International Journal of Psychosocial Rehabilitation, Vol. 23, Issue 06,
2019 ISSN: 1475-7192

Acquired Immunodeficiency Syndrome: A Review

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Abstract--- *HIV stands for the virus that causes HIV, a human immunodeficiency virus. "HIV" may be used to identify the virus or HIV infection. AIDS is the inherited condition of immunodeficiency. AIDS is the current level of infection with HIV. The CD4 infection control cells of the immune system are attacked and destroyed by HIV. CD4 cell loss makes treating diseases and certain cancers impossible for the human body. HIV will phase out the immune system and move towards AIDS without treatment. These 13 treatment and care protocols form the cornerstone of the strategic actions of WHO in its contribution to the universal access of the United Nations Member States to HIV / AIDS prevention, treatment and support services. These replace HIV / AIDS Treatment and Care: CIS (2004) WHO guidelines and have been adapted explicitly to the whole WHO of Europe. The 13 guidelines together provide a comprehensive and evidence-based method to provide clear and specific instructions for the diagnosis and management of a wide range of HIV / AIDS-related health problems, such as antiretroviral treatment, for adults, young people and infants. Treatment of opportunistic infections, influenza, hepatitis, injection drug use, sexual and reproductive health, mother-to-child transmission of HIV, vaccination, palliative care and prophylaxis after exposure. Since treatment and care for people living with HIV is an ever developing field, these protocols can be updated in the future.*

Keywords--- *AIDS/HIV, Human, virus, immunodeficiency, influenza, hepatitis, injection drug use, sexual.*

I. INTRODUCTION

It was derived from primate simian immunodeficiency (SIV) viruses 1 and 2 (HIV-1, HIV-2). There is therefore a zoonotic origin for HIV-1 and HIV-2, and it is now directed between humankind and humans. In 1983, HIV-1 was originally isolated and in 1986, HIV-2 was a split of two epidemics. The chimpanzees SIV contributed to HIV 1 in humans and the sooty manage monkey (SIVSM) SIV in humans to HIV-2.1 It is still uncertain how precisely this SIV has been transmitted to humans, but the indigenous population in these regions, in Central and Western Africa, may have been in hunting and preparation for food during these primates. The HIV virus is displayed in Figure 1. [1]

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Received: September 2019 | Revised: October 2019 | Accepted: November 2019

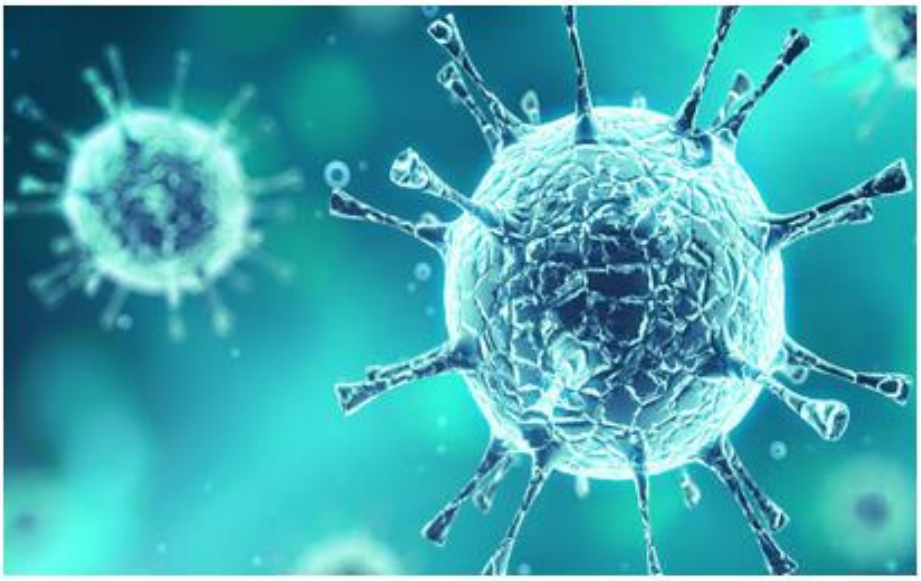

Figure 1: AIDS/HIV Virus

Both species of primate live in Africa. Research using molecular-clock evolution theories indicate that ancestor HIV-1 virus emerged approximately in 1931 and that in HIV-2 in approximately 1940. Following the initial event of transmission, the HIV-1 primate virus (HIV-1, HIV-2). When a cell is infected with HIV, it interacts with the genetic material of that cell and can remain inactive for years. Many people with HIV tend to be healthy and live without complications or minor diseases for many years. We are HIV-infected, but have no AIDS.

The virus becomes triggered and gradually results in serious infections and other diseases which characterize AIDS after a variable period of time. While therapies may prolong life, the disease of AIDS is fatal. Work on new vaccinations and, in the end, the cure begins. However, transmission prevention is still the only method of control at present. Two white blood cell types, the CD4 + lymphocytes and monocytes / macrophages, are infected by HIV. CD4 + cells and macrophages normally aid in identifying, destroying and invading the cell and causing the disease of bacteria, viruses or other infectious agents. CD4 + lymphocytes are destroyed by the virus in an HIV-infected person, whereas the macrophages function as the stores that carry HIV to different vital organs. [2]

HIV binds to and flows inside the lymphocyte CD4+. This leads to more HIV in the cell but in this way it will destroy the cell. The immune system is less able to fight viral and bacterial infections because of the lack of CD4 + cells in its body. A large number of "opportunistic" infections, such as Pneumocystis carina pneumonia, are rarely seen in those with normal immune systems. The risk of TB is a specific one in areas around the world where TB and HIV infection are rising at alarming rates. TB is also a danger to HIV-positive persons as displayed in Figure 2. The disease is now established by millions of TB carriers who otherwise avoided active tuberculosis because their immune systems are under attack from HIV [3]. Figure 2 shows infection in human body due to HIV.

Received: September 2019 | Revised: October 2019 | Accepted: November 2019

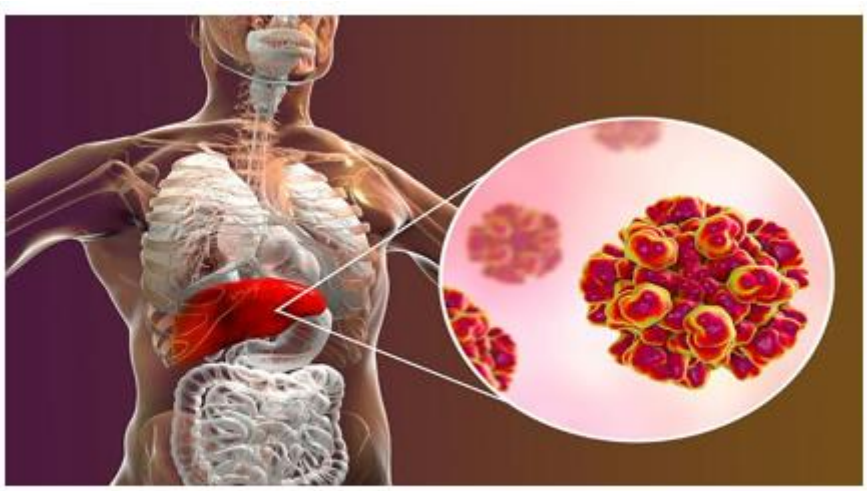

Figure 2: Infection in human body due to HIV virus

For HIV infected individuals, TB also grows quicker and is more likely to become lethal if undiagnosed or untreated. TB is now African HIV-infected people's leading killer. Also more vulnerable to otherwise uncommon cancers, like Kaposi's sarcoma, blood vessel tumours or lymph vessels, are the HIV-infected people. A neurological or neuro psychiatric problems can be caused by HIV, also in the brain. Generally speaking, nearly 50% of people diagnosed with HIV will develop AIDS within 10 years. The good news is that early treatment with better medical products greatly improves people with AIDS ' lives. [4]

II. MODE OF TRANSFER OF VIRUS

Body fluids spread HIV. HIV. A variety of blood, semen, vaginal secretions, breast milk, urine, saliva and tears have been separated from it. It segregated. The risk of transmission through contact with a given fluid is both related to the quantity and form of exposure of the virus present in a fluid. In such small concentrations of tear, saliva and urine HIV were found to be theoretically possible but highly unlikely to spread by casual contact with these fluids.

Behaviours that lead to some types of blood, semen, vaginal secretions and breast milk exposure— all of which contain higher HIV levels— can lead to HIV transmission, on the other hand. HIV is transmitted mainly through unprotected sex, regardless of gender or sexual orientation, and the use, for medical or illegal purposes, of non-sterilized injection equipment. It may be transmitted during pregnancy, prenatally or through breast-feeding from an infected mother to a child in utero. [5]

Sexual: Body fluid exchange can spread HIV to sexual behaviours. Although the transmission rate of HIV has been reported much higher for the semen receiver than for the sexual partner recipient. Two types of sexually transmitted diseases, or genital lesions, or the sexual activities causing the deterioration of the tissue or leakage, are known to be more at risk habits in the penile and penile-vaginal sex.

Injection drug use: A very effective means of transmitting HIV is to share the equipment used to prepare and administer medications with an HIV infected and, literally, to transfer viral particles directly from one to another. The risk of transmission is directly linked to the amount of the virus in the blood and the blood volume exchanged. The second most common risk factor for HIV injection medicines is use, with an increasing share of AIDS cases (24% in 1997).

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Injection medicines are used in AIDS cases. More than 1.5 million drug users have been estimated in the United States. [6]

Perinatal: Mother-to-child infection during conception, delivery or breast-feeding can occur. Due to the high number of breast milk lymphocytes that may result in mothers' transmission to new-born's, it is advised that HIV-infected mothers feed in bottles and do not nurse their babies in the USA and in other developed countries.

Blood Transfusion: In some parts of the world, the possibility of blood transfusions with infected blood products remains large. Donated blood has been tested in the US since 1985 for HIV-1 antibodies, and since 1992 for HIV-2 antibodies. As a result, the chance of blood transfusion is extremely low— below 0.001 percent. For addition, for 1996 the American Red Cross has been using the HIV antigen test to ensure that the blood donated is not contaminated with HIV. For donors that have not detected detectable ant corps after their initial infection, this test helps solve the problem of miss negative HIV antibody testing. Recurring inoculation with pooled donated factor VIII was a major HIV transmission source in haemophilia patients before lyophilized factor VIII was used. [7]

Cofactors for transmission: Cofactors can increase HIV transmission, but do not contribute to it. The actual cofactor is a manifestation of sexually transmitted diseases (for example, genital lesions, gonorrhoea, syphilis, and chlamydia) or of the sexual bleeding of the genital / mucus membrane. The use of mood or behavioural changes can serve as a compartmental cofactor because they can decrease sexual inhibitions, hinder judgement, or increase impulsiveness. Evidence on the impact of immune competence and HIV exposure or development of mentally changing substances are inconclusive. The blood transfusion is displayed in Figure 3.

Figure 3: Blood Transfusion

III. PATHOGENESIS OF HIV

The explosion of the virus, with widespread propagation of the virus throughout the body, especially in lymphoid tissue and within the CNS, happens three to six weeks after initial HIV infection. About 50%–90% of the population will have a non-specific "flu-like" illness with varying severity of cough, sore throat, rash, lymphadenopathy, and splenomegaly during the acute phase. Others are resistant to their infection and do not suffer from this seroconversion syndrome (8). Most people receiving multi-drug regimens, known as effective, combination or highly active anti-

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retroviral treatment benefit from new knowledge on the life cycle of HIV and from the discovery of several types of drugs that kill the virus at different points in a replication process (Figure 4). [8]

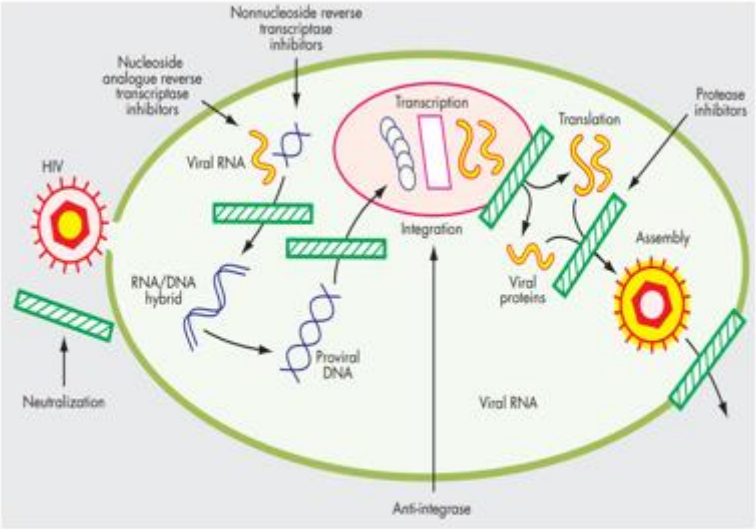

Figure 4: Pathogenesis of HIV

The host's immune system is starting to recognise the pathogen and is mounting an infection control response. In 1 or 2 months following initial infection, plasma viral titters can decrease to 100-fold. The recipient is called "seroconvert," which is a positive HIV antibody assay, when the host develops circulating antique-induced HIV. Although a persistent viral replication can continue to maintain the initial infection. Recently, it is discovered that after HIV transmission "resting CD4 T cells," antiretroviral therapy would not impact this HIV refuge once the HIV is contained inside T cells that remain. Such regimens— which contain at least three drugs that are used multiple times a day for the life of the infected individual with short and potentially long-term side-effects— require strict adherence. [9]

IV. TREATMENTS FOR AIDS/HIV

There is no cure for HIV or AIDS at present. Nonetheless, medications will stop the disease progression and allow most HIV-positive persons to live a long, relatively healthy life. It is important to initiate ART early on in the virus. In accordance with the WHO recommendations from June 2013, this improves the quality of life, extends life expectancy and reduces the risk of infection. Better and more efficient therapies have been developed that can improve overall health and quality of life by taking only one pill a day. [10]

A person who lives with HIV can reduce his or her viral load to such an extent that a blood test can no longer detect it. After the review of a number of extensive studies, it was concluded by the CDC that individuals who have no viral detectable load "have no risk of transmitting the virus sexually to a HIV-nugatory partner." Anti-HIV therapies, called post-exposure prophylaxis (PEP), can stop infection if an individual believes he or she has been exposed to the virus in the last 3 days. Upon potential virus touch, take PEP as soon as possible. PEP is an effective 28-day treatment, and after the end of the procedure, medical practitioners will continue to monitor HIV.

Received: September 2019 | Revised: October 2019 | Accepted: November 2019

V. CONCLUSION

Many people of the world who are diagnosed with HIV have little if any access to treatment for immune deficiency, let alone antimicrobial combination therapy. In the US, revised care guidelines for HIV infection improve the effectiveness of medication, increase patient survival and potentially decrease viral Resistance growth. Nucleoside reverse transcriptase inhibitors, nonnucleoside reversed transcriptase inhibitors, protease inhibitors, and the latest class, nucleotide analogues, are performed through a range of antiretroviral combinations in four classes. About 95% of all people infected with HIV currently live in the developing world, where 95% of all AIDS deaths have taken place to date. These deaths include mainly young adults who are usually reproductive and productive in their peak years. In certain parts of the world, the various consequences of these deaths are at the crisis level. AIDS never posed an even greater threat to growth, whether calculated against the measure of decreasing infant survival, decreasing life expectancy, overcrowded health care systems, increasing orphanage or ultimate loss to industry.

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Received: September 2019 | Revised: October 2019 | Accepted: November 2019