

HIV and AIDS pathogenesis review

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Human immunodeficiency virus (HIV) infection is a viral infection that progressively destroys certain white blood cells and can cause acquired immunodeficiency syndrome (AIDS). Sadly, the disease is still incurable.

This review addresses advancements in understanding of the pathogenic mechanisms of HIV disease by focusing on the direct and indirect effects of virus on the major constituents of the immune system.

The goal of treatment strategies is to inhibit the viral replication as completely as possible by using a combination of 3 or more antiretroviral drugs. The active antiretroviral therapy has radically changed the clinical outcome of HIV, leading to decreased mortality and morbidity, at least in developed countries.

When HIV enters a human cell, it releases its RNA, and an enzyme called reverse transcriptase makes a DNA copy of the HIV RNA. The resulting HIV DNA is integrated into the infected cell's DNA. This process is the reverse of that used by human cells, which make an RNA copy of DNA. Thus, HIV is called a retrovirus, referring to the reversed (backward) process. HIV progressively destroys some types of white blood cells called CD4+ lymphocytes. Lymphocytes help defend the body against foreign cells, infectious organisms, and cancer. Thus, when HIV destroys CD4+ lymphocytes, people become susceptible to attack by many other infectious organisms. Many of the complications of HIV infection, including death, usually result from these other infections and not from HIV infection directly. AIDS is the most severe form of HIV infection. HIV infection is considered to be AIDS when at least one serious complicating illness develops or the number (count) of CD4+ lymphocytes decreases substantially. During recent years, significant progress has been made in HIV treatment, due to the availability of potent antiretroviral drugs.

There were 22 649 HIV registered cases as of 1 March 2017, the amount of people living with HIV was 17 605, the spreading index was 185.2 per 100 000 population. During the first 2 months of 2017 431 HIV-positives was revealed and the situation keeps progressing. Thus, it is very important to bring in the masses the information about what is HIV, how does it work and how to deal with it.