


TUBERCULOSIS

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- Tuberculosis is an infective disease commonly affecting lungs.
 - It is caused by
 - ❖ *Mycobacterium tuberculosis*
 - ❖ *Mycobacterium bovis*
 - It is an airborne disease, spreads through air in form of small droplets.
 - Transmitted by sneezing, coughing, singing or even talking




ETIOLOGY

- **Droplet infection** (inhalation of oral droplets from infected person)
- Intake of unpasteurized cow milk.
- Re-infection
- Disease conditions like DM, alcoholism, whooping cough, etc
- Socio economic factors like Malnutrition, heavy workload, inadequate sleep, unhygiene, etc

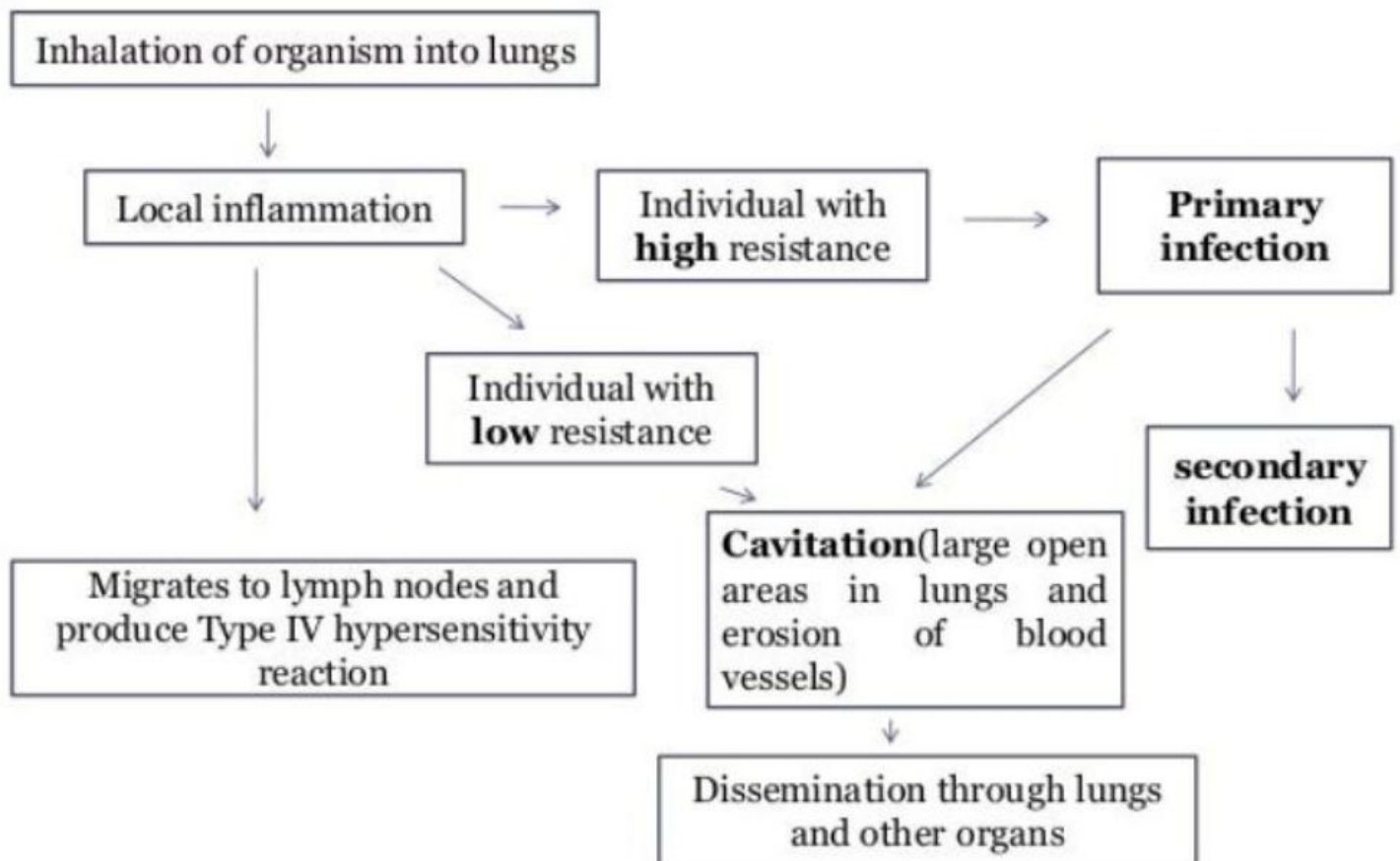
TYPES OF TUBERCULOSIS

1	Pulmonary TB	Commonly affects the lungs and hence called pulmonary TB
2	Primary TB pneumonia	<ul style="list-style-type: none">•Seen shortly after 1st infection•Characterized by rupturing of the granuloma (located at the edge of pleural cavity) into the pleural space (space between lungs and chest wall)
3	Cavitary TB	<ul style="list-style-type: none">•Destruction in lungs progresses and cavities or enlarged spaces are formed by bacteria.•Upper lobes of lungs are most affected.
4	Miliary TB	Miliary (tiny nodules) appears all over lungs as depicted in X-ray and is considered as disseminated TB
5	Laryngeal TB	Highly infectious form of TB which infects larynx or vocal cord.



Signs and symptoms	Complications
<ul style="list-style-type: none">•Coughing (lasts more than 2 weeks with green, yellow or bloody sputum)•Weight loss•Fatigue•Chest pain•Night sweats•Evening pyrexia/fever•Shortness of breath	<ul style="list-style-type: none">•Spinal pain•Joint damage•Meningitis•Liver and kidney functional impairment•Blurred vision

PATHOGENESIS



PRIMARY INFECTION

- **Tubercle and granuloma formation** (at the site of inflammation, macrophages and lymphocytes are clustered together into granuloma, containing bacilli, few of which are alive and form a tubercle)
- **Caseation necrosis** (developed in the centre of tubercle forms a core of cheese-like substance of dead necrotic tissues and macrophages)
- **Ghon complex** (An individual of strong immune system may resist the invasion, but these lesions may remain very small and become walled off by fibrous tissue and sometimes also calcify. These lesions are called Ghon complex)

SECONDARY INFECTION

- If resistance decreases later (eg. Immune suppression), organism re-active

LEPROSY

- A chronic infectious disease caused by *Mycobacterium leprae* and mainly affects the skin, peripheral nerves, mucosal surfaces of the upper respiratory tract, and eyes is termed **leprosy or Hansen's disease**

ETIOLOGY

- *Mycobacterium leprae* OR *Mycobacterium lepromatosis*
- Transmitted through direct contact
- Incubation period: Tuberculoid- 5 yrs, Lepromatous form- 12 yrs

TYPES

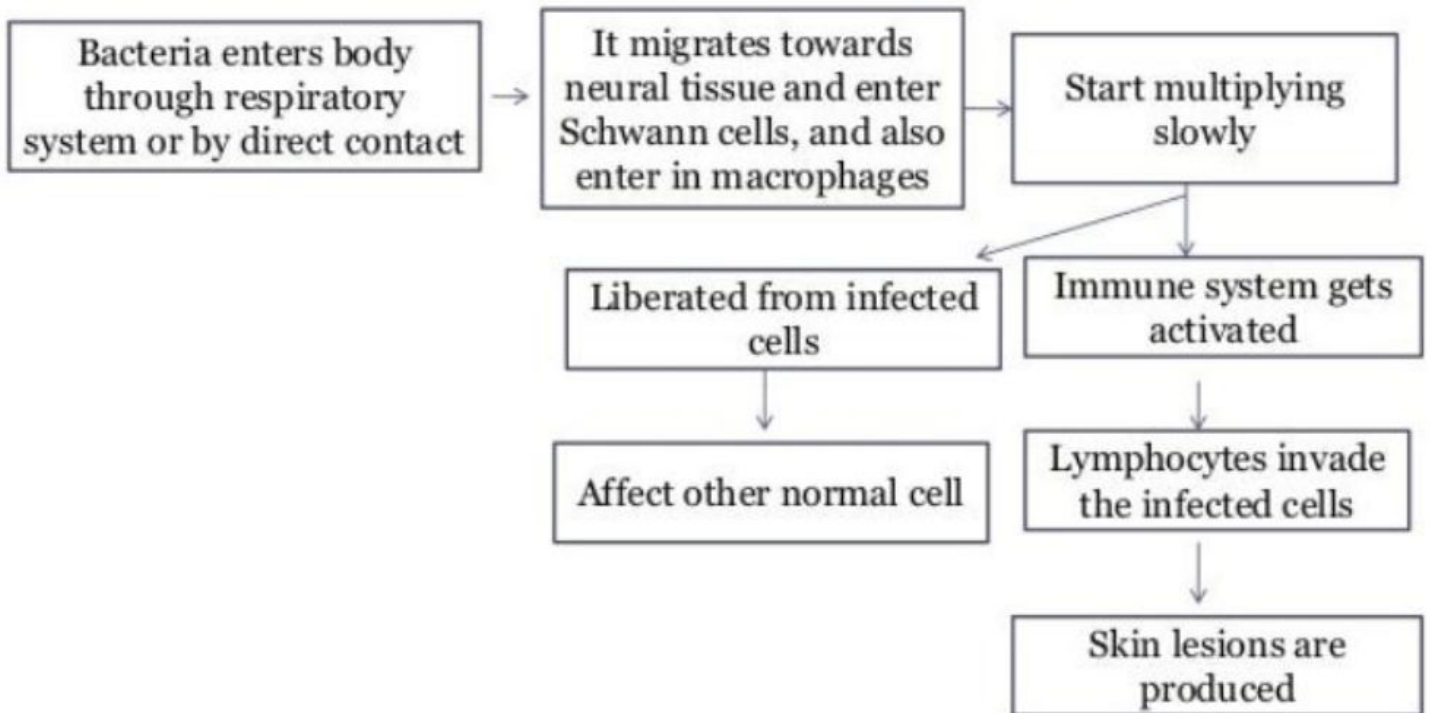
BASIS OF CLINICAL MANIFESTATIONS AND SKIN SMEAR RESULTS

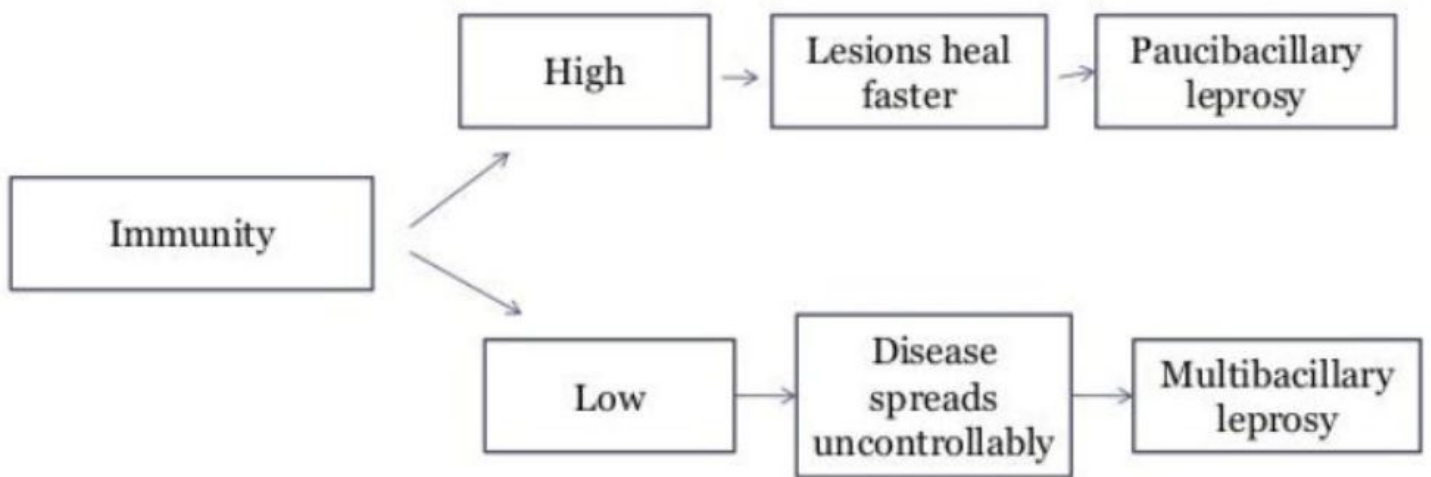
Paucibacillary leprosy	Show -ve smear test at all sites
Multibacillary leprosy	Show +ve smear test at all sites

REDLEY AND JOPLING CLASSIFICATION

Intermediate leprosy	Few flat lesions – heal by their own
Tuberculoid	Large, painless lesion – left untreated, develop to lepromatous
Borderline tuberculoid	Lesions small and numerous – may remain in this stage or return to tuberculoid
Borderline lepromatous	Numerous painful lesions- contain papules, plaques and nodules– may remain in this stage or progresses
Lepromatus leprosy	At first, small, diffuse and cutaneous lesions develop and later it changes to larger and deeper form

PATHOPHYSIOLOGY OF LEPROSY





SIGNS AND SYMPTOMS	COMPLICATIONS
<ul style="list-style-type: none"> •Discolored skin lesions •Growth on the skin •Thick and dry skin •Severe pain •Numbness on affected area •Eye problems •Muscle weakness •Nose bleeds 	<ul style="list-style-type: none"> •Disfigurement •Hair loss •Muscle weakness •Glaucoma and Iritis •Blindness •Permanent nerve damage in arms and legs •Kidney failure