Summer 2015

What You NEED to Know about HIV/AIDS

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HIV is a member of the lentivirus genus. These viruses are characterized by long latency period and progressive infection where the virus evolves the immune response of the host. The virus is transmitted through blood, semen, vaginal fluids, and breast milk. HIV infects cells in the immune system and the central nervous system. More specifically, HIV can infect the CD4 T cells, also known as T lymphocytes. T cells play a crucial role in the immune system to fight infection. Therefore, a significant reduction in T cells weakens the immune system. HIV is comprised of two antigens that are specific to the virus: glycoprotein 120 and 41 (gp120 and gp41). These two antigens bind with immune cells to initiate the infectious cycle (Moss, 2013).

In order for the virus to survive and replicate, the virus must first infect the cell. This occurs through the following stages:

1. Attachment - The virus attaches to the host cell using specific receptors on the cell surface.
2. Penetration - The virus enters the cell through a process called endocytosis.
3. Maturation - The virus assembles inside the cell and the new virus buds out and is released.

HIV occurs in four phases: primary infection, clinically asymptomatic HIV, symptomatic HIV, and AIDS.

### Signs and Symptoms

- **Stage I**: The initial stage of HIV infection occurs within 6 to 12 weeks after exposure. The symptoms include fever, fatigue, and aches.
- **Stage II**: The second stage of HIV infection is also known as the asymptomatic stage. This stage can last for years and can progress to AIDS without treatment.
- **Stage III**: The symptomatic stage of HIV infection is characterized by a variety of symptoms, including fever, fatigue, and aches.
- **Stage IV**: The final stage of HIV infection is known as AIDS. Symptoms at this stage can include weight loss, persistent fatigue, and weakness.

### Treatment

Treatment for HIV/AIDS is focused on slowing the progression of the disease and improving the quality of life. Antiretroviral therapy is the mainstay of treatment. The aim of antiretroviral therapy is to reduce the viral load to undetectable levels, which can slow the progression of HIV to AIDS. ANTIRETROVIRAL THERAPY.

### Prevention

Prevention of HIV/AIDS is crucial to reducing the spread of the virus. The most effective way to prevent HIV infection is through the use of condoms and other barrier methods during sexual intercourse. Other preventive measures include avoiding sharing needles, and avoiding exposure to infected blood or other body fluids.

### References


