Sexually Transmitted Diseases

Presented By;-

Mr. Samarpan Mishra (Assistant Professor)

Specialization:- Pharmaceutical Chemistry

Sexually transmitted diseases

1. **AIDS**
2. **Syphilis**
3. **Gonorrhea**

- Sexually transmitted infections (**STIs**), also known as sexually transmitted diseases (**STDs**), are infections passed from person to person primarily through sexual contact (vaginal, anal, or oral sex).
- They are caused by bacteria, viruses, or parasites and are a significant global health concern

1. AIDS

S.No	Heading	Details
1	**Full Form**	AIDS – Acquired Immunodeficiency Syndrome
2	**Definition**	A chronic, life-threatening condition caused by Human Immunodeficiency Virus (HIV), which destroys the body's immune system, especially CD4+ T-cells.
3	**Causative Agent**	HIV-1 (most common, worldwide) and HIV-2 (mainly in West Africa).
4	**Mode of Transmission**	Unprotected sexual contact, contaminated needles, blood transfusion, mother-to-child (pregnancy, delivery, breastfeeding).
5	**Key Pathology**	Progressive destruction of CD4 cells → weakened immunity → increased risk of opportunistic infections and cancers.
6	**Stages**	Acute infection → Clinical latency → AIDS (advanced stage).

I. Etiology of AIDS

S.No	Category	Details
1	**Causative Agent**	HIV-1/HIV-2 (retrovirus).
2	**Mode of Spread**	Sexual contact, blood exposure, shared needles, vertical transmission (pregnancy, birth, breastfeeding).
3	**High-Risk Groups**	IV drug users, sex workers, MSM, infants of HIV+ mothers, unprotected sexual partners.
4	**Risk Factors**	Multiple partners, untreated STDs, needle sharing, lack of testing/screening, unsafe blood transfusion.

II. Pathogenesis of AIDS

III. Diagnostic Tests of AIDS

S.No	Test / Method	Purpose / Findings
1	**ELISA (Screening)**	Detects HIV antibodies; first-line test.
2	**Rapid Antibody Tests**	Quick diagnosis for screening.
3	**Western Blot (Confirmatory)**	Confirms presence of HIV antibodies.
4	**HIV RNA PCR / NAT**	Detects viral load; used for early/acute HIV and newborns.
5	**CD4 Count**	Measures immune status; AIDS if <200 cells/mm^3.
6	**p24 Antigen Test**	Detects early infection before antibodies appear.
7	**Tests for Opportunistic Infections**	TB test, fungal cultures, chest X-ray, etc.

IV. Treatment of AIDS

S.No	Category	Treatment / Management
1	**Antiretroviral Therapy (ART)**	Combination therapy (at least 3 drugs). First-line includes: – Tenofovir – Lamivudine/Emtricitabine – Efavirenz / Dolutegravir
2	**Goals of ART**	Reduce viral load, increase CD4 count, prevent AIDS, reduce transmission.
3	**Opportunistic Infection Treatment**	TB: anti-TB drugs; PCP: cotrimoxazole; CMV: ganciclovir; fungal infections: fluconazole.
4	**Preventive Therapy (Prophylaxis)**	Cotrimoxazole for PCP; isoniazid for TB prevention.
5	**Supportive Care**	Nutrition, hydration, psychological counseling.
6	**Prevention**	Safe sex, needle safety, screening blood, ART in pregnancy, PrEP/PEP.

2. Syphilis

S.No	Heading	Details
1	Definition	A chronic sexually transmitted infection caused by Treponema pallidum, progressing through multiple clinical stages.
2	Mode of Transmission	Sexual contact, blood transfusion (rare), and vertical transmission (mother to fetus → congenital syphilis).
3	Stages	Primary, Secondary, Latent, and Tertiary syphilis.
4	Characteristics	Painless genital ulcer (chancre), systemic rash, neurological & cardiovascular complications if untreated.
5	Incubation Period	10–90 days (average 21 days).

I. Etiology of Syphilis

S.No	Category	Details
1	Causative Agent	Treponema pallidum (a motile spirochete bacterium).
2	Mode of Spread	Sexual intercourse (vaginal, anal, oral), kissing if lesions present, direct skin-to-skin contact with syphilitic sore.
3	Risk Factors	Unprotected sex, multiple partners, MSM population, HIV infection, untreated maternal syphilis (congenital).
4	Pathogenesis	Bacteria penetrate mucous membranes → spread via blood & lymph → multi-organ involvement.

II. Pathogenesis of Syphilis

III. Diagnostic Tests for Syphilis

S.No	Test	Purpose / Findings
1	**Dark-Field Microscopy**	Direct visualization of T. pallidum from chancre (primary syphilis).
2	**Non-Treponemal Tests**	VDRL, RPR – used for screening; detect antibodies to cardiolipin; titers fall after treatment.
3	**Treponemal Tests**	FTA-ABS, TPHA, TPPA – confirmatory tests; specific for T. pallidum.
4	**PCR**	Detects bacterial DNA (useful in congenital syphilis).
5	**CSF Examination**	For neurosyphilis; VDRL positive in CSF.
6	**Ultrasound (Pregnancy)**	Detects signs of congenital syphilis (hepatosplenomegaly, hydrops).

IV. Treatment of Syphilis

S.No	Stage	Treatment
1	**Primary, Secondary, Early Latent**	Benzathine Penicillin G (single IM dose)
2	**Late Latent & Tertiary (non-neuro)**	Benzathine Penicillin G weekly for 3 weeks
3	**Neurosyphilis**	Aqueous Penicillin G IV for 10–14 days
4	**Congenital Syphilis**	Penicillin G IV/IM based on severity.
5	**Penicillin Allergy**	Doxycycline or tetracycline (except in pregnancy → desensitize & give penicillin).
6	**Partner Management**	Treat sexual partners; abstain until therapy completed.

3. Gonorrhea

S.No	Heading	Details
1	Definition	Gonorrhea is a sexually transmitted disease caused by Neisseria gonorrhoeae, affecting the urethra, cervix, rectum, throat, and eyes.
2	Mode of Transmission	Sexual contact (vaginal, oral, anal), perinatal transmission from mother to newborn.
3	Affected Sites	Urogenital tract, rectum, pharynx, conjunctiva.
4	Key Symptoms	Urethral discharge, painful urination, pelvic pain, vaginal discharge.
5	Complications	PID, infertility, ectopic pregnancy, neonatal conjunctivitis.

I. Etiology of Gonorrhea

S.No	Category	Details
1	Causative Agent	Neisseria gonorrhoeae (Gram-negative diplococcus).
2	Risk Factors	Unprotected sex, multiple partners, previous STDs, adolescence/young adulthood, poor hygiene.
3	Mode of Spread	Direct mucosal contact, sexual activity, perinatal infection (ophthalmia neonatorum).
4	Predisposing Conditions	Immunosuppression, co-infection with chlamydia or HIV.

II. Pathogenesis of Gonorrhea

III. Diagnostic Tests for Gonorrhea

S.No	Test	Purpose / Findings
1	NAAT (Nucleic Acid Amplification Test)	Most sensitive; detects bacterial DNA in urine or swabs.
2	Gram Stain	Shows Gram-negative intracellular diplococci (especially in males).
3	Culture on Thayer–Martin Medium	Confirms diagnosis & antibiotic sensitivity.
4	Urine Test	First-catch urine sample for NAAT.
5	Swab Tests	Urethral, cervical, rectal, or pharyngeal swabs for testing.
6	PCR	Identifies co-infections like chlamydia.

IV. Treatment of Gonorrhea

S.No	Type	Drugs / Management
1	**First-line Treatment**	Ceftriaxone 500 mg IM single dose + Azithromycin 1 g orally (to cover possible Chlamydia co-infection).
2	**Alternative Regimens**	Cefixime, Gentamicin + Azithromycin (if allergy to ceftriaxone).
3	**Treatment of Complications**	PID: Ceftriaxone + Doxycycline + Metronidazole.
4	**Neonatal Gonorrhea**	Erythromycin eye ointment at birth.
5	**Partner Treatment**	Sexual partners must be treated to prevent reinfection.
6	**Prevention**	Safe sex, condom use, screening in high-risk groups.

Thank You

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