



REVIEW ARTICLE

ROLE OF AYURVEDA IN THE MANAGEMENT OF OJUS KSHAYA W.S.R. TO AIDS

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ABSTRACT

According to *Ayurveda*, the superior vital essence of all bodily tissues is called *Ojas*. It is responsible for defence against diseases in human body. There are various conditions like *Prameha*, *Pandu*, *Madhumeha*, *Shosha*, *Rajayakshma*, *Ojonirodhaka* in which *Ojus* loss is a characteristic features. According to concept of *Ojus* or *Bala* or *Vyadhikshamatva*, the body resistance powers have importance in daily welfare, not only for prevention of disease but also for recovery after disease affliction. Today's AIDS is one of such disease in which Human Immunodeficiency Virus (HIV) is causative factor leading to fight against disease. It is one of the serious global health disease. Currently there is no vaccine or cure AIDS except Anti Retroviral Therapy but it is expensive and inaccessible in many countries. Here the review article attempts to understand the concept of *Ojus* and HIV in scientific way and it's over all effect on human body and it's management according to *Ayurveda* like *Dincharya*, *Ritucharya*, *Swasthavritta*, *Rasayana* and *Vajikarana* etc.

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INTRODUCTION

Oja is said to be a fine essence of all seven *Dhatus* which is also called *Bala*¹. It is firstly form in body in life origin time having *Ghrit* like colour and honey like taste and smell like *Lajja*². Its production pattern is like the honey production by honey bee³. It present in essence forms of *shukra* and *shonit* when it combines with soul in *Garbha* (Fetus) formation. After some time in *kalalawastha* (morula stage) it present in form of *Garbha saar*. After the development of heart it is entered in it and circulates in whole body through *Ojovaha Dhamanies* which is connect to heart and do their functions⁴. But in 8th month of foetal life it is unstable. So we can say at 8th month *Sthira guna* of *Oja* is not established⁵. There are ten *Pranayatan* is said by *Acharya* in which *Oja* is one of them. These *Pranayatanam* is called life spots. Due to destruction of life spots death will occur⁶. Because it is the extract of all *Dhatus* and best life spots of human beings. So we should maintain the *Oja*, because it prevent *Dosha-Dushya Sannurchhana* (unions of abnormal *Doshas* and *Dhatus*) and offer resistance to any cause to brings abnormalities in *Dhatus*.

Aims and Objective

1. To study the concept of *Oja* in *Ayurvedic* literatures.
2. To study the concept of HIV in modern science.

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3. Co-relate the concept of *Oja* with Hiv and its management.

MATERIALS AND METHODS

Material is collected from the classical *Ayurvedic* literatures, modern medical books, magazines, research journals and internet.

Different view about Oja

There are some controversies about *Oja* in *Acharyas*. According to someone it is the *Mala* of *Shukra Dhatu*⁷. And other one is says that it is *Updhatu* of *Shukra Dhatu*⁸, because *Dhatu* having the function of both *Dharan* (supporting) and *Poshan* (nourishment). But *Ojus* only supports the body. There is no evidences is found of its *Poshan karma*

Synonyms of Oja

Acharya charak called the *Ojus* also *Kapha*, *Bala*, *Oja*⁹.

Sites of Oja

As *Acharya* said two types of *Ojus*. First *Para* and second one is *Apara Ojus*. The site of *Para Ojus* is heart and of *Apara Ojus* is whole body (*sarvasharir vyapi*)¹⁰. But *Acharya Bhel* described 12 places of *Ojus* which are as follow *Rasa* (plasma), *Rakta* (blood), *Mamsa* (muscles),

Meda (fats), *Asthi* (bones), *Majja* (bone marrow), *Shukra* (semen), *Sweda* (sweat), *Pitta* (Gut secretions), *Shleshma* (mucoid secretions), *Mutra* (urine), *Purisha* (stool)¹¹.

Types of Oja

There are two types of *Oja* found in body

1. **Para oja**-It is situated in heart with having appearance of little reddish and yellow coloured. So we can say it is of *Paittik swaroop* (appearance). It is pure in nature with white colour and having not any waste ingredient. It's quantity is only 8 drops. It is responsible for our life. Due to its destruction death occur.
2. **Apara oja**-It is situated in over all body having *kaphaj* appearance. It circulate in whole body through *Mahaphala Dhamanies* (vessels which attach to heart and ten in numbers). It's properties is similar to *Shleshma (Kapha)*. It is having the quantity of *Ardhanjali* (one anjali represent the volume equal to two hands joined in the form of a cup). Different kinds of disease having *Ojo-kshaya* is occur due to it's loss. Due to loss of it, body strength become decreased^{10,12}.

Types of Bala

As *Acharyas* said *Oja* is also called *Bala*. So there are three types of *Bala* also explained

1. **Sahaja bala**-Strength of body and mind which present in body since birth is called *Sahaja bala*. It can also called inherent strength. For it mother and father is mainly responsible factors.
2. **Kalaja bala**-Strength which is depend on season and age called *kalaja bala*. for example strength is good or high in *Visarga kala* and weak or low in *Aadana kaala*. Likely this strength is good in young age but less in old age.
3. **Yuktikrita bala**-It is a one kind of acquired strength, which depends on healthy practise belonged to our diet, physical and mental activities¹³.

Quality of Oja

There is ten Quality of *Ojus* which is just opposite to *Vish*. But it is similar to quality of *Ghee* and milk. These are as follow¹⁴

- *Guru* (Heavy)
- *Sheeta* (Cold)
- *Mridu* (Softness)
- *Shlakshana* (Smooth)
- *Bahalam* (Much quantity)
- *Madhuram* (sweet nature)
- *Sthiram* (stable)
- *Prasannam* (pleasant)
- *Picchilam* (Sticky)
- *Snigdham* (oily nature)

Characteristic features of Oja

These are followings¹⁵-

- *Somatmakam* (moon like quality)
- *Snigdham* (oily nature)

- *Shuklam* (whitish)
- *Sthiram* (stable)
- *Saram* (spreading nature)
- *Viviktam* (having best quality)
- *Mridu* (soft nature)
- *Maritsnam* (sticky)
- *pranayatanam uttamam* (best in life spots)

Functions of Oja

Oja perform the supporting role for our body. It maintain body constitution and make our body healthy. It is also called *Vyadhi kshamatva Bala* which resist the force of different disease. Its Some of the functions are¹⁶-

- *Balen* (strengthen the body)
- *Sthira-upachitamamsata* (stability and growth of muscle tissues)
- *Sarva cheshta pratighata* (ability to do every work without any difficulty)
- *Swara varna prasado* (clarity in speech and brighting of complexion)
- *Bahyanaam-abhyantaranaam karananaam atma karma pratipati* (external and internal sense organs are able to perform to perform their self functions)

As we say *kapha* is synonyms of *oja*. So it having functions of *kapha* also. Main functions of *kapha* in it's natural condition is¹⁷-

- *Snehana* (oleation)
- *Bandhan* (maintain and connect the body joints)
- *Sthiratavam* (stability of body part)
- *Gauravam* (compactness)
- *Vrishyata* (Power of sex)
- *Balam* (maintain strength)
- *Kshamata* (tolerance power)
- *Dhariti* (intellectual power)
- *Alobha* (contentment)

Factors responsible for loss of Oja

These are following¹⁸⁻¹⁹

- *Ativyayama or Shramat* (excessive hard work)
- *Anashana* (fasting)
- *Chinta or dhayana* (excessive worry/tension)
- *Abhighata* (Hurting)
- *Kshuda* (hunger)
- *Shoka* (sorrow)
- *Rukshalpa bhojan* (taking of rough nature food and in little quantity)
- *Pramita bhojana* (consuming of less food)
- *Vata-atapa seven* (excessive exposure to harmful wind and sun light)
- *Bhaya* (fear)
- *Ruksha paana* (intake of liquids which make the body rough)
- *Prajaagar* (awaken in whole night)
- *Kapha-shonit-shukra-mala atipravriti* (excessive out flow of *kapha*, blood, semen and stool)
- *Kaala* (time period like old age, summer seasons)
- *Bhoot upghata* (attack of micro-organism)

- *Kshayat* (loss of *Dhatus*)
- *Krodh* (anger)

Oja kshaya features

Acharya Charak given following features²⁰-

- *Bibheti* (fear complex)
- *Durbalo abhikshanam* (disability)
- *Dhayayti* (worried/tension)
- *Vyathitendriyam* (discomfort of sense organ)
- *Duschhaya* (loss of natural colour)
- *Durmanaa* (bad or weak mental strength)
- *Ruksha* (roughness)
- *Shaama* (blackness of skin)
- *Kshaya* (weakness of body)

Abnormality (Dosh) of Oja

There are 3 stages of vitiated or deranged *Oja* is characterised by²¹-

1. **Ojo visransa**-Dislodgement from its proper seat or locality having symptoms of

- *Sandhi vishlesho* (dislocation of joints)
- *Gaatra sadanam* (pain in joints part)
- *Dosh chyavanam* (moving away of all three doshas from their normal seat)
- *Kriya sannirodha* (disability of physical, mental and speech functions)
- *Shrama* (tiredness)

2. **Ojo vyapata**-A change or modification of its native virtues in contact with the deranged humors or disordered organs. It having following symptoms

- *Stabdha guru gaatrata* (stiffness and heaviness of body parts)
- *Vata-shofa* (swelling due to vata impairment)
- *Varna bhedo* (change in body complexion)
- *Glani* (exhaustion)
- *Tandraa* (stupor)
- *Nidraa* (sleepness)

3. **Ojo kshaya**-It is called diminution or loss of *oja* having symptoms of

- *Murchaa* (fainting)
- *Mamsa kshaya* (loss of muscle tissues)
- *Moha* (mental confusion)
- *Pralaapo* (delirium)
- *Agyaantaa* (illiteracy)
- *Marana* (death)

HIV

HIV is a lentivirus that causes HIV infection and further develops AIDS in absence of appropriate treatment^{22,23}. It is a spectrum of conditions. Initially people not notice any kind of symptoms or experience period of influenza like illness. There is also increase risk of tuberculosis, tumours and other opportunistic infections. Late symptoms of infection are

referred to as AIDS, which is associated with weight loss^{24,25}. HIV infected vital cells such as helper T cells. It leads to low level of CD4+T cells including pyroptosis, apoptis and killing of infected CD4+T cells by CD8 cytotoxic lymphocytes. Cell mediated immunity is lost when CD4+T cell numbers decreased^{26,27,28}. HIV is transmitted by unprotected sex, contaminated blood transfusion, hypodermic needles and from mother to child during pregnancy, delivery or breastfeeding. Its method of prevention includes safe sex, needle exchange program, male circumcision and treating infected persons^{24,29}. Treatment should make as soon as diagnosis made. The average survival time is 11 years after infection.

History

AIDS is firstly observed in 1981 in the united states³⁰. On the base of causes, signs and symptoms at one point term" the 4H disease" is coined. Because it seemed to affect heroin users, homosexuals, hemophiliacs and Haitians^{31,32}. But in general press the term 'GRID'- gay related immune deficiency is given³³. But it was realized that the term GRID is misleading and than term AIDS was firstly introduced in 1983³⁴. In 1983 two separate research group led by Robert gallo and Luc montagnier declared people with AIDS are infected by a novel retrovirus^{35,36}. Virus which is isolated by Gallo was similar in shape to Human t-lymphotropic viruses (HTLVs). Gallo named this new virus HTLV-III. At same time Montagnier group isolated a virus whose core protein were immunologically different from those of HTLV-I, is named Lymphadenopathy-associated virus (LAV)³⁷. As these two viruses are same, in 1986 LAV and HTLV- III were renamed HIV³⁸.

Epidemiology

HIV/AIDS is a globally pandemic disease³⁹. Approximately 37 million people have HIV worldwide with the number of new infections that year being about 2 million as of 2014⁴⁰. This is down from 3.1 million new infections in 2001. Of these 37 million more than half are women and 2.6 million are less than 15 years old. It resulted in about 1.2 million deaths in 2014, down from a peak of 2.2 million in 2005^{40,41}. South Africa has the largest population of people with HIV of any country in the world at 5.9 million⁴². Life expectancy has fallen in the worst-affected countries due to HIV/AIDS; for example, in 2006 it was estimated that it had dropped from 65 to 35 years in Botswana⁴³. Approximately 2.4 million of these cases are in India⁴².

Types of HIV

There are two types of HIV⁴³.

HIV-1: It is originated in common chimpanzee and highly virulent. Its prevalence is globally with high infectivity.

HIV-2: It is originate in soot mangabev. It is low virulent and found in mainly South Africa. Its infectivity is low.

Mode of transmission

There are mainly three route of transmission⁴⁴:

1. Sexual contact
2. Exposure to infected body fluids or tissues

3. Mother to child

(There are no risk of acquiring infection from faeces, nasal secretion, saliva, sputum, sweat, tears, urine or vomitus unless these are contaminated with blood⁴⁵)

1. Sexual contact

It is most frequent mode of transmission of HIV infection from infected person. Majority of infection is mainly occurring in heterosexual persons⁴⁶. Through unprotected heterosexual contact the rate of infection transmission is increase 4 to 10 time more⁴⁷. The risk of transmission is especially high from anal intercourse^{47,48}, while through oral sex it is low⁴⁹. The risk from oral sex is nearly nil⁵⁰. But the risk of transmission is increase in presence of sexual transmitted infections like syphilis, genital herpes, Chlamydia, gonorrhoea, bacterial vaginosis and genital ulcers⁵¹. Rough sex and sexual assault is also increase the risk of HIV infections^{52,53}.

2. Body fluids

It is second most frequent mode of transmission of HIV via blood and blood products⁴⁶. The transmission can be through needle sharing during intravenous drug use, transfusion of contaminated blood and blood products, injections with unsterilized equipments. HIV is mainly transmitted during blood transfusion using infected blood is about in 93% of population⁵⁴. It is also possibility to acquire HIV from organ and tissue transplantation, but it is rare due to screening⁵⁷. Tattoos, piercing and scarification are having risk of infection only theoretically⁵⁵. There are not possibility of HIV transmission from mosquitoes and other insects⁵⁶.

3. Mother to child

It is 3rd most common way of HIV transmission. It can also be transmitted from mother to child during pregnancy, delivery or through breast feeding^{58,59}. This mode of transmission is also known as vertical transmission. During pre-chewing age if infected blood contaminates the food, there may be risk of transmission⁵⁵.

Signs and symptoms

There are three stages of HIV infection⁶⁰:

1. Acute infection
2. Clinical latency
3. AIDS

1. Acute infection

It is of initial period of HIV. It is also called acute retroviral HIV or primary HIV^{61,62}. In this stage features of influenza like illness or mononucleosis like illness are developed. Symptoms commonly includes are fever, throat inflammation, large and tender lymph nodes, headache, sore mouth and genitals and rashes which is of maculopapular nature and mainly present on trunk region⁶²⁻⁶⁴. GIT symptoms such as nausea, vomiting or diarrhoea and neurological symptoms peripheral neuropathy or guillain barre syndrom are present. Duration of symptoms is usually 1 to 2 week. But due to non specific character these symptoms are not often recognised as HIV infection signs⁶⁴.

2. Clinical latency

It is the next stage of acute infection called asymptomatic or chronic HIV⁶⁰. In this stage there are few or no symptoms at first. But at the end of it many of people feeling fever, weight loss, Gut problems and muscles pain. People also developed persistent generalised lymphadenopathy of unexplained characteristic. There are found enlargement of lymph nodes for over 3 to 6 months which is non painful in nature^{60,61}.

3. AIDS (Acquired immunodeficiency syndrome)

Either CD4⁺ T cell count below 200 cells per μ L or the occurrence of specific diseases in association with an HIV infection is term as Acquired immunodeficiency syndrome (AIDS). In about half of population which is infected with HIV, AIDS is developed due to absence of specific treatment. Intial conditions present in people having AIDS are pneumocystis pneumonia, cachexia in the form of HIV wasting syndrome and esophageal candidiasis and common signs of respiratory tract infections⁶⁴. People with AIDS are also having risk of developing viral-induced cancers, including Kaposi's sarcoma, Burkitt's lymphoma, primary central nervous system lymphoma, cervical cancer and conjunctival cancer which is more common with HIV^{65,66}. People with AIDS also having symptoms of prolonged fever, sweat particular at night, chills, weakness, swollen lymph nodes, weight loss and diarrhea which is present in about 90% of people. Diverse psychiatric and neurological symptoms of opportunistic infections are also found there⁶⁷⁻⁶⁹.

Pahtophysiology

There after entering the virus in body rapid viral replication is occurs which result marked virus increase in peripheral blood⁷⁰. These results marked drop in circulating CD4⁺T-cells. This acute viremia is associated with activation of CD8⁺T cells, which kills HIV-infected cells and antibody production or seroconversion. The CD8⁺T cells response to control virus levels is thought. A good CD8⁺T cells response show slower progression of disease, but there is no elimination of virus⁷¹. By depleting CD4⁺ T cells HIV causes AIDS. T cells are necessary to immune response because without it body cannot fight against infection⁷². In acute phase HIV induced cell lysis and killing of infected cells by cytotoxic T cells account for CD4⁺ T cell depletion. And during chronic phase generalised immune activation coupled with gradual immune system ability to produce new T cells for decline in CD4⁺ T cells numbers⁷³.

Diagnosis

HIV-1 is initially testing by an enzyme linked immunosorbent assay (ELISA). Specimens considered HIV negative if nonreactive. Specimens with reactive ELISA result retested in duplicate⁷⁴. If test is reactive, undergoes confirmatory testing with more specific supplemental test e.g. western blot or immunofluorescence assay (IFA). If these tests are reactive, considered HIV positive and indicate HIV infection⁷⁵.

Classifications

The United States Center for Disease Control and Prevention classifies HIV infections based on CD4 count and clinical symptoms, and describes the infection in five groups⁷⁶.

- Stage 0: the time between a negative or indeterminate HIV test followed less than 180 days by a positive test
- Stage 1: CD4 count \geq 500 cells/ μ l and no AIDS defining conditions
- Stage 2: CD4 count 200 to 500 cells/ μ l and no AIDS defining conditions
- Stage 3: CD4 count \leq 200 cells/ μ l or AIDS defining conditions
- Unknown: if insufficient information is available to make any of the above classifications⁷⁶

The WHO system uses the following categories of classification⁶²:

- Primary HIV infection: May be either asymptomatic or associated with acute retroviral syndrome.
- Stage I: HIV infection is asymptomatic with a CD4⁺ T cell count (also known as CD4 count) greater than 500 per microlitre (μ l or cubic mm) of blood. May include generalized lymph node enlargement.
- Stage II: Mild symptoms which may include minor mucocutaneous manifestations and recurrent upper respiratory tract infections. A CD4 count of less than 500/ μ l.
- Stage III: Advanced symptoms which may include unexplained chronic diarrhea for longer than a month, severe bacterial infections including tuberculosis of the lung, and a CD4 count of less than 350/ μ l.
- Stage IV or AIDS: severe symptoms which include toxoplasmosis of the brain, candidiasis of the esophagus, trachea, bronchi or lungs and Kaposi's sarcoma. A CD4 count of less than 200/ μ l⁶².

Prevention

1. Sexual contact

Use of condom reduces the risk of HIV transmission and female condom also may provide an equivalent level of protection^{77,78}. But use of spermicide nonoxonyl-9 may increase the risk of transmission due to its tendency to cause vaginal and rectal irritation⁷⁹. Circumcision and voluntary counselling and HIV testing also reduce the risk of transmission⁸⁰.

2. Pre-exposure

Antiretroviral treatment is very effective to prevent infection in people having CD4 count \leq 550 cells/ μ L⁸¹. Pre-exposure prophylaxis with daily dose of Tenofovir is effective⁸². Universal precautions and harm reduction strategies such as needle exchange programmes and opioid substitution therapy is also effective in reducing risk⁸³⁻⁸⁵.

3. Post-exposure

A course of antiretrovirals administered within 48 to 72 hours after exposure to HIV-positive blood or genital secretions is referred to as post-exposure prophylaxis (PEP)⁸⁶. The use of the Zidovudine reduces the risk of HIV infection. And tenofovir, emtricitabine and raltegravir may reduce the risk also^{86, 87}.

This treatment is recommended after a sexual assault when person known to be HIV positive⁸⁸.

4. Mother to child

Programs to prevent the vertical transmission of HIV and use of antiviral medications during pregnancy and after birth bottle feeding can reduce rates of transmission^{84,89}.

Management

Ayurvedic management mainly comprises of the following:

1. Removal of causes (*Nidan parivarjan*)⁹⁰
2. Give food and drugs which are having quality similar to the quality of *ojus*⁹¹.
3. Milk and *Ghritha* should be taken regularly⁹².
4. Meat especially Cock's meat is strength promoter⁹².
5. Food having all tastes⁹².
6. *Satymya Aahara* like *Mudga dal*, *Shashtika shaali*, *Saindava*, *Aamalak*, *Dugdha*, *Maansa (meat)*, *Madhu (Honey)*⁹³
7. *Jeevaneeya gana*, *Balya gana* drugs⁹⁴
8. Sweet (*madhura*), oily (*snigdha*), cold (*sheet*) nature food and drugs⁹⁵
9. Sweet taste and sour taste enhances strength⁹⁶.
10. Regular proper sleep, exercise, *Yogic Aasans* for both physical and mental strength^{97,98}.
11. Do not retain the non suppressible urges and retain the suppressible urges⁹⁹.
12. Knowledge (*Gyan*), science (*Vigyana*), patience (*Dhairya*), intellectual power (*Dhriti*), concentration (*Samaadhi*) for mental strength¹⁰⁰.
13. Follow *Achara Rasayana* for promoting mental and spiritual strength¹⁰¹.
14. For outcome of healthy fetus should follow *Garbhini masanumasik paricharya*¹⁰².
15. To promote infant health *Lehana karma* and *Medhya rasayana* should follow like *Suvarna prashana*¹²⁴.
16. Following *Swasthavritta* and *Ritucharya* and *Sadvrit*¹⁰³⁻¹⁰⁵.
17. Hot, spicy, fried food alcohol should be avoided.
18. *Rasayana* -Give *Rasayana* therapy because it rejuvenates the physiology of body. *Sheetal jala*, *Dugdha*, *Madhu*, *Ghrith* should be daily use¹⁰⁶. Other drugs like-*Mandookaparnyaadi yog*, *Triphala rasayana*, *Ritu haritaki*¹⁰⁷, *punarnava yog*, *Bhringraj rasa*¹⁰⁸, *Sitaadi yog*, *amalakyaadi yog*¹⁰⁹, *Brahmayaadi yog*, *Guduchayaadi yog*¹¹⁰, *Pathya rasayana*¹¹¹, *Pippali rasayana*¹¹², *Vridhdhaaruka rasayana*¹¹³, *Shilajatu rasayana*¹¹⁴, *Shtavari rasayana*¹²⁶, *Chyavanaprash*¹²⁷, *Jivantyadi ghrith*¹³⁰.
19. Give *Vajikaran* drugs like-*Paayasm*, *Rasaalaa yog*¹¹⁵, *Vidaarikand churan*, *Shtaavaryaadi yog*¹¹⁶, *Sitapalaandu ras*, *Gokshura churan*¹¹⁷, *Kesar paak*¹¹⁸, *Aamara yog*¹¹⁹, *Laghuvaajighanda ghrith*, *Shtaavri ghrith*¹²⁰, *Soubhaagyaadi yog*, *Kapikachhu paak*, *Chhinnaadi kwath*¹²¹, *Godoomaadhya ghrith*¹²², *Gudkushmaanda*¹²³
20. *Kalyanaka ghrith*, *Panchagavya ghrith*, *Brahmi ghrith*¹²⁵
21. *Mahakalyanaka ghrith*, *Mahapaishachika ghrith*¹²⁸
22. *Shvadranshtadi ghrith*, *Naagbala kalpa*, *Sarpigud*¹²⁹
23. Singal drugs used as *Rasayana* as like *Guduchi*, *Rudanti*, *Guggulu*, *Haritki*¹³¹

24. *Mandookaparni swaras, Yashtimaduka churan with dugdh, Guduchi swaras, Shankhpushpi kalka* these four *medhya rasayana* is told by Charak is also best for body,¹³⁵

Conclusion

As we conclude from the above discussion that AIDS have maximum resemblance with *Ojus kshaya*. We have a strong possibilities to treat with medicines or *Ayurvedic* formulations useful in treating *ojus kshaya*. *Ayurveda* have a big treasure of *Rasayana* and *Vaajikarana* medicine that can cure the *Ojus kshaya* or AIDS.

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