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## Natural Remedies on AIDS: A Review

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### ABSTRACT

Acquired Immunodeficiency Syndrome (AIDS) is a clinical infirmity that is a result of infection with Human immunodeficiency virus (HIV), which causes intense immunosuppression. Many compounds of plant origin that inhibit HIV during various stages of cycle these include several alkaloids, Carbohydrates, Xanthenes and tannins. These compounds have the capability to come up as a medication for therapy of HIV infection. Herbal medication provides rational means for the therapy of Aids, the Herbal drugs which are utilized in Nut, Turmeric, Asoka, Sarpagandha, Cotton Seed, Arjuna. So, the focus of this review article is to pinpoint possessing activity against HIV objective of providing an effective approach for prevention of transmission and therapy of these diseases.

**Keywords:** HIV, AIDS, Syndrome, Herbal remedies.

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## INTRODUCTION

Acquired immunodeficiency syndrome (AIDS) is caused by the Human immunodeficiency Virus (HIV) which crosses primates from humans (Rsj.Vishnu Kanta, et al, 2011).invades the helper T cells in the body of the host “defence mechanism of a person”. Although isolated cases of earlier, the first cases of the current epidemic probably occurred in the 1930’s, and the disease spread rapidly in the 1970’s (Kartikeyan S, et al, 2007). AIDS was publicly reported on 5<sup>th</sup> June 1981 (Alan Whiteside, 2008). AIDS is similar to plague and smallpox in the Middle Ages. Like Leprosy in bygone Centuries, human immunodeficiency Virus (HIV) infection is also associated with social stigma (Kartikeyan S, et al, 2007). HIV / AIDS are a classic example of a new unknown disease, which has caused a worldwide epidemic. HIV belongs to the class of Viruses called retrovirus (Rsj.Vishnu Kanta, et al, 2011). According to WHOM at the end of 2004 an estimated 40 million people were living with HIV globally from that about 22 million had died (Rsj.Vishnu Kanta, et al, 2011). India has the third largest HIV epidemic in the world, with 2.1 million people living with HIV till now no cure exists for AIDS. AIDS is the late stage of HIV infection that occurs when the immune system of the body is badly damaged. AIDS is transmitted by sexual intercourse which is carried by mother to child infection; sharing drug injected equipment and contaminated blood. Because transmission is only because sex, drug use (Alan Whiteside,2008). There are several alternative medicines System for AIDS Like:-

- Homeopathic Medicine: - It includes natural substances such as minerals, vitamins etc.
- Naturopathic Medicine: - It uses natural healing forces within the body to help it heal and stay healthier.
- Ayurveda: - It involves the use of mind, body and spirit to prevent and treat disease.

### **TYPES OF HIV VIRUS:** (Human Immunodeficiency Virus).

There are two types of HIV Virus in existence.

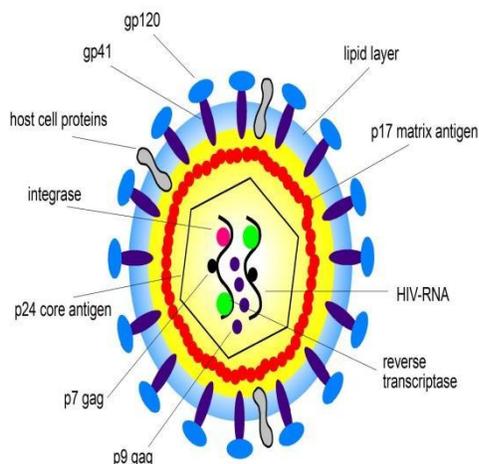
- HIV – 1 :- Discovered in 1983 (Kenrad E, et al,2001) and
- HIV – 2:- Discovered in 1986 (Kenrad E, et al, 2001).

These two viruses have similar genetic structures and also have the same mode of transmission.

- HIV – 1:- It is extended worldwide mostly in America, Europe & Central Africa (Kenrad E, et al, 2001). HIV – type 1 is Linked to SIV from P. troglodytes & G.gorilla In HIV -1 groups are M, N, O, P included and subtypes are ( A to D, F to H, J,K) (Paul A , et al ,2013).

- HIV -2:- It is transmitted primarily in West Africa (Kenrad E, et al, 2001). Less virulent and not spread as fast as HIV -1, HIV type In HIV-2 eight independent indicates transmission HIV-2 used groups A through H (Paul A , et al ,2013).
- The first HIV test was done by Gallo and colleagues in 1985. HIV which shows about 40 – 60% amino acid homology (John C, et al, 2019). If we compared HIV -1 and HIV -2 infections it shows slow rate clinical progression, transmission rate is also low. To identify the HIV infection always preferred serologic test to detect antibodies of HIV

## Structure



**Figure 1: Structure of HIV Virus**

## Acquired Immune deficiency Syndrome (AIDS)

AIDS is the “full-blown” Syndrome all called “frank” AIDS. The pertinacious suffering from AIDS often has several numbers of the rivalrous ailment. These ailments develop because of the global failure of the immune system. Drug therapy is accessible for many of these infections, nevertheless without the holdup of the immune system, the drugs break down to curve the ailment fully or is impotent to keep the ailment from returning. These rivalrous infections cause demise of most AIDS pertinacious (Kokate CK, et al , 2005) .

## Symptoms of AIDS:-

There are no limpid defined manifestations in HIV infected persons in commencing grandstand; however, they have a flu-like illness within a month or two after subjection to the virus. This illness may incorporate : rash, fever, headache, tiredness and enlarged Lymph nodes; more tenacious or severe symptoms may not appear even for 10 years or more after HIV sets foot in the body in adults or within 2 years in children born with HIV infection. This interval of “asymptomatic” infection varies greatly in each sole. Even during the asymptomatic interval, the

virus is actively growing, infecting and killing cells of the immune system other symptoms often experienced from months to years before the onset of AIDS incorporate :-

- Lack of Energy.
- Anorexia.
- Short term memory Loss.
- Weight Loss.
- Swollen Lymph glands
- Chills, fevers.
- Sweating (particularly at night)
- Persistent skin rashes or flaky skin.
- Pelvic inflammatory diseases in women that do not respond to treatment.

### **Herbaceous Medicament for AIDS:**

Medicaments procure from plants are customary to many cultures and a number of advanced pharmaceutical drugs were procured from plants. There are herbs that can cure threatening ailments such as tumor too. Occasionally it is said that where allopathic fails, herbal medicaments works. Herbal medicaments are said to work to such an extent that they can even do away with the need for the abscission. In India the medicines of herbs came to be known as Ayurveda. This form of medicine has used herbaceous plants to cure all forms of ailments (Kim HJ, et al, 1998).

### **Pathophysiology:**

The HIV virus is a retrovirus that is able to merge a DNA copy of the viral genome into the DNA of the host cells. The virus sets foot in the cell through receptors that are revealed on the surface of T-Lymphocyte (activated T-Lymphocytes are preferred targets), monocytes macrophages and dendritic cells.<sup>12&15</sup> to gain set foot in to the host cell, HIV-1 binds to the chemokine receptor 5 or the CXC Chemokine receptor 4 through interchange with the covering protein. After blending and uncoating single stranded RNA is reverse transcribed to viral MRNA and exported to the cytoplasm where it is translated to viral Gag, Gag pol, and Nef polyproteins which are then cleaved later during virion congregation and progression at the cell surface or after release of the new viral particles contemporaneous therapies impedemany of the steps in this process, such as entry inhibitors, reverse transcriptase inhibitor, integrase strand transfer inhibitors and protease inhibitors.<sup>12&15</sup>

### **Natural products and Herbal Medicines for HIV**

In spite of the effective antiretroviral therapy (ART) is not without steroids adverse events which is especially evident in pertinacious experiencing long-term treatment (Sharfi- Rad J , 2016) .

The natural products calanolides (coumarins), ursolic and betulinic acids (triterpenes), baicalin (flavonoid), polycitone A (alkaloid), Lithospermic acid (phenolic compounds) have been suggested as favourable candidates for anti-HIV agents (Kurapati KRV,et al , 2016) .There is noteworthy prospective for natural upshot and traditional medicaments of HIV infections and symptoms yet in Vivo and humans studies are Lacking behind.

### **Calendula Officinalis L (Asteraceae)**

In India, the flowers of *calendula officinalis* are used in embrocation for treating laceration, herpes, frostbite, abscess, skin damage, scars and blood purification. The infusions produced from the leaves have been used for treating varicose veins in traditional use. Dichloromethane methanol (1:1) extract of *Calendula officinalis* flowers exhibited potent anti HIV activity in vitro (3-(4, 5-dimethyl thiazolyl-2)-2, 5 diphenyltetrazolium bromide) (MTT)/ tetrazolium based assay. This venture was assigned to inhibition of HIV-RT at a concentration of 1000ug/ml as well as subduing of the HIV mediated fusion at 500ug/ml.<sup>4</sup>The organic and aqueous extracts of dried flowers from *Calendula Officinalis* were scrutinized for their potentiality to inhibit the human immunodeficiency virus type 1 (HIV-1) simulacrum. Both extracts were relatively innocuous to human lymphocytic Molt-4 cells, but only the organic exhibited potent anti-HIV activity in a vitro MTT tetrazolium based assay. It was also found that the organic extract from *Calendula Officinalis* flowers caused a noteworthy dose –and time-dependent reduction of HIV-1 reverse transcription (RT) activity. An 85% RT inhibition was attained after a 30 min treatment of partially purified enzyme in a cell free system. These results of flowers from *Calendula Officinalis* are possessed anti HIV properties of therapeutic interest (Kashman Y, et al, 1992).

**Table 1: Plants for Anti-HIV Activity.**<sup>3&9</sup>

S.No.	Family / Species	Active Constituents	Mechanism of Action
1.	Apocynaceae <i>Rauwolfia Serpentina</i>	Papaverine	Reticence of HIV reverse transcriptase and HIV cell growth.
2.	Combretaceae <i>Terminalia Arjuna</i>	Extract of stem bark	HIV protease reticence.
3.	Gentianaceae <i>Swertia franchetiana</i>	Flavanone- Xanthone glucoside	Reticence HIV-1 reverses transcriptase.
4.	Rosaceae <i>Crataegus pinnatifida</i>	Uvaol and ursolic acid	Inhibiting activity against HIV-1 protease.
5.	Umbelliferae <i>C.longa</i>	Curcumin	Inhibition of HIV-1 integrase, inhibition of Tat-mediated transactivation of

			HIV-1 long terminal repeat.
6.	Malvaceae Gossypium Spp.	Gossypol	Inhibition of giant cell formation of HIV infected cells, interference with viral adsorption and protein kinase C.

**Table 2: Phytoconstituents responsible for Anti-HIV Activity.<sup>2&10</sup>**

S No.	Phytoconstituents	Source
1.	<b>Saponins</b> Actein Saponin B1	<i>Cimicifuga racemosa</i> <i>Soybean Seeds</i>
2.	<b>Flavonoids</b> Robustaflavone Xanthohumol	<i>R. Succedanea</i> <i>Humulus Lupulus</i>
3.	<b>Alkaloids</b> Berberine Nitidine	<i>Berberis Aristata</i> <i>Toddalia asiatica</i>
4.	<b>Quinones</b> Hypericin	<i>Hypericum Perforatum</i>

#### MARKETED PREPARATION;-

##### **KAMILARI PLUS** (50 Capsules pack in plastic jar)

It is a very rare combination of various herbal ingredients which are virucidal and immuno stimulant.

##### **IMMUNE-UP Herbal** capsules for treatment of HIV/AIDS.

(30 Capsule pack in plastic jar)

#### DOSES

- One capsule three times a day (for patients with very weak health-i.e. last stage of AIDS )
- One capsule two times a day ( for all other patients)

#### CONCLUSION

Acquired immunodeficiency Syndrome, is transmitted through human immunodeficiency virus (HIV).which is mainly spread by blood or blood products mostly. Acquired immunodeficiency syndrome spreads rapidly in human beings. Current therapies which are available for AIDS treatment are expensive. The patients who suffer from AIDS disease are seeking help from different alternative medical systems like- Ayurveda, Unani, Homeopathy etc. Since long, natural drugs have been used for the treatments of AIDS.

Medical drugs have a long history in use. Many natural drugs are used in the treatment of AIDS cycle for eg- Bittermelon, Echinacea and Cat's Claw, Turmeric, Nuts, Ashoka, sarpagandha, Cotton Seed, Arjuna. Etc. So, natural medicines can be expanded as a safe, effective and

inexpensive alternative for AIDS. When it comes to our health, 'Prevention is always better than cure'. Natural remedy need not necessarily be a cure but can be an alternative or more preferably a preventive in cases of AIDS.

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