



جامعة الإمام عبد الرحمن بن فيصل
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Knowledge is
immunity

HIV



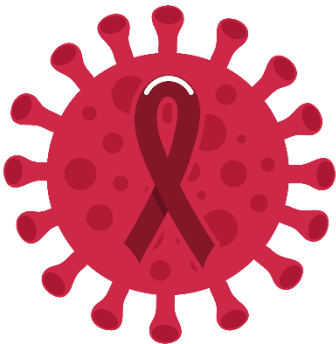
What is HIV?

HIV (**human immunodeficiency virus**) is a virus that multiplies upon entering the human body and targets the cells responsible for the immune system, called **T-cells**. The virus lives and reproduces within the body's cells, gradually **destroying immune cells and impairing their function**. This weakens the body, making it unable to fight off diseases caused by various microbes, such as bacteria and viruses. Consequently, the person experiences symptoms that vary from one individual to another and from time to time, depending on the level of immune cells.



What is AIDS?

AIDS (acquired immunodeficiency syndrome) is defined as the late phase of (HIV) infection that occurs when (the body's immune system is severely damaged) because of the virus. This term describes the condition resulting from a series of infections and diseases, which can be life-threatening and occur when the immune system is severely damaged due to uncontrolled HIV.



What is the difference between HIV and AIDS?

Acquired immunodeficiency is a virus that attacks the cells of the immune system that fight infection. When a person is infected with HIV and goes untreated, they can easily become ill because their immune system doesn't work as well to fight off infections.

AIDS (acquired immunodeficiency syndrome) is the name used to describe the advanced stage of the disease, which is characterized by potentially life-threatening opportunistic infections. It occurs when the immune system is severely damaged and loses its ability to defend the body.



what are the Signs and symptoms?

- the patient can present without distinct clinical features,
- particularly in early stages. Many individuals remain asymptomatic during the initial period following exposure.
- The incubation period is typically from 2 to 4 weeks,
- infectiousness peaking twice:
 - Initially during the acute infection phase
 - later during the advanced stages of AIDS. This variability in presentation poses significant challenges for early diagnosis and management.



The acute phase of HIV infection

referred to acute retroviral syndrome (ARS),

- occurs within weeks of viral exposure and resembles a mononucleosis-like illness. Common symptoms include:
- Systemic symptoms: fever, fatigue, and generalized body aches (myalgia and arthralgia).
- Dermatological manifestations: rash
- Nodal involvement: non-tender generalized lymphadenopathy.
- Digestive system and weight: oral intolerance (nausea), loss motion and diarrhea, and unintentional weight loss.
- Oral including airway and esophagus: sore throat, painful swallowing (odynophagia), and oral ulcerations.



The acute phase

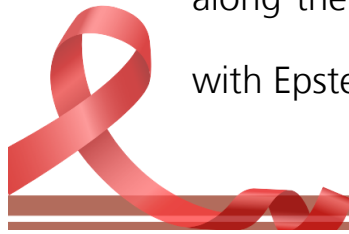
reflects high viral replication and a significant decline in CD4+ T-cell counts, leading to systemic inflammation and widespread clinical manifestations. While these symptoms often resolve spontaneously, their duration and severity can vary and may correlate with the progression of the disease



Clinical latency phase

Individuals may remain asymptomatic for extended periods. However, as the CD4 count falls below 500 cells/mm³, several non-AIDS-defining conditions may emerge. These include:

- **Persistent systemic symptoms:** Low-grade fever and chronic diarrhea.
- **Localized infections:** Oral candidiasis, presenting as white plaques on the oral mucosa that can be scraped off, and recurrent vaginal infections caused by yeast or trichomonads.
- **Dermatological conditions:** warts, shingles, and psoriasis exacerbations.
- **Oral hairy leukoplakia:** Unremovable white lesions along the lateral borders of the tongue, associated with Epstein-Barr virus



AIDS

AIDS represents the most advanced stage of HIV infection and is defined by a CD4 count below 200 cells/mm³ or the occurrence of specific AIDS-defining illnesses. Key features include:

- **Opportunistic infections:** Commonly observed infections include *Pneumocystis jirovecii* pneumonia and esophageal candidiasis.
- **AIDS-associated malignancies:** Kaposi's sarcoma, invasive cervical carcinoma, and other malignancies are becoming increasingly prevalent.
- **Systemic symptoms:** Severe weight loss, prolonged fever, and night sweats are hallmarks of this stage.

Profound immunosuppression: This stage is associated with life-threatening infections and a significant decline in overall health and quality of life



What is the mode of transmission?

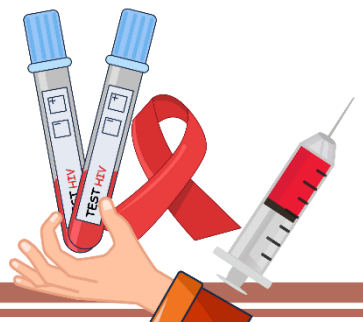
1. Sexual:

accountable for ~ 80% of cases worldwide.

- Risk divided:
 - Men-to-Men sex: (MSM): 0.5% for receptive partner
 - Male-to-Female sex:
 - 0.1% for female partner
 - 0.05% for male partner

2. Parenteral (Intravenous/blood):

- Needle sharing: 0.67% per exposure.
- Needlestick injuries: 0.36% per injury.
- Infectious blood on mucous membranes: 0.1% per exposure
- Blood transfusions: 0.00005% risk per transfusion (1 in 2 million)



3. Vertical (from mother to child):

- During delivery: ~ 5–15%
- Breastfeeding: ~ 5–20%
- Providing the proper medication to pregnant women living with HIV and their newborn babies will cut the risk of transmitting HIV to 2% or less.

Note: The risk of transmission can be significantly lowered if HIV infection is treated consistently and viral load is below the limit of detection.



What is the Prevention?

Behavioral change/lifestyle modification

- Avoid illicit sexual relations
- Limit the number of sexual partners: Fewer partners reduce the risk of exposure to HIV and other sexually transmitted infections.
- Communicate with your healthcare provider about your HIV status and history of Sexually transmitted infections.
- People who are at high risk can proceed to medical counseling for pre-exposure prophylaxis (PrEP) and post-exposure prophylaxis (PEP). If you are at high risk of HIV, PEP can be considered up to 3 days after exposure.
- Use condoms



What is the Prevention?

Avoid Sharing Needles

- Never share needles, syringes, or other injection equipment.
- Seek support for substance use disorders to reduce risky behaviors associated with drug use.

prevent Mother-to-Child Transmission (MTCT)

- Pregnant women living with HIV should receive **antiretroviral therapy (ART)** to reduce the risk of transmitting the virus to the baby during pregnancy, childbirth, or breastfeeding.

Opt for safe delivery methods and consult a healthcare provider for guidance on infant feeding options



What is the Prevention?

Regular Testing and Early Treatment

- Those who are at high risk for HIV (sexually active)
- If you test positive, start and adhere to **antiretroviral therapy (ART)** to suppress the virus to undetectable levels (U=U: undetectable = untransmissible).

Male Circumcision

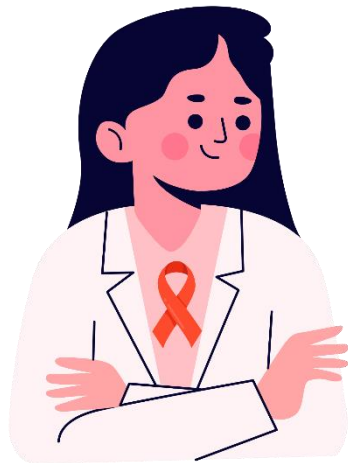
- Medical male circumcision can reduce the risk of heterosexual transmission of HIV by about 60%.



What is the Prevention?

Educate and Raise Awareness (most important)

- Promote accurate information about HIV transmission and prevention to combat myths and stigma.
- Encourage community-based education programs, especially in high-prevalence areas.



What is the treatment for AIDS?

- HIV is treated with Antiretroviral therapy for life.
- Studies are still ongoing for definitive treatment.

Usual treatment regimen:

There is no cure for HIV, and treatment focuses on limiting the reproduction of the virus as much as possible.

Targeting virus replication cycle to decrease the viral load.

- 2 NRTIs (nucleoside reverse transcriptase inhibitors) PLUS 1 PI (protease inhibitor)
- 2 NRTIs (nucleoside reverse transcriptase inhibitors) PLUS 1 INI (integrase inhibitor)
- The treatment course will be adjusted according to the drug susceptibility.
- Keep in mind that combination pills enhance compliance.



The 1st of December is World HIV Day.

Spread awareness and be part of prevention



References:

Pictures from Canva.com

review and audit

The content of this booklet was reviewed by Infectious diseases
department at King Fahd University Hospital.

Infectious diseases – Internal Medicine

Health Awareness

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