes
are commonly affected

→ Tissue damage depends on the degree
to which cell mediated immunity
is expressed

M. Leprae has affinity for Macrophages and Schwann cells → which produce Myelin sheath of Axon.
 They multiply within the Schwann cell & stimulate Cell mediated response which becomes an inflammatory reaction
 ↓
 Swelling in perineurium
 ↓
 Ischemia, fibrosis & Axonal death.

Components of its cell wall stimulate a Tgm antibody and Cell Mediated immune response reaction (3)

Diagnosis : Physical signs : 1) Cutaneous lesions are to be looked for 2) Neuropathic 3) Eyes

For Cutaneous lesion : Investigation done for number & distribution of skin lesions.

Hypo pigmented patch & raised border in first lesion.
 Hypoesthetic lesion - or may not

Neuropathic : Most commonly affected Nerve is post tibial nerve other are ulnar, Median & lateral popliteal & fascial Nerve.
 Besides sensory loss there may be tenderness & Motor loss.

Eye damage : Seen in facial lesions.
 Lagophthalmos : Inability to close eye,
 ↳ due to involvement of zygomatic & temporal branches of trigeminal nerve → tearing & dry eyes & reduced blink rate

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Bacterial Index for Leprosy

The bacterial index was proposed by Ridley. He developed a logarithmic scale, from 0 to 6+. The scale is based on the average number of bacilli per microscopic field using an oil-immersion objective. In infections with a high bacterial load, it usually takes 5-8 years from the beginning of therapy before the bacterial index is negative. [A rule of thumb is 1+ per year].

Bacterial index

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| | |
|----|---------------------------------------|
| 0 | 0 bacilli in 100 oil-immersion fields |
| 1+ | 1 to 10 bacilli per 100 fields |
| 2+ | 1 to 10 bacilli per 10 fields |
| 3+ | 1 to 10 bacilli per field |
| 4+ | 10 to 100 bacilli per field |
| 5+ | 100 to 1000 bacilli per field |
| 6+ | > 1000 bacilli per field |

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Clinical tests : 1. Tissue smear / slit skin smear. (4)

2. Histamine testing

3. Methylcholine sweat testing.

Tissue smear : In case of skin
fluid is taken from lesion.
stained by ziehl-nelson's technique.

BI \rightarrow Bacterial Index \rightarrow No of organisms per 100 fields examined (at magnification microscope) } Skin smears have high specificity but low sensitivity because 70% of pts. \bar{c} leprosy have Negative smears

Histamine test : To diagnose postganglionic nerve injury - Histamine diphosphate is dropped on normal skin & wheal formed on normal skin but not form where nerve is damaged.

Methylcholine test : Intradermal injection of Methylcholine demonstrates the absence of sweating in leprosy lesion.
Useful for those pts. ^{who are dark} ~~whose skin is not sensitive to histamine~~ where the flare of histamine cannot be seen.

Clinical features % . Affect Skin
Nerves
Mucous membranes.

Periosticillary (TT) : one or more Hypopigmented skin macules.
Anaesthetic patches due to damaged peripheral Nerve.

Multibacillary (LL) : Asymmetric & symmetric skin lesions.
nodules, plaques - thickened cornea.
Frequent involvement of nasal mucosa resulting in nasal congestion & epistaxis but NO Nerve damage.

(5)

Treatment : Pauci : combination of 2 drugs / Length of
 WHO Regimens Multi : Triple drug therapy / treatment
 1. Paucibacillary disease : Dapsone 100mg / day depends on type
 + of disease
 Rifampicin 600mg / once a month
for 6 months

2. Multibacillary : Dapsone 100mg / day Rifampicin 600mg
 once a month
 +
 Clofazimine 300mg / once a month +
 50mg / d for 1 year

3. Single skin lesion : A single dose of Rifampicin 600mg
 Ofloxacin 400mg + Minocycline
 100mg

For one time administration, if child is half treated

Surgical care : Required when pat has profound tissue
 inflammation & Nerve abscess / loss of ^{new} function
 secondary to compression.

- Surgical drainage of abscess can restore nerve function
- Correction of lagophthalmos.
- Reconstructive surgery → to Repair Nasal collapse :

Sexually Transmitted Diseases

(6)

STD → More than 20 different infections are transmitted through the exchange of body fluids like semen & blood.

- They are also called as venereal diseases.

Ex: Syphilis, Gonorrhoea, lymphogranuloma venereum

Viral infections such as Hepatitis B, AIDS are also sexually transmitted.

Gonorrhoea ∘ Highly contagious sexually transmitted disease caused by bacterium *Neisseria gonorrhoeae*.

Mucous membrane of genital region may inflame and develop symptoms -

Etiology : Caused by N. Gonorrhoea .

Gram -ve bacillus .

Can grow in warm moist areas of reproductive tract

| | | |
|---|---|-------|
| <ul style="list-style-type: none"> → Cervix Uterus Fallopian tubes Urethra in men . | } | Women |
|---|---|-------|

Can also grow in the mouth
 Throat
 Eyes
 Anus .

Can be transmitted from Mother to baby through Normal delivery during birth .

Causes blindness .
 Joint infection
 blood infection

Symptoms : Most of the women have NO symptoms
 If symptoms appear after 10 days of infection

They have pain during Micturition
 Vaginal discharge yellowish
 Pain during sex
 bleeding b/w menstrual cycles .

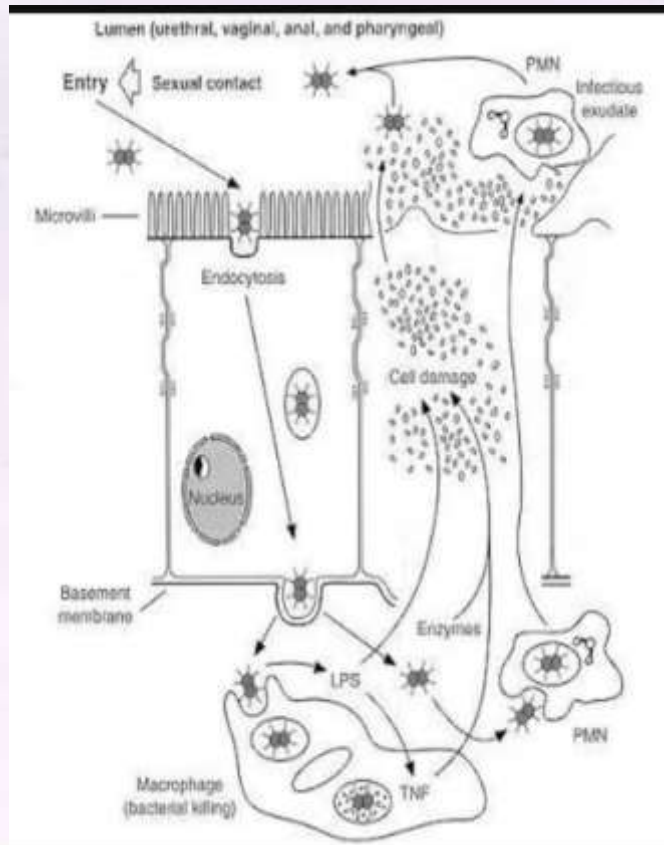
~~the~~ anal symptoms → Include
 Itching around the anus

Sores
bleeding
discharge

If eyes are involved
Symptoms include

Redness
Itching
Discharge from
eyes.

Pathophysiology



PATHOGENESIS:

MODE OF TRANSMISSION:

- SEXUAL CONTACT (STD)

VIRULENCE FACTOR:

- PILI: ATTACHMENT AND ANTIPHAGOCYTTIC.
 - CELL WALL: 2 FACTORS
 - ENDOTOXIN - TOXIGENICITY.
 - OUTER MEMBRANE PROTEINS(OMP) - ATTACHMENT
 - IgA PROTEASE - DESTROYS SECRETORY IgA.
- REPEATED GONOCOCCAL INFECTION DUE TO CHANGES OF PILI AND OMP