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## AN OVERVIEW OF HIV/AIDS AND ITS TREATMENT

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### ABSTRACT

HIV/AIDS has always been regarded as one of the world's most serious worldwide epidemics. The human immune deficiency virus (HIV) is a lent virus that causes HIV infection and Aids. Aids is a situation way off individual way off which forward looking absorption certainly the immune system allowable life. HIV epidemics are spread through blood, sperm, vaginal fluids, and breast milk. HIV exists in both unrecompensed virus spots and virus spread by infected immune cells. HIV infects important immune cells such as helper CD 4 T cells and macrophages. A number of HIV-infected T cells were wrapped up in a number of clamoring T cells as the epidemic progressed. The symptoms of Aids are above all the conclusion of a specific action that does not typically occur when Hans crosses a healthy immune system. The majority of these actions are possibilities for epidemics caused by bacteria, viruses, fungi, and parasites that are usually overlooked by immune system elements associated with HIV infection. When two people are infected at the same time, the rate of HIV infection is reduced by more than 1% every year. Few index clamors suggest that women's condoms can provide an as constant sure shelter.

**Keywords: HIV/AIDS, infection, T-cells, immunity, epidemic**

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### INTRODUCTION

HIV is an abbreviation for human immunodeficiency virus. AIDS is an

acronym that stands for acquired immunodeficiency syndrome. H-It only affects humans and is also spread between

them. Humans are distinct from animals. It is not spread by insect bites, Mosquitoes, bats, and other animals. **I**-Our bodies have an immune system that protects us from bacteria, illnesses, and other harmful substances. A person infected with HIV, on the other hand, is unable to fight infections. Immunity, however, the system deteriorates. **V**-Virus is a little, basic creature that is dormant, outside the body and becomes active when it enters the human body. **A**-It is not inherited, which means it cannot be passed on from generation to generation. It is passed on to healthy people by afflicted individual. **I**-It suppresses the immunological system. **D**-Induces a lack of CD4+ cells in the immunological system. **S**-It is a group of illnesses.

HIV may be a virus that causes AIDS. Normally, our body has immune system that attack viruses and bacteria. Immune system has white blood cells which protect us from infections. White blood cells contain CD4+ cells which is additionally referred to as helper cells or T cells. An individual who is infected are going to be ready to develop. These infections cash in of body's immune system. These infections cause several health problems and even cause death of an individual. HIV has inability to guard against diseases and count of CD4 cells also

decreases in HIV. There is no cure of AIDS but there are certain medicines which are used to hamper the diseases so you stay healthier for long time. There's no medicine to urge obviate diseases.

The 120 in its name comes from its relative molecular mass. It is essential for virus entry into the cells because it plays vital role in attachment to specific cell surface receptors. It is a subunit of the envelope protein complex of retroviruses including human immuno deficiencies virus. It's family of enveloped viruses that replicate in host cell through process of polymerase. It targets a number cell. It is envelope through which virus binds. Viral core is formed from protein. Its bullet shaped. Three enzymes required for HIV replication are reverse transcription, integrase and protease. P24 is component of HIV capsid. It is a retroviral aspartyl protease that's essential for all times cycle of HIV, the retrovirus that caused AIDS. This enzyme cleaves newly synthesized polyproteins at appropriate place to create nature protein components of infectious HIV virion. Enzyme produce by retrovirus that permits its genetic material to be integrated into the DNA of infected cell. All organisms including most viruses store their genetic material on long strands

of DNA. Retrovirus is exception because their genes are composed of RNA

### Causes and Symptoms

It is caused by sexual contact from one person to a different person. HIV may be a virus. When someone becomes infected with HIV the virus weakens and damages their body's defense are used to hamper the diseases so you stay healthier for long time. There's no medicine to urge obviate diseases. It is cause by Sharing drug needles or syringes. Sexual contact including oral, vaginal or oral who is HIV positive. Having other sexually transmitted diseases like syphilis, herpes, and gonorrhea seems to extend the danger of being infected by HIV during unprotected sexual contact with infected partner. Babies are often infected by an HIV-positive mother during pregnancy, birth and nursing.

In two to four weeks of HIV infection flu-like symptoms developed in two-thirds of persons. This is the normal reaction of the body to HIV infection. Symptoms similar to flu might include: fever\ chills, sweats rash night, aches muscle, heart of sore, fatigue, lymphatic nodes swollen, ulcers in the mouth

Such symptoms may continue from a couple of days to weeks. However, at this stage of HIV infection, some persons experience no

symptoms at all (**Henn, Flateau, & Gallien, 2017; Quinn, 1997**).

The virus is still multiplying at this stage, but extremely low. People may not feel ill or have symptoms at this time. In this phase, it is also known as chronic HIV infection. Without therapy for HIV, people can continue for 10 or 15 years in this stage, while some will proceed more quickly (**Rabkin et al., 1991**). If anybody has HIV and is not being treated, the body's immune systems will ultimately be weakened and AIDS (acquired immunodeficiency syndrome) develops. AIDS symptoms may be: Rapid weight loss, fever or abundant sweats at night, unexplained and extreme fatigue, the armpits, groin, and neck have a longer enlargement of the lymph glands. This lasts longer than a week for diarrhea, Mouth sores, anus, or genital sores, Pneumonia, Blocking in the skin or the mouth, nose or eyelids is rough, brown, pink, or vile; Loss of memory, sadness, and other neurological conditions

These symptoms are shown due to the other diseases that are produced due to the weakness of the immune system from HIV (**Blattner, Gallo, & Temin, 1988; Norval, 2004**).

HIV is transmitted principally in three ways: By sexual contact, by blood through

transfusion, blood products or contaminated needles or by passage from mother to child. Although homosexual contact remains a serious source of HIV within the us , “hetero sexual transmission is that the most important means of HIV spread worldwide today.” Treatment of blood products and donor screening has essentially eliminated the danger of HIV from contaminated blood products in developed countries, but its spread continues among intravenous drug users who share needles. In developing countries, contaminated blood and contaminated needles remain important means of infection. Thirteen to thirty-five percent of pregnant women infected with HIV will pass the infection on to their babies; transmission occurs before also as during birth. Breast milk from infected mothers has been shown to contain high levels of the virus too.

HIV is most usually diagnosed by looking for antibodies to the virus in your blood or saliva. Unfortunately, it takes your body a long time to build these antibodies—up to 12 months in most cases a week. A newer test that looks for HIV antigen, a protein generated by the virus shortly after infection, can promptly confirm a diagnosis. This test determines how much virus is present in your blood. According to studies,

those with greater viral loads had a worse prognosis than those with lower viral loads. Drug resistance is a problem. This blood test determines if the HIV strain you have is resistant to antiretroviral drugs.

A home test that has been approved by the Food and Drug Administration. You swab fluid from your upper and lower gums to perform the test. If the test is positive, you should see your doctor to have the diagnosis confirmed. If the test is negative, the results must be repeated in three months to be certain.

HIV transmission needs contact with a body fluid, which includes the virus or virus-infected cells (**Phillips, 1994**). Almost any bodily fluid may contain HIV, but mainly the virus transmitted through blood, breast milk, semen, and vaginal secretions (**Dunn, Newell, Ades, & Peckham, 1992; Sandala et al., 1995**). While tears, saliva, and urine can contain low levels of HIV, transmission by these fluids is exceedingly unlikely (**Campo et al., 2006; Malamud, 1992**). HIV does not pass on either incidental contact or close non-sexual contact like hugging, holding, or kissing. The coughing or sneezing of an infected individual or a mosquito bite has never been connected to any cases of HIV transmission. It is exceedingly rare to transmit from an

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infected doctor or dentist to the patient **(Britto, Yuvaraj, & AIDS, 2020)**.

The danger of HIV transmission is highest when a condom is poorly applied or not used during vaginal or anal intercourse **(Rodger et al., 2019)**. HIV transmission can also happen during oral sex, but it is lower than in vaginal and anal intercourse **(Robinson & Evans, 1999)**. The incidence of HIV is raised when vaginal secretions and semen are rich in HIV and during unprotected relations between the membrane of the mucus lining, the mouth, rectum, vagina, and penis **(Kim, Riolo, & Koopman, 2010)**.

The following ways of HIV transmission:

The initial weeks following infection are caused by the very high levels of HIV in blood and body fluids. Violent sex work damaging the skin or membranes of the vagina, mouth, uterus, or rectum. Physically associating with each partner who has sexual herpes infection, syphilis, or other sexually transmitted diseases that can cause blisters or rips in the skin or genital inflammation.

The danger of HIV infection is higher for young individuals during heterosexual intercourse since they are less in control of their emotions, and hence are more susceptible to hazardous sexual activity, for example having multiple sex partners but don't use protection **(Johnson et al., 1989)**.

Health professionals using an HIV-contaminated syringe unintentionally have a chance to get HIV unless they are treated as soon as feasible after exposure. The danger of HIV infection is reduced by such therapy. The danger increases if the needle is severely penetrated or if it is a hole and contains HIV-contaminated blood (like the needle used to take blood or inject illicit medicines) instead of blood simply (as with a needle used to stitch a cut). Infected fluid splashes into the mouth or eyes have a probability of infection is lessened **(Hoelscher et al., 1994)**.

There are the following ways of HIV infection transmission from mother to child: From placenta to the baby. Through the birth canal while baby pass through it. Through breast milk after birth. The transmission of HIV at birth is 25 to 35% if the infected mother is not treated, and during breastfeeding the children are likely to be affected by 10 to 15% **(Kourtis, Lee, Abrams, Jamieson, & Bulterys, 2006; Newell, 1998)**.

HIV infection is very rare to spread via blood transfusion or organ transplantation. Since 1985, every blood collection for transfusion has been treated for HIV, and some blood products are treated thermally to remove the danger of HIV infection

transmission in most developed nations. In the USA, it is believed that the present danger of HIV infection due to a single blood transfusion (which is closely monitored for HIV and many other viruses) is lower than 1 in roughly 2 million people. Blood and blood products are, however, not checked for HIV in many underdeveloped countries or not screened rigorously, and the risk is still significant **(Petersen, Simonds, & Koistinen, 1993)**.

HIV transmission is also feasible if sperm is used to inseminate a woman from an infected donor. Measures to decrease this danger were implemented in the United States. No more usage of fresh semen samples. Donor sperm has been frozen for more than 6 months. Then, before sperm is utilized, the donor's sperm is screened for human immune deficiency infection. When a sperm donor knows that it has HIV infection, the removal of HIV from sperm by washing sperm is an efficient technique (Ross, Elgas, & Roggendorf, 1998).

### **Treatment**

HIV is treated with antiretroviral medications. These are antiretroviral medications that work against the human immunodeficiency virus (HIV). They can help you live longer and have a better

quality of life. The following are the several types of antiretroviral drugs: Zidovudine (AZT), Didanosine, Lamivudine, and Tenofovir are examples of nucleoside reverse transcriptase inhibitors (NRTIs). Nevirapine, Delavirdine, and Efavirenz are nonnucleoside reverse transcriptase inhibitors. Indinavir, Nelfinavir, Amprenavir, Lopinavir, and Atazanavir are all protease inhibitors.

In 1987, the first type of medicine available to treat HIV infection was nucleoside analogue reverse transcriptase inhibitors (NRTIs). When HIV enters a cell, it replicates its genetic code into the cell's DNA, programming the cell to make new copies of HIV. These inhibitors act as fake building blocks, competing with nucleosides in the cell to impede DNA synthesis.

NNRTIs (non-nucleoside reverse transcriptase inhibitors) were first licenced in 1997. By targeting reverse transcriptase, they also make it difficult for HIV to infect cells. Non-nucleoside reverse transcriptase inhibitors, unlike nucleoside analogue reverse transcriptase inhibitors, bind directly to the enzyme. It is an antiretroviral medication with a high level of activity. HAART can also be used to treat HIV. It's a three-drug combo.

### **Discussion and Conclusion**

Theorizing about 'family interventions' and 'HIV/AIDS-family interventions' is critical for identifying the components that must be included in the construction of culturally adapted HIV/AIDS family interventions. Furthermore, any proposed HIV/AIDS family intervention should consider the impact of HIV/AIDS on the family throughout the family's lifecycle, disease trajectory, and from an interdisciplinary perspective. When creating interdisciplinary HIV/AIDS-FIs, family nurses' training needs should be considered. Nurses should also take the lead in pushing for HIV/AIDS family intervention and HIV/AIDS family policy to improve family functioning, processes, and relationships. More study on families, family interventions, effectiveness, and cost of family-focused programs is needed.

Antibodies to HIV are the focus of the most common HIV testing. Enzyme immunoassay (EIA) testing can take up to two weeks to detect HIV antibodies in blood, oral fluid, or urine. Rapid HIV antibody tests identify antibodies in blood, oral fluid, or urine and provide results in 10–20 minutes. If you test positive for HIV following an EIA or fast antibody test, you'll need to do a second test called a Western blot test to confirm your

diagnosis. A positive result can take up to two weeks to confirm.

Historically, HIV prevention initiatives have mostly focused on developing risk reduction measures for people who are at high risk of contracting the virus. Only 18 (32.7 percent) of 55 state and city applications to the CDC for money for HIV prevention programs named HIV-infected individuals as a target demographic for HIV prevention initiatives, according to a 1999 assessment. Despite the fact that millions of people in the United States are at "behavioral risk" for HIV infection, the virus can only be transmitted between infected persons. As the number of people living with HIV continues to rise as a result of antiretroviral therapy (ART), so does the need for lifetime preventive programs tailored to them. When two people are infected at the same time, the rate of HIV infection is reduced by more than 1% every year.

We declare that we have no conflicts of interest.

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