

**Topic: AIDS**  
**Class: B.Sc Part –III (Hons.)**  
**Paper- VII**  
**Group – A**

**Faculty Name : Dr. Kumari Sushma Saroj**

**Department: Zoology**

**College: Dr. L. K. V. D College, Tajpur, Samastipur**

# Clinical stages of infection

- **1. Primary (acute) HIV infection**
- HIV enters the body by infecting CD4 cells in the mucous membranes of the vagina or the rectum, or by direct infection of CD4 t-cells in the bloodstream.
- At this stage pre-exposure prophylaxis using antiretroviral drugs can prevent HIV infection if it is taken consistently.
- Post-exposure prophylaxis with a three-drug antiretroviral combination can prevent HIV infection at this stage and for up to 72 hours after exposure.

- Dendritic cells are among the first to encounter HIV,
- Their job is to transport infectious agents to the lymph nodes.
- When HIV arrives in the lymph nodes – around 24 to 48 hours after exposure
- they activate other immune cells, such as CD4 t-cells, HIV's primary target

- It is here in the lymph nodes that HIV begins to replicate.
- At this stage, HIV is not detectable in the blood by viral load (HIV RNA) testing or antibody testing.
- This stage may last for between 7 and 21 days and during this period HIV can only be detected by taking samples directly from the lymph node tissue (biopsy).
- Three-drug antiretroviral therapy begun at this stage of HIV infection may greatly restrict the spread of HIV to long-lived cells of the immune system that form a 'reservoir' of HIV infection in the body.

- Several weeks after infection HIV becomes detectable in the blood by viral load testing.
- At this point people may begin to experience symptoms of acute HIV infection as levels of HIV in the blood rise very high.
- Common symptoms of acute HIV infection include fever, body rash, swollen glands, among others. While fever and rash are the most common symptoms of acute HIV infection, not everyone will experience these.

- Symptoms of acute infection may last for up to 2 weeks.
- Viral load reaches its peak at this time and may measure above 1 million copies per ml of blood. CD4 cell levels will fall at this time too.
- The likelihood of transmitting HIV is highest during the first few months after infection
- when HIV levels in blood, semen and vaginal fluid are very high.
- Around three to four weeks after infection, HIV antigen (p24) will also become detectable

- 'Fourth-generation' antibody/antigen tests which combine the detection of HIV antibodies and HIV p24 antigen will show a positive result at this stage.
- Within a further 4 to 8 days HIV antibody-only tests using blood will show a positive result.
- HIV levels begin to fall in the blood and CD4 levels begin to rise again, although not to the level prior to infection.
- After around 6 months viral load and CD4 levels will stabilise at a level known as the `set point