LEPROSY

Hansen's Disease

caused by

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Mycobacterium leprae & Mycobacterium lepromatosis

(acid fast, obligate intracellular bacteria)

It gets transmitted by —

* 1° Infected person — nasal secretions & skin lesions
* 2° contact with host of carrier bacteria — nine-banded armadillo

Risk Factors

→ close contact

→ Age (5-15 yrs and above 30 yrs) Bimodal effect

→ compromised immune response or suppressed immune system of patient

→ Genetical cause — variation in NOD2 gene involved in Innate immunity.

Pathogenesis

* It is a slow growing organism takes 12.5 days to multiply.

But grows faster at 27°C – 33°C

Hence, it affects the cooler parts of body - mucous memb. of respiratory tract, skin, eyes, nose etc.

Types of leprosy - as per clinical Manifestation.

- Indeterminate leprosy (IL)
- Multibacillary leprosy (MB)
- Paucibacillary leprosy (PB)
- Borderline borderline leprosy (BB)
- Borderline Tuberculoid leprosy (BT)
- Borderline lepromatous leprosy. (BL)

- Mostly people do not gets infected subsequently after exposure but when infected → it causes chronic granulomatous disease.

Pathophysiology

From the etiological factors like the sources of transmission

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spread of aerosol from infected to healthy individual nasal and oral mucosa while normal breathing

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Bacteria enters body through this or via skin due to touch

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this obligate parasite resides in the macrophages and multiplies at every 12-5 days.

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After the incubation period of 6 months – 40 years or longer

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[DEPTH OF BIOLOGY]

It start affecting the superficial peripheral nerves of relatively cooler parts — skin, mucus membranes of upper respiratory tract, anterior eyes & testes

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[DEPTH OF BIOLOGY]

hence, leprosy is caused.

* Tissue damage depends on the degree to which cell mediated immunity is expressed,
  - Type & extent of bacillary spread.
  - appearance of tissue damaging immunologic complications.

- In this basically peripheral nerve damage takes place.

Clinical Manifestations

- Sensory loss — severe may lead Amputations.
- Weakning of eye muscle.
- Drying of eyes.
- Hyperthermia

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- fatigue
- Arthritis
- Neuritis
- Iritis
- Type I Immunologic response in BL patients.
- Type II response is found in lepton lepromatous disease. [DEPTH OF BIOLOGY]
- painful Nodules.

Diagnosis and Treatment...

- Biopsy – skin lesion
  - Biopsy tissue gets examined for Acid-fast staining
  - Polymerase chain Reaction. [DEPTH OF BIOLOGY]
- Histology
- Tissue culture

Treatment... [DEPTH OF BIOLOGY]

- Single-lesion Paucibacillary

Rifampin, ofloxacin & minocycline (ROM) – single dose.