

Human Immuno Deficiency Virus; Mini Review

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Abstract

HIV/AIDS is sexually transmitted disease. Human immuno deficiency virus cause HIV Infection and AIDS. AIDS is condition is serious condition in human due to this progressive failure of the immune system which allows life threatened infection. Transmission of infection by blood, semen, vaginal fluid, breast milk etc. HIV virus is present in both free and those virus present within infected immune cells HIV virus. These cells also infects human immune system CD4 T cells. In this article authors mention in brief about HIV virus how it is spread by sexual contact or transmitted through contact with vaginal fluid, infected blood, semen and it's symptoms including fever, sore throat, fatigue muscle, flu symptoms is observed.

Keywords: Immune Virus; Sexual Transmitted Disease; Infection

Introduction

What is HIV?

HIV may be a virus that damages the system. The system helps the body repel infections. Untreated HIV infects and kills CD4 cells, which are a kind of immune cell called T cells. Over time, as HIV kills more CD4 cells [1], the body is more likely to urge various sorts of infections and cancers. HIV is transmitted through fluids. This virus not spread by casual touching, air and water [2,3]. HIV may be a lifelong condition and currently there's no cure, although many scientists are working to seek out one. However, with medical aid, including treatment called antiretroviral therapy, it's possible to manage HIV and accept the virus for several years [4]. Without treatment, an individual with HIV is probably going to develop a significant condition called AIDS [5]. At that time, the system is just too weak to repel other diseases and infections [6].

HIV or human deficiency virus is a virus that target the immune system overtime immune system is fails which is called immunodeficiency this increases infection in tumors that helps immune system usually fend off these complications are referred to AIDS- Acquired Immuno Deficiency Syndrome. There are two types of HIV:

1. HIV-1: HIV-1 is most commonly associated with U.S and world Worldwide.
2. HIV-2: HIV-2 is more rare in typically found in area of South Asia, Africa. HIV-2 is so uncommon.

HIV Target CD4 + Cells Meaning specific molecule CD4 in the membrane macrophage is Dendritic cells therefore can be targeted by HIV. CD4 Molecule helps cell in attached to communicate with other immune cells which is particularly important when the cell is launched attacked to the pathogens. This is also extremely important for HIV. It target and attached with CD4 Molecule where protein called *Gp120*. HIV again used *Gp120* to attached to another receptor (Co-Receptor) HIV needs to binded *Gp120* Molecule and Co-receptor to inside the cell the common co receptor uses EXER-4 Co-receptor-T cells, CCR 5-Macrophage, Monocytes, T cells and dendritic cells these co receptor is so important for HIV some person have genetic Homogenetic mutation in the CCR5 actually have resistance or immunity in a HIV. In fact heterozygous mutation which have fewer co receptor in the cells can make the harder for virus spread and results slow disease explanation. The other case of HIV is very different to this case once HIV binds with CD4 and CCR5 against access into the cell HIV is single stranded RNA retrovirus meaning that injects with RNA into the T helper cells.

Causes

Transmission by bodily fluid including following:

1. Semen
2. Blood
3. Breast Milk
4. Anal fluids
5. Vaginal fluid.

In previous study, specially in United States main cause of transfer or transmission of fluids are including vaginal intercourse with infected HIV person while not using protection or PrEP and injection sharing is also main reason. It passes by infected mother to children or infected mother at the time of milk feeding also a reason. In middle income country or Asia Pacific region blood donation or injection is the main example of that. HIV is not passes by touching hands or shaking hands till person not contact infected by sexual contact or fluid transmission.

Progression to AIDS

HIV progression varies which is depend upon various factors:

- The Age of Individual
- Other infections presence
- Drug resistance stains of Human immuno deficiency virus.

Symptoms

Infection by different bacteria, viruses, fungi parasites caused more severe symptoms of HIV. Symptoms include fever, voice change, fever, rashes, vomiting these symptoms going more than 1 month or more than that even some people it is observed that symptoms is not showing for several years and around 80% of people may develop flu symptoms which is commonly known as acute retroviral syndrome approximately 3 - 5 weeks virus will enter into the body.

These symptoms include:

1. Fever
2. Joint Pain

3. Muscle aches
4. Sore throat
5. Enlarged gland
6. Weakness.

These all are symptoms are also results from the immune system fighting to many viruses. Those people having several symptoms for longer period 6 - 7 week continuously definitely they should go for test.

Asymptomatic HIV: In this case none symptoms found for longer period of time or years 7 - 8 years after that suddenly symptoms arise.

Late stage HIV: HIV causes the person ill not able to fight against virus, immunity also loose this stage is called third stage or AIDS. Symptoms of late stage HIV may including:

1. Blurred vision
2. Problem in breathing
3. Dry coughing
4. Vomiting
5. Night sweats
6. Tired feeling
7. Weight loss or muscle loss
8. High fever (100°F) for several weeks.

During this stage infection arises serious problem directly related to serious illness or life threatening and a person who is in this stage can't control, prevent, only management is possible by using Anti-HIV drugs.

Prevention of HIV

Nowadays are various tools available for prevention of HIV virus, like limiting no. of sexual partners, no sharing of needles, using protection right direction at the time of physical or sex. Lots of prevention medicine is also available in the market such as (PrEP) and (PEP).

Person with HIV is challenging thing he/she have to take care prevention or transmission to others. Very important thing is taken timely medicine antiretroviral therapy or ART on proscribed manner. If person taking medicine timely there is very low risk for transmission of HIV virus from infected to healthy at the time of sexual activity or any fluid contact.

Treatment

Starting and maintaining treatment

Those have HIV infection, regardless of CD4 T cells or symptoms and using ART and antiretroviral therapy with HIV viral load into the blood is best test way to stay healthy medicine should proscribed only by physician or experts of the field without skipping any dosages or time interval staying ART medication with undetectable viral load helps the following:

1. Immune system strong
2. Minimize or reduce chances of getting an infection
3. Minimize chances of developing treatment-resistant HIV
4. Low chances of transmitting HIV to other people.

Saying with HIV Therapy is quite challenging there is very problems occurred without RMP or Physician, pharmacist or health expert time to time follow up is very important due to drug efficacy, it's adverse drug reaction into the body so time to time check-up with follow-up is essential part of any therapy in case HIV it is very important. Sometimes side effects will be showing into patient changes of mood and mental health effects with these type of problems very difficult to continue or maintain ART Therapy, Counselling with doctor of pharmacist is essential in HIV therapy if drug not affective medical practitioner will change the therapy or medicine as well.

Treatment side events

- Nausea, vomiting or diarrhea
- Heart disease
- Muscle loss
- Sourness
- Weakness
- Tired feeling continuously
- Kidney and liver damage
- Weakened bones or bone loss
- Abnormal cholesterol levels
- Higher blood sugar
- Nausea, vomiting or diarrhea.

Conclusion

In this short mini review we discuss about CD4 +, T cells, Dendritic cells, and other receptors those involved in HIV. We classified category of HIV1 and HIV-2 Vice versa; USA and Asia Pacific region. Myths clear regarding Transmission of human immuno deficiency virus like shaking hands etc. HIV causes with body fluid interaction with infected individual or spread by sexual contact. In this article we discuss everything about HIV and types and treatment and their symptoms we hoping this review helpful for researcher and students for understand the topic easily.

Author Contribution

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Conflict of Interest

Nil.

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