

HIV/AIDS



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Shaping Lives...
Empowering Communities...

By

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SEXUALLY TRANSMITTED DISEASES (STDs):

Sexually transmitted diseases (STDs), also known as sexually transmitted infections (STIs), are infections that are spread from one person to another during sexual activity. This can include vaginal, anal, or oral sex with someone who has an STD.

There are many different types of STDs, and they can be caused by bacteria, viruses, and parasites. Some of the most common STDs include chlamydia, gonorrhea, syphilis, herpes, human papillomavirus (HPV), hepatitis B and C, and HIV/AIDS.

HIV/AIDS:

INTRODUCTION:

AIDS" typically stands for Acquired Immune Deficiency Syndrome, which is a serious condition caused by the human immunodeficiency virus (HIV). AIDS weakens the immune system, making the person susceptible to infections and other illnesses.

ETIOLOGY/CAUSES:

- **Virus:** human immunodeficiency virus (HIV)
- **Weakened immune system:** People with a weakened immune system, such as those living with malnutrition and diabetes, are more susceptible to AIDS infection.
- **Unprotected sex:** One of the biggest causes of STDs is unprotected sex, which means having sex without using a condom or other barrier method. This can increase the risk of transmitting infections from one person to another.

- **Multiple sexual partners:** Having multiple sexual partners can also increase the risk of getting an STD, as it increases the likelihood of coming into contact with an infected partner.
- **Sharing needles:** Sharing needles during drug use can also increase the risk of getting an STD.
- **Blood Transfusion:** Blood Transfusion without sterilizing or testing blood leads to infection.
- **Through placenta:** Mother-to-child transmission during pregnancy.

PATHOPHYSIOLOGY:

- **Transmission:** HIV is transmitted through bodily fluids, including blood, semen, vaginal fluids, and breast milk. The most common modes of transmission are unprotected sexual contact, sharing needles, and mother-to-child transmission during pregnancy, childbirth, or breastfeeding.
- **Initial infection:** Once the HIV virus enters the body, it targets and infects CD4 cells, which are a type of immune cell that plays a crucial role in fighting infections. The virus then replicates itself inside these cells and spreads throughout the body.
- **Acute infection:** During the acute infection stage, which typically occurs within 2-4 weeks after infection. At this stage, the virus is rapidly replicating and spreading throughout the body and a person may experience flu-like symptoms, such as fever, fatigue, swollen lymph nodes, and sore throat.
- **Latency:** After the acute infection stage, the virus may enter a period of latency, where it remains in the body without causing any symptoms. However, the virus is still actively replicating and damaging the immune system.
- **AIDS:** Without treatment, HIV can progress to AIDS (acquired immunodeficiency syndrome), which is a condition where the immune

system is severely damaged, and the body is more susceptible to infections and diseases. A person is diagnosed with AIDS when their CD4 cell count drops below to a certain threshold.

OR

Initiation & Binding:

- **Virus enters into the body, then targets a particular cell of a organ.**
- **Then, it binds to the CD4 cells, which are a type of immune cell that plays a crucial role in fighting infections.**

Uncoating:

- Human Immunodeficiency Virus (HIV) that causes Acquired Immunodeficiency Syndrome (AIDS), have an outer envelope that is composed of lipids and viral proteins.
- When a retrovirus infects a host cell or target cell, the viral envelope fuses with the cell membrane, allowing the viral contents to enter into the cell.
- Then it releases protease, integrase, viral RNA.

Reverse Transcription:

- Viral RNA converts to Viral DNA through this process.

DNA Copy:

- In this stage, viral DNA starts to copy host DNA or human DNA.

Transcription:

- Viral DNA converts to m-RNA.

Translation:

- m-RNA converts to polypeptides.
- Then, polypeptides converts in to functional proteins, that will help the virus to replicate.

Assembling:

- In this last stage, complete rearrangements of different components of virus occurs to form a complete virus.

- Then, it spreads through out the body by decreasing immune system.

CLINICAL MANIFESTATION:

- **Rapid weight loss:** People with AIDS may experience unexplained and rapid weight loss, which is often accompanied by loss of appetite and fatigue.
- **Night sweats:** AIDS can cause night sweats, which are episodes of excessive sweating during sleep.
- **Fatigue:** People with AIDS may experience severe fatigue, which can affect their daily activities and quality of life.
- **Swollen lymph nodes:** AIDS can cause the lymph nodes to swell, particularly in the neck, armpits, and groin.
- **Recurring fever:** People with AIDS may experience recurrent or persistent fever, which can be a sign of an opportunistic infection.
- **Persistent cough:** AIDS can cause a persistent cough that is not related to a respiratory infection or allergy.
- **Skin rashes or sores:** AIDS can cause skin rashes or sores that are difficult to treat and may be a sign of an opportunistic infection.
- **Shortness of breath:** AIDS can cause shortness of breath, which may be due to lung infections or other respiratory problems.

DIAGNOSIS:

- **Family history & Medical history**
- **Physical examination:** The healthcare provider will check for signs & symptoms.
- **Blood tests:** Blood tests may be done to check for signs of infection, such as elevated white blood cell count.
- There are several types of HIV antibody tests, including **enzyme immunoassay (EIA)** and **rapid tests**. If the initial antibody test is positive, a confirmatory test, such as a **Western blot or an indirect immunofluorescence assay (IFA)**, may be performed to confirm the diagnosis.

(Note: It's important to note that the presence of HIV antibodies in a person's blood does not necessarily mean that they have AIDS. A person with HIV can live for many years without developing AIDS.)

PHARMACOLOGICAL MANAGERMENTS:

- **Nucleoside reverse transcriptase inhibitors (NRTIs):** Abacavir (Ziagen), Emtricitabine (Emtriva), Lamivudine (Epivir), Tenofovir (Viread), Zidovudine (Retrovir)
- **Non-nucleoside reverse transcriptase inhibitors (NNRTIs):** Efavirenz (Sustiva), Nevirapine (Viramune), Rilpivirine (Edurant)

- **Protease inhibitors (PIs):** Atazanavir (Reyataz), Darunavir (Prezista), Lopinavir/ritonavir (Kaletra), Saquinavir (Invirase)
- **Integrase inhibitors (INSTIs):** Dolutegravir (Tivicay), Elvitegravir (Vitekta), Raltegravir (Isentress)
- **Entry inhibitors:** Maraviroc (Selzentry)

NON PHARMACOLOGICAL MANAGERMENTS:

- **Use condoms during sexual activity:** Latex or polyurethane condoms can reduce the risk of HIV transmission when used correctly and consistently during vaginal, anal, and oral sex.
- **Limit your number of sexual partners:** The more sexual partners you have, the higher your risk of HIV exposure.
- **Avoid sharing needles: Sharing needles, syringes, or other injecting equipment can transmit HIV and other infections.**
- **Get tested and treated for sexually transmitted infections (STIs):** STIs can increase the risk of HIV transmission.
- **Pre-exposure prophylaxis (PrEP):** PrEP is a daily pill that can help reduce the risk of HIV transmission. It is highly effective when taken consistently.
- **Preexposure prophylaxis (PEP) after a possible exposure:** PEP is a short course of antiretroviral medication taken as soon as possible after a possible exposure to HIV.
- **Abstinence:** Abstaining from sexual activity is the only 100% effective way to avoid HIV transmission.