



### ROLE OF JALAUKAVACHARANA IN NETRA ROGA

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#### ABSTRACT

*Raktamokshana* (bloodletting) is a parasurgical procedure directed for the treatment of *Raktajaroga* (blood-borne diseases) along with many surgical diseases. Method of removing vitiated blood from body using *Jalauka* is considered as the most easier and convenient method. It is considered as most unique and most effective method of bloodletting. It is safely indicated in all mankind including the patients having poor threshold to pain. Application of leech mitigates diseases in eyes. *Jalukavacharana* has the property to subside immediately the pain, swelling, burning sensation and redness. Now days environment is being highly polluted, due to which there is increased chances of infections in the eyes. Prevalance of eye diseases is very high but medical science have limited number of drugs. Mast cell stabilizers, NSAIDs and topical corticosteroids are the treatment options, but only symptomatic relief is the outcome. There is no curative treatment but only palliative treatment. On the other hand, drug sensitivity, increasing resistance, preservative-induced dry eye as well as the complications of the corticosteroids, for example, cataract, glaucoma, and increased risk of bacterial and fungal infections restrict the long-term use of these medicines. In view of magnitude of problem, the discomfort it causes to the patient and the cost of treatment, there is a need of develop of a treatment which is free of side effects, cheaper and has a significant effect in relieving the symptoms of the patients

**KEYWORDS:** *Chikitsa Chatuspada, Bhashag, Upastha, Rogi, Dravya, Quality Healthcare.*

#### INTRODUCTION

The origin of Ayurvedic medicine is recorded in *Atharva Veda*, one of the four Vedic scriptures. In present day the main three treatises viz. Charaka Samhita, Sushruta Samhita and Ashtanga Hrudaya are the source of Ayurvedic medicines. Among them Sushruta Samhita explains detail about Shalaky Tantra, one of the eight branches of Ayurveda. Eye is the most precious organ. The eyes are one of the most sensitive and vulnerable organs in the body as it is exposed to airborne infections, pollutants, dust and other particles, which can directly land on the surface of eye. These may lead to various kinds of eye diseases. Since the *Dosha* predominance of *Netra* is *Pitta, Rakta* and *Pitta* had *Asryasrayee Banda*, it should be clear that there in predominance of *Rakta* in almost all types of eye diseases. *Raktamokshan* is a simple procedure and can be practiced in eye diseases as *Chikitsa*.

*Jalauka* is very much Beneficial in vitiated *Raktaja* (Blood related) disorders, it expels vitiated *Rakta Dosha* (vitiated Blood) completely from selected part of the body. Acharya Sushruta has described *Jalauka* (Leech) under the heading of *Anushastrs* (parasurgical procedure)

#### ETYMOLOGY

**Types of *Jaloukas*** – *Savisha* (06) and *Nirvisha* (06)

***Savisha jaloukas*** are Krishna, *Karbura, Alagardha, Indraudha, Samudrika* and *Gochandana*

<i>Krishna</i>	They are with colour of lump black and have thick head.
<i>Karbura</i>	Their bodies are elongated as the fish <i>Varmi</i> and abdomen bulges out.
<i>Alagardha</i>	They are hairy, thick and round at the sides and having black mouth
<i>Indraudha</i>	These leeches have lines at the sides of the body resembles rainbow.
<i>Samudrika</i>	They are yellowish black in colour and having floral patterns all over their body.
<i>Gochandana</i>	They have narrow mouth and their lower end resemble scrotal sac of the bull.

*“Jalamasamoka ithi jalaukasa:”* Since *Jala* is their basis of life, they are called *Jalayuka*. Or since they are accustomed to water, they are called *Jalaukasa*. Medicinal leeches have had a place in the doctor’s medical kit for centuries because they have proven themselves often to be the most effective treatment. The practice of leeching can be traced to ancient India and Greece, and continued well into the 18th and 19th centuries in both Europe and North America. Leech therapy is also mentioned in Ayurvedic texts. The first description of leech therapy was found in the text of Susrutha samhita. According to Sanskrit writings, *Dhanwanthari*, the father of Indian medicine, held nectar in one hand and a leech in the other. Comparing Among all the *Rakthamokshopayas*, the commonest one is *Jalukavacharana* due to its easy applicability, painlessness and lack of serious complications.. Also it is best suited to kings, wealthy persons, children’s, old aged, frightful, debilitated, women and persons of tender constitution. Application of leech mitigates diseases in eyes *Jalukavacharana* has the property to subside immediately the pain, swelling, burning sensation and redness of eyes. (Su.Ut.12/8).

If these toxic leeches are used for medicinal purpose they will cause Severe swelling, Itching, *Moorcha*, *Jwara*, Burning sensation, Vomiting, *Mada* and *Sadana*. To treat these complications, Susrutha mentioned a specific drug 'Mahagada' which can be used for *Pana*, *Lepana* and *Nasya karma*. Among *Savisha jaloukas*, *Indraudha* is said to be *Asadya* variety

**Nirvisha jalouka** -Leeches which are born in clean water, round in shape, having blue lines in their back, rough or hard back, thin body, slightly yellowish belly are *Nirvisha jaloukas* *Nirvisha jaloukas* or nontoxic group comprises of *Kapila*, *Pingala*, *Sankhumukhi*, *Mooshika*, *Pundareekamukhi* and *Savarika*.

<i>Kapila</i>	They are smooth and oily and have <i>Mudga Varna</i> on <i>Prishta bhaga</i> . They have lines on the sides with the colour of <i>Manasila</i> .
<i>Pingala</i>	They have round body, with reddish or <i>Pingala Varna</i> and have a speedy motion.
<i>Sankhumukhi</i>	They have color of <i>Yakruth</i> , have an elongated sharp mouth and have speedy motion.
<i>Mooshika</i>	They resemble mouse in shape, color and smell.
<i>Pundareekamukhi</i>	They are coloured like <i>Mudga</i> and their mouths are like <i>Padma</i>
<i>Savarika</i>	They are smooth, with colour of <i>Padma patra</i> and having the length of 18 <i>Angula</i> . They are used for bloodletting in animals especially in cattles.

### Collection And Preservation of *Jalouka*

*Jalouka* present in ponds should catch with moist leather or any other method. The best time to collect leeches is *Sharadh* and *Varsha ritu*.

**Preservation** -After collecting they should be kept in a wide and new pot containing water of ponds or tanks along with their slit. The water in the pot should be changed in every 3rd day. The pot should be changed in every 7 days.

**PROCEDURE:** The mode of application of *Jaloukavacharanam* consists of three parts.

1. *Poorva karma*
2. *Pradhana karma*
3. *Paschat karma*

**Poorva karma:** 1. Preparation of leeches -Before applying it to the patients, leeches should be purified by smearing solution of paste of *Sarshapa* and *Rajani*.

2. Preparation of the patient -The patient lie down. The area selected for applying the leeches made rough by rubbing with either mud or fine powder of cow dung or dried cotton without causing pain.

**Pradhana karma** -Site of *Jalaukavacharana* is palpebral conjunctiva. Site should be cleaned with water. The lid is everted and the active *Jalouka* is made to suck in the palpebral part of conjunctiva Apply the leech to the site of application. If the leech does not bite that area then rub with mud, ghee or make a wound with a sharp instrument. Horse shoe shape of neck indicates leech is sucking impure blood. Then cover it with a moist cloth. *Jalouka* first suck only the vitiated blood from a mixture of pure and impure blood. If pain and itching develops at the site of bite, it is to be understood that it is sucking pure blood. Then it should be removed. If it does not leave off easily because of odour of blood, then sprinkle powder of *Saindhava* over its mouth. In eyes pour *Triphala kashaya* after detaching the leech.

**Paschat karma-** After it falls off, its body should be sprinkled with *Haridra*, held at its tail end by thumb and fingers of the left hand and its body kneaded slowly in the downward direction with thumb and fingers of the right hand and made it vomit all the blood it has consumed.

**Complications-** When *Jalouka* do not vomit the blood fully, when they are applied frequently and when they are

inactive even after getting into water, should be considered as intoxicated and should be rejected.

### MODERN VIEW

Leech -it is an object of zoological paradoxes.

Taxonomy

Kingdom: Animalia

Phylum: Annelida

Class: Clitellata

Order: Arhynchobdellid

Family: Hirudinidae

Genus: Hirudo

Species: Hirudo medicinalis

**Bioactive Constituents of Leech Saliva** -Therapeutic effect of *Jalouka* (Leech) is the due presence of a different bioactive constituent in Leech saliva. Some major bioactive constituent of Leech Saliva are given below.

1. Hirudin: Inhibits blood coagulation by binding to thrombin.
2. Calin: Inhibits blood coagulation by blocking the binding of Von Willebrand factor to collagen. Inhibits collagen- mediated platelet aggregation
3. Destabilase: Monomerizing activity. Dissolves Fibrin. Thrombolytic effects
4. Hirustasin: Inhibits Kallikrein, Trypsin, Chymotrypsin, Neutrophil Cathepsin G.
5. Bdelins: Anti-Inflammatory. Inhibits Trypsin, Plasmin, Acrosin.
6. Hyaluronidase: Increases Interstitial Viscosity. Antibiotic.
7. Tryptase Inhibitor: Inhibits Proteolytic Enzymes of Host Mast Cells.
8. Eglins: Anti-Inflammatory. Inhibit the Activity of Alpha Chymotrypsin, Chymase, Subtilisin, Elastase, Cathepsin G.
9. Factor Xa Inhibitor: Inhibits the Activity of Coagulation factor Xa by forming Equimolar Complexes.
10. Complement Inhibitors: possibly replace natural complement inhibitors if they are deficient.
11. Carboxypeptidase A Inhibitors: Increases the inflow of blood at the bite site.
12. Histamine-like Substances: Vasodilator. Increases the inflow of blood at the bite site.

13. Acetylcholine: Vasodilator.

## CONCLUSION

Hematophagous animals including leeches have been known to possess biologically active compounds in their secretions, especially in their saliva. The blood-sucking annelids, leeches have been used for therapeutic purposes since the beginning of civilization. Ancient Egyptian, Indian, Greek and Arab physicians used leeches for a wide range of diseases. Hematophagous animals that feed on prey blood have been known to overcome blood clotting by secreting in their salivary gland secretion a multitude of biologically active compounds, especially the anticoagulants. Amongst the blood-sucking organisms, leech is a distinct example of an invertebrate, which possesses a highly-developed mechanism by which they prevents blood clotting. Through centuries, leeches have attracted the attention of therapists who employed leech therapy for a wide range of diseases

## Safety and Complication of Leeching

Infection is the most common complication of leeching and occurs in 2-36% of the patients. Several bacterial strains have been encountered in these infections involving *Aeromonas* spp., *Pseudomonas* spp. and *Vibrio* spp. agent is the Gram-positive rod, *Aeromonas hydrophila*, which can cause pneumonia, muscular necrosis, flap failure and even septicaemia. Because *A. hydrophila* are resistant to penicillins and the first generation of cephalosporins, the treatment regimen of such infections should contain aminoglycosides, fluoroquinolones. On the other hand, there is no reports on the leech therapy-transmitted diseases, even though, physicians who practice leeching are advised to use a leech once. Blood loss because of the prolonged hemorrhage and skin marks (scars) left by impaired healing of leech bites are also reported as post leeching complications

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