gonorrhea

- Definition: Sexually transmitted infection (STI) caused by *Neisseria gonorrhoeae* (gram-negative diplococcus).
    - (2nd most reported STI after *Chlamydia*).
- Key Challenge: Rising antibiotic resistance globally.
- High-Risk Groups:
    - Adolescents/young adults (15–24 years).
    - Men who have sex with men (MSM).
    - Multiple sexual partners, low socioeconomic status.
- Critical Fact: Often asymptomatic (especially in females), facilitating silent spread.
- Pathogen: *N. gonorrhoeae*

- Features: **Gram-negative, oxidase-positive, intracellular diplococci;** grows on **Thayer-Martin medium.**
    - Virulence Factors:
- Pili: Attach to mucosal epithelium.
- Opa proteins: Facilitate invasion of host cells.
- Lipooligosaccharide (LOS): Endotoxic; binds sperm (aids male-to-female transmission).
- IgA protease: Degrades secretory IgA.
- Porin protein (**PorB1A**): Evades complement system → dissemination.
    - Incubation Period: 2–8 days.
    - Transmission Routes: Sexual (oral/genital/anal), perinatal, auto-inoculation (e.g., eye).

. Clinical Manifestations

1. Urogenital Infections

- Males:

1. Urethritis: Purulent discharge (neutrophils), dysuria (often asymptomatic).
2. Epididymitis: Unilateral scrotal pain/swelling.
3. Prostatitis: Pelvic/perineal pain, dysuria.

- Females:

1. Cervicitis: Purulent discharge (usually asymptomatic).
2. Urethritis: Dysuria, frequency.

3. Pelvic Inflammatory Disease (PID):
    - Symptoms : Lower abdominal pain, abnormal bleeding .
    - Physical examination : fever >38.3c , cervical motion ,uterine, adnexal tenderness , mucopurulent cervical discharge

2. Extragenital Infections

- Proctitis: Mucopurulent anal discharge, tenesmus (receptive anal intercourse).
- Pharyngitis: Sore throat, cervical lymphadenopathy (oral sex).
- Conjunctivitis: Purulent discharge, eyelid edema (auto-inoculation; can cause blindness).

3. Disseminated Gonococcal Infection (DGI)

- Arthritis-Dermatitis Syndrome: MC presentation
    - Migratory polyarthralgia, tenosynovitis, painless pustular skin lesions, fever.
- Purulent Arthritis: Sudden joint pain/swelling (wrists, knees, ankles).

4. Neonatal Infection

- Ophthalmia Neonatorum: Purulent conjunctivitis (onset 2–5 days postpartum); risk of corneal ulceration → blindness.
- Disseminated Infection: Bacteremia → sepsis, meningitis, arthritis.

Diagnosis

- **First-Line Test**: Nucleic Acid Amplification Test (NAAT)

- Samples: Urine (males), vaginal/endocervical swab (females), rectal/pharyngeal swabs.
- Limitation: Cannot test antibiotic susceptibility.

Supportive Tests:

- Gram stain: Shows gram-negative intracellular diplococci (diagnostic in symptomatic males).
- Culture: Used for antibiotic resistance testing (e.g., treatment failure); requires **Thayer-Martin medium**.
- **Thayer-Martin medium**.:

A **selective culture** medium that favors the growth of *Neisseria species* Contains vancomycin (which inhibits the growth of gram-positive organisms), trimethoprim and colistin (which inhibit the growth of gram-negative organisms), and nystatin (which inhibits the growth of fungi).

- Always Test for Co-infections: *Chlamydia*, HIV, syphilis.

. Treatment & Prevention

- First-Line Therapy:
    - **Ceftriaxone** (IM single dose) + **macrolide (Azithromycin** (oral)) or (**tetracycline (Doxycycline**)) (to cover *Chlamydia* co-infection).

- Key Prevention Measures:
    - Condom use during all sexual contact. because it recurrent **by high Ag variation**
    - Avoid sex until 7 days post-treatment (patient + partners) and symptom resolution.
    - Screen/treat sexual partners**.**