

HIV/AIDS the Major Infectious Virus among Individuals

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Abstract

Globally, million people are infected with HIV-1, with around 25 million having already died. There were 4 million new HIV-1 infections and 2 million AIDS deaths in 2005 alone. The diverse aspect of this emerging disease in terms of temporal shifts, spatial spread, severity, viral variability, and mode of dissemination is obscured by these figures. This pandemic has now reached every corner of the globe.

Heterosexual transmission continues to be the most common form of infection, accounting for roughly 85 percent of all HIV-1 infections. Southern Africa is already at the heart of the pandemic, with elevated concentrations of new HIV-1 infections. While overall HIV-1 prevalence in emerging epidemics in China and India remains modest, absolute figures are rapidly approaching those in southern Africa, which is cause for concern. A third of all HIV-1 infections occur outside of Sub-Saharan Africa, with the majority occurring in Eastern Europe and Central and Southeast Asia. The rapid dissemination of HIV-1 in these regions due to injecting drug use is critical because it serves as a bridge to more widespread epidemics.

Treatments

The identification of particular antibodies, antigens, or both is used to diagnose HIV-1 infection, and several commercial kits are available. Screening is usually done for serological examinations. The availability of rapid HIV-1 antibody tests has been a significant advancement. These tests are simple to perform and can yield results in as little as 20 minutes [1-3]. allowing for the collection of specimens and correct diagnosis in the same visit Rapid tests are useful for monitoring, screening, and evaluation, and they may be performed accurately on urine, serum, whole blood, or saliva by health-care professionals with little laboratory experience.

Antiretroviral therapy is the most effective way to achieve long-term viral suppression and, as a result, lower morbidity and mortality. Current medications, however, do not completely cure HIV-1 infection, and lifetime care may be needed.

Prevention

Mother-To-Child Transmission

In both industrialised and resource-constrained environments, advancements in preventing mother-to-child transmission have been made. Intrapartum transmission has been minimised by expanding access to treatments such as a single nevirapine dosage for both the mother and the new-born infant [4].

Sexual Transmission

In certain parts of the world, reducing heterosexual transmission is critical for disease prevention [5]. Prevention is accomplished by reducing the number of discordant sexual acts or the likelihood of HIV-1 transmission of discordant sexual acts.

Microbicides

Microbicides are another significant clandestine biomedical interference technology that is under the influence of women [6]. These topical drugs have the ability to inhibit HIV-1 transmission in the rectal and vaginal areas, but proof of concept is yet to be found.

Vaccines

The most effective, and perhaps only, solution to combat the HIV pandemic will be to develop a safe, protective, and affordable vaccine.

Despite extensive testing, the discovery of a candidate vaccine is still a long way off. Live-attenuated virus cannot be used as an immunogen due to safety issues [7].

Awareness of HIV-1 status is a critical first step towards both prevention and treatment. The number 207 many people are unable to access voluntary counselling and assessment programmes because they are afraid of learning their status, which can lead to shame and prejudice. When antiretroviral interventions (prevention of mother-to-child transmission, antiretroviral treatment) become more widely available, options for HIV-1 testing will expand, allowing for a prevention-care continuum to emerge, with voluntary counselling and testing as a point of entry. These developments will result in a transition in treatment strategies from an emphasis on people that are not infected with HIV-1 to a more effective spectrum of prevention that involves people who are uninfected, newly infected, infected, and asymptomatic, as well as people that have advanced HIV disease and are on antiretroviral therap.

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Received April 02, 2021; Accepted April 16, 2021; Published April 23, 2021

Citation: Mwale G (2021) HIV/AIDS the Major Infectious Virus among Individuals. *J Neuroinfect Dis* 12: 330.

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