PATHOPHYSIOLOGY

IMPORTANT QUESTIONS

UNIT 5

IMPERFECT
PHARMACY

QUESTION - 2

2 DESCRIBE IN DETAIL ABOUT PATHOPHYSIOLOGY OF TUBERCULOSIS

TUBERCULOSIS

- Tuberculosis (TB) is a serious infectious disease caused by the bacterium Myobacterium Tuberculosis.
- It primarily affects the lungs, though it can also impact other parts of the body such as kidneys, spine & Brain.
- According to WHO Tuberculosis is most prevalent infectious disease worldwide and leading killer at least 3 million deaths annually.

TYPES OF TUBERCULOSIS

① Pulmonary Tuberculosis
② Extrapulmonary Tuberculosis
③ Latent Tuberculosis
④ Active Tuberculosis
⑤ MDR Tuberculosis

① Pulmonary Tuberculosis

- The most common form, affecting the lungs.
- It is characterized by symptoms such as persistent cough, chest pain and coughing up blood.
- Pulmonary TB is highly infectious.

② Extrapulmonary Tuberculosis

- It occurs outside the lungs can affect other organs such as kidneys, spine, brain or lymph nodes.
- Symptoms vary depending on the affected organ & can be more difficult to diagnose.

③ Latent Tuberculosis

- It is a non active form of TB where bacteria are present in the body but not causing symptoms.
- People with Latent TB are non infectious but can develop active TB later if their immune system weakens.

④ Active Tuberculosis

- It is a stage when TB bacteria are actively multiplying and causing symptoms.
- It is an infectious form and requires immediate treatment.

⑤ MDR Tuberculosis

- It is a form of TB resistant to two most effective first line TB drugs i.e., Isoniazide & Rifampin.
- It becomes more challenging to treat and requires second line drugs.

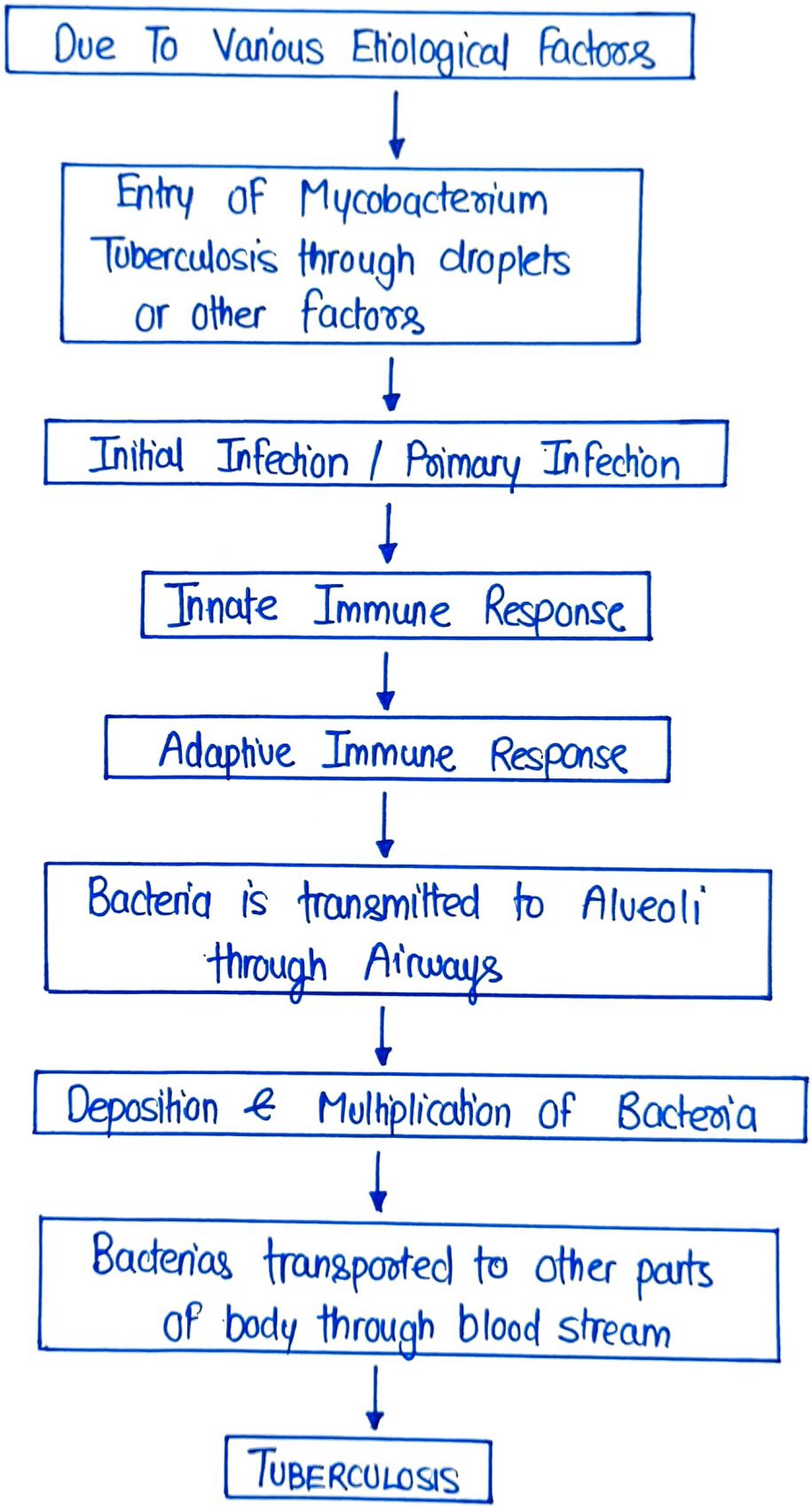
CAUSES

- Tuberculosis is caused by bacterium 'Mycobacterium Tuberculosis'
- The primary cause and factors contributing to its development and spread TB include:
- Bacterial Infection
- Weakened Immune System
- Undernutrition
- Close contact with affected individual
- Smoking
- Alcohol
- Travel & Migration

SYMPTOMS

- Persistent Cough
- Chest Pain
- Weight Loss
- Fever
- Night Sweats
- Fatigue
- Shortness of Breath
- High Temperature

PATHOGENESIS



Complications

- Meningitis TB
- Bone & Joint TB
- Lymph Node TB
- Renal TB
- Lymphadenopathy

Treatment

The treatment of Tuberculosis typically involves a combination of Antibiotics over an extended period (6-9 month).

① Initial Phase

- Isoniazid
- Rifampin
- Ethambutol
- Pyrazinamide

② Continuation Phase

- Isoniazid
- Rifampin

QUESTION - 1

1 DESCRIBE IN DETAIL ABOUT PATHOPHYSIOLOGY OF AIDS

AIDS

- AIDS stands for Acquired Immunodeficiency Syndrome.
- It is a disease caused by the Human Immunodeficiency Virus (HIV) that progressively damages the immune system making it difficult for the body to fight off infections & diseases.
- AIDS is the advanced stage of HIV infection, characterized by a severely weakened immune system and presence of certain opportunistic infections or cancers.
- It is a type of Sexually Transmitted Disease (STD)
- Sexually Transmitted disease are illness that have a significant probability of transmission b/w humans by means of sexual behaviour including vaginal intercourse, oral sex etc.

Stages Of HIV Infection

HIV Infection progresses through several stages:

1. Acute HIV Infection
2. Clinical Latency Stage
3. AIDS

Acute HIV Infection

- It is also known as Primary Stage.
- This occurs 2-4 weeks after exposure to HIV.
- Symptoms can resemble the flu or other viral infection & may include fever, swollen lymph nodes and rash.

② Clinical Latency Stage

- This stage can last for several years, during which the virus is still active but reproduces at low levels.
- Many people may not experience symptoms or only mild ones.
- Without treatment, this stage eventually progresses to AIDS.

③ AIDS (Acquired Immunodeficiency Syndrome)

- This is the final stage of HIV infection, characterized by severely weakened immune system and development of opportunistic infections or cancers.
- Common symptoms may include significant weight Loss, Persistent fever and severe infections.

CAUSES

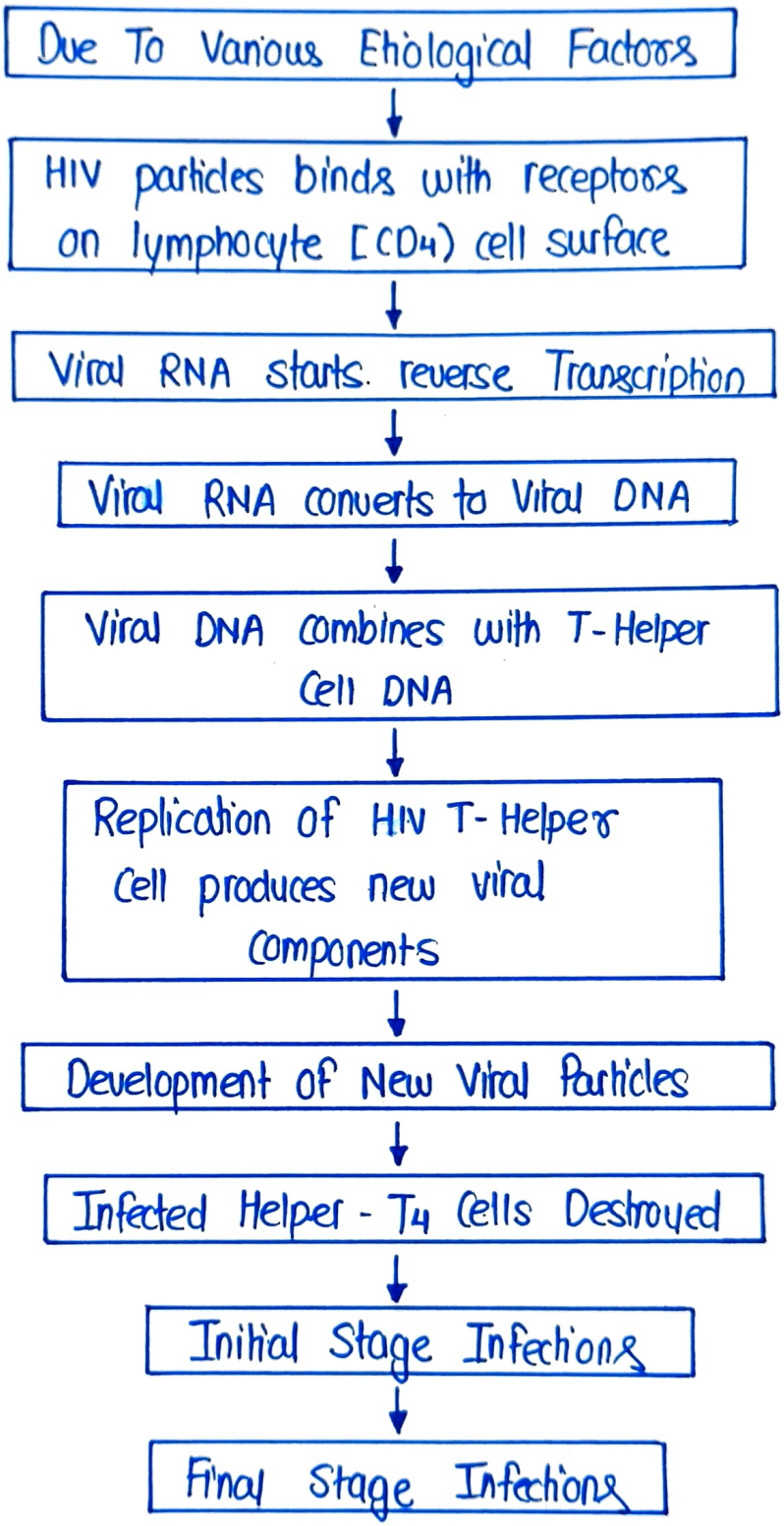
- AIDS is mainly caused by HIV (Human Immunodeficiency Virus)
- It is of two types:

① HIV I

② HIV II

- Now this HIV can be transmitted through various means:
- Unprotected Sexual Contact
- Sharing Needles
- Mother to Child Transmission
- Blood Transfusions
- Infected Blood Products

PATHOPHYSIOLOGY



Symptoms

- Persistent fever
- Night sweats
- Weight loss
- Chronic diarrhoea
- Persistent cough
- Skin rash or sores
- Neurological disorders
- Severe headaches

Complications

- Recurrent infections
- Tuberculosis
- Cancer
- Malabsorption
- Neurological disorder

Treatment

- There is no cure for AIDS, but effective treatment can manage the disease and improve quality of life:
- Antiretroviral therapy
- Regular monitoring
- Management of opportunistic infections
- Supportive care

QUESTION - 3

3 DESCRIBE IN DETAIL ABOUT PATHOPHYSIOLOGY OF URINARY TRACT INFECTIONS

URINARY TRACT INFECTION

- A Urinary Tract Infection (UTI) is an infection that occurs in any part of the urinary system, that includes kidneys, Ureters, Bladder and urethra.
- Most of the infections involve the lower urinary tract the bladder and Uoethra.
- UTIs are typically caused by bacteria.

TYPES

On the basis of part affected it can be classified into following types:

1. Cystitis
2. Urethritis
3. Pyelonephritis

Cystitis

- It is the infection of the bladder.
- Symptoms typically include frequent & painful urination, lower abdominal discomfort and cloudy or strong smelling urine

Urethritis

- It is the infection of Urethra.
- It often causes burning during Urination and discharge from Urethra.

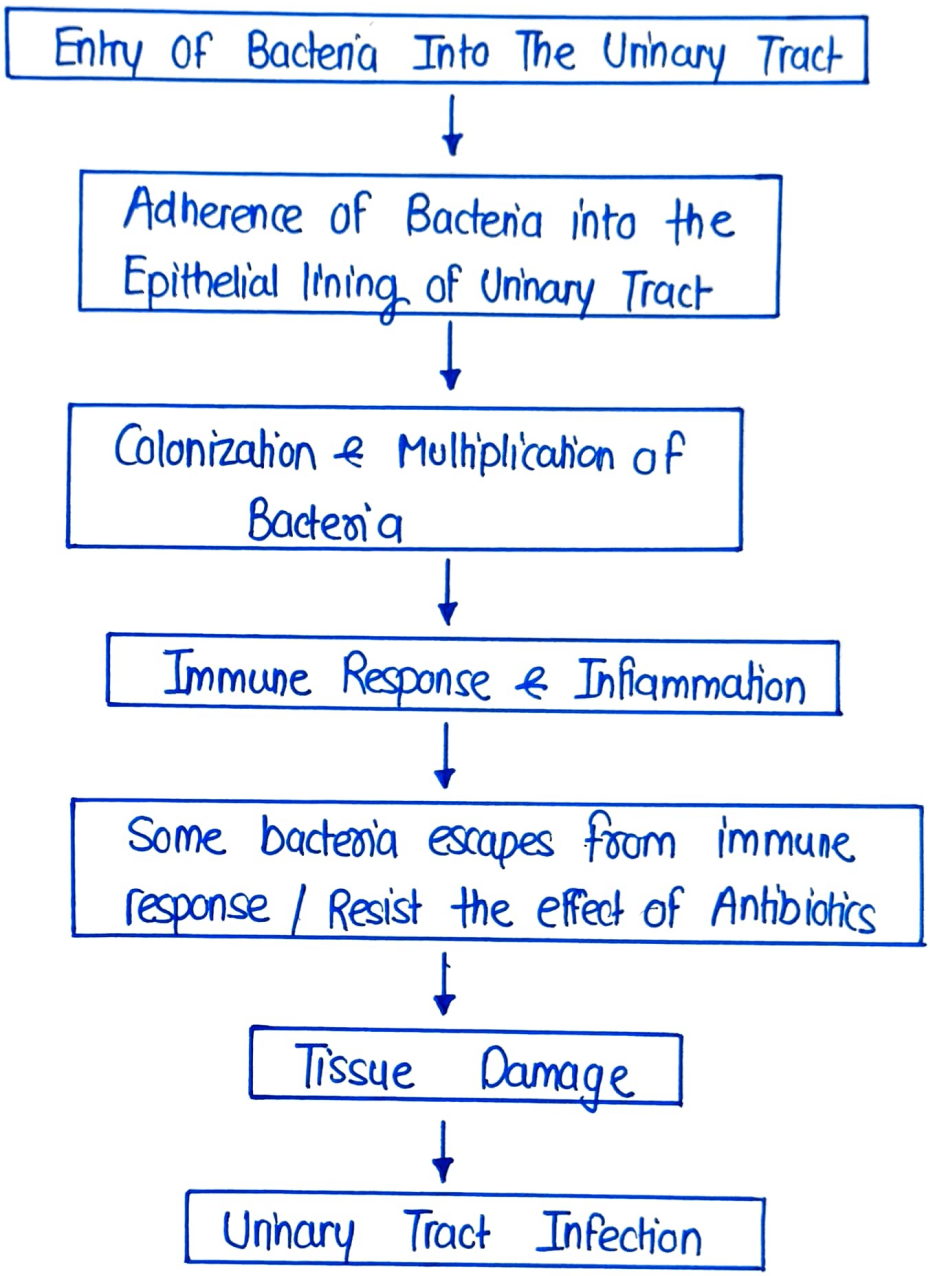
Pyelonephritis

- It is defined as infection of kidneys.
- It is the more severe form of UTI can cause high fever, back pain, nausea and vomiting.
- It requires immediate treatment.

CAUSES

- More than 90%. of UTI cases are caused by a type of bacteria called E. Coli (Eschrichia Coli)
- Other bacteria, such as Klebsiella, Proteus and Enterococcus can also be involved.
- Urinary Retention
- Sexual Activity
- Immune System Disorders
- Hormonal Changes.
- Hygiene Practices

PATHOGENESIS



Symptoms

- Frequent urge to urinate
- Burning sensation
- Cloudy / Discoloured Urine
- Blood in Urine
- Fever
- Fatigue

Complications

- Chronic Renal failure
- Bladder Damage
- Prostate Infection
- Pregnancy Complications.
- Urethral Narrowing

Treatment

- Antibiotics
- Pain Relievers.
- Hydration
- Rest
- Maintainance of Hygiene

QUESTION - 4

4 DESCRIBE IN DETAIL ABOUT PATHOPHYSIOLOGY OF LEPROSY

LEPROSY

- Leprosy is a chronic infectious disease caused by the bacterium Mycobacterium Leprae.
- It is also known as Hansen's Disease.
- It primarily affects the skin, nerves, mucous membrane and eyes, leading to symptoms such as skin lesions, numbness, muscle weakness and deformities.

Types

It can be subdivided into following types:

~~Intermediate Leprosy~~

① Tuberculoid Leprosy
② Lepromatous Leprosy
③ Indeterminate Leprosy
④ Borderline Leprosy

Tuberculoid Leprosy

- It is characterized by few well defined skin lesions and nerve damage.
- The immune system's response is strong, limiting the spread of bacteria.

Lepromatous Leprosy

- It features widespread skin lesions, nodules and damage to multiple nerves.
- The immune response is weaker, leading to more extensive bacterial spread & symptoms.

Borderline Leprosy

- This type of leprosy lies between tuberculoid & lepromatous leprosy.
- It may present with features of both types and can progress or improve depending on treatment.

Indeterminate Leprosy

- It is the early stage of leprosy has few symptoms and unclear diagnostic features.
- It often progresses to one of the other types, if not treated.

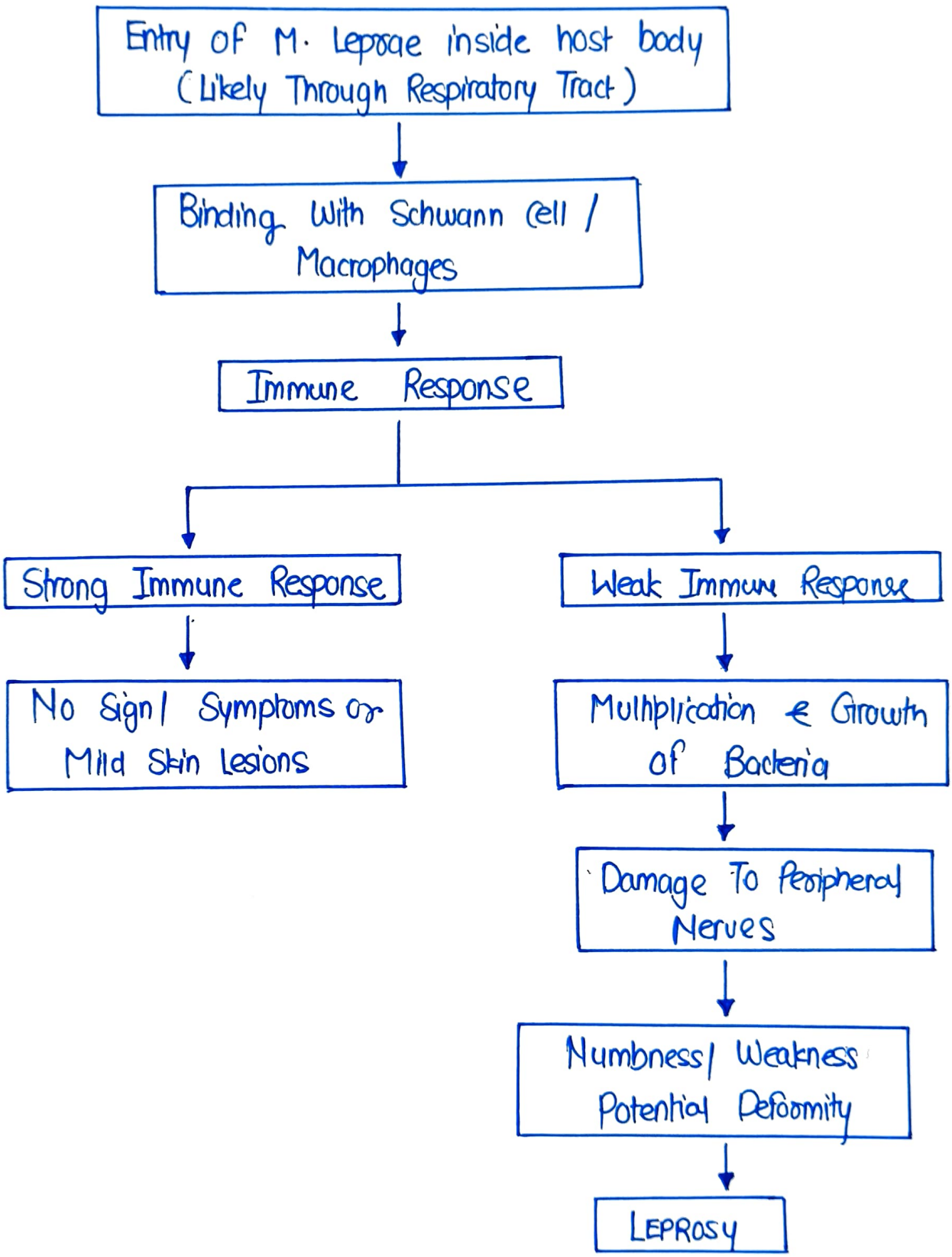
Causes

- Leprosy is caused by the bacterium 'Mycobacterium Leprae'.
- It is a slow growing pathogen primarily affects the skin, peripheral nerves, mucous membrane and eyes.
- The exact mode of transmission is not fully understood, but it is believed to spread through respiratory droplets from an infected person:
- Here are some other possible mode of transmission:
- Faecal - Oral Route
- Close contact with patients or carriers
- Contaminated water & food
- Flies & Cockroaches

Symptoms

- Skin Lesions
- Numbness
- Muscle Weakness
- Deformities
- Loss of Eyebrows / Eyelashes

PATHOGENESIS



Treatment

Leprosy is primarily treated with a combination of antibiotics over a period of 6-12 months.
Drugs included are:

- Rifampicin
- Dapsone
- Clofazimine

THANK YOU

FOR CHOOSING IMPERFECT PHARMACY AS YOUR STUDY PARTNER

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