



## CONCEPTUAL ANALYSIS OF RAKTAMOKSHAN IN NETRAROGA

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## ABSTRACT

Eye is the most essential sense organ of our body so that our modern science as well as our great ancient science gives the greatest importance to eye related disorders in the curative and preventive manner. *Raktmokshana* is one of the parasurgical, detoxification methods of *Panchakarma*. It is the process of elimination of vitiated *Dosha* that accumulate in the body. *Raktmokshana* is practiced globally in India since ancient times to treat *Netrarogas*, the diseases of eyes were caused due to vitiation of *tridoshas*, It removes some of these toxins and vitiated *doshas* which are accumulated in the body. *Raktamokshana* would be the choice to treat them and break their pathophysiology. *Raktamokshana* helps to remove vitiated *doshas* which are responsible for disease. It's purification approach which removes toxins, purify blood and helps get relief from symptoms. *Raktmokshana* is an effective blood purification therapy which has property to subside the pain, swelling, redness and burning sensation immediately and in which small quantity of blood removed to neutralize accumulated *Pitta* and *Rakta dosha* mainly of many blood born diseases. It is very effective ancient method of *Panchakarma* neglected by physician. So it is the need to spread awareness about *Raktmokshana* and its efficacy in *netra roga*. Thus *Raktmokshana* is the alternative therapy promising more effective and safer outcomes for the society.

**KEYWORDS:** *Raktamokshana, Jalaukavcharana, Netraroga.*

## INTRODUCTION

In *Ayurveda*, bloodletting therapies are used in management of various diseases, especially which are caused due to vitiation of *Pitta* and *Rakta Dosha*. *Acharya sushruta* did the great work in *shalakyatantra*. They classified the 76 *Netraroga* as per their *Adhistan*, *Doshaprablyand* as per *chikitsaswarupa*. They mentioned 15 *Vedhyavyadhi* under classification of *chikista* in *Netragatvyadhi*. *Acharya sushruta* mentioned specifically *Siravedha* as part of *Raktmokshan* in the prime treatment of *Vedhyavyadhi*. *Vedhan* or *Vistravan* means Bloodletting therapy is having great importance in *Ayurveda*. *Netrarogas* are *Raktapradoshaja Vikaras*. The Vitiated *doshas* in the body moves to *Urdhvajatru* i.e, upper parts of body through the *Sira* and gets *Sthanasanshraya* in *Netra* which results in *Netraroga*. *Raktamokshana* is one of the best treatment types of *Shodhana Karma* which is indicated for removal of Vitiated *doshas* from *Rakta*. *Acharya Sushruta* has described *raktmokshan* under the heading of *Anushastra* (parasurgical procedure) and has the property to subside the pain, swelling, burning sensation and redness of eyes immediately.

As in *Charak Samhita* the *Basti Karma* is regarded as partial or even the complete treatment method, similarly in *Sushruta Samhita* the *Raktamokshana* is compared to *Basti* said by *Acharya Charak* as the partial or complete treatment of diseases.

## AIM

1. To review *Raktamokshana* therapy mentioned in *ayurvedic* text related to *Netraroga*.
2. To study the practical utility of *Raktamokshana* and its mode of action in *Netraroga*.

## MATERIAL AND METHODS

The data was studied and collected from all the literatures described in *Brihatrayi*, *Laghutrayi*, *Vaidyas* and through personal experiences regarding *Raktamokshan* therapy.

## Definition of Raktamokshana

*Raktamokshana* is made from two words- *Rakta* and *Mokshana*. *Rakta* means blood and *Mokshana* means to leave and both these words make *Raktamokshana* means to let out blood. *Raktamokshana* is a treatment modality mentioned by *Acharya Sushruta* in *Chikitsasthana* one among 60 modules of treatment i.e, *Shasthi Upakramas*.

### Types of Raktamokshana

There are two main types of *Raktamokshana*, which are:

1. **Raktamokshana by Anushastra:-** The type of *Raktamokshana* procedures in which there is no use of any sharp objects or *Shastra*.

There are three sub-types:

- **Jalaukavacharana (Application of Leeches):-** *Jalauka* or Leech is a type of parasitic, worm, which has ability to suck blood through its horns from human skin, due to their properties they are used for medicinal purposes. This is indicated in vitiated *Pitta Dosh*a related *Vikaras* effectively
  - **Shrunga (Use of Cow's Horn):-** Here as per ancient methods a cow's horn is used for purpose of blood letting. This is indicated for vitiated *Vata Dosh*a.
  - **Alabu (Vacuum extraction by using Alabu/Bottle Gourd):-** Ancient *Acharyas* used bottle gourds as a measure to let out *dushita Rakta* from body, this is indicated for vitiated *Kapha Dosh*a *pradhan Vikaras*.
2. **Raktamokshana by Shastra (Sharp Instruments):-** This procedure of *Raktamokshana* is performed by using *shastra* or sharp instruments.

There are two sub-types:

- **Pracchana - Raktamokshana** done by making multiple incisions on affected site.
- **Siravyadha** – As the name suggests *Sira* i.e vein, *Raktamokshana*
- Done through puncturing the vein.

**Indications for Raktamokshana in Netraroga-** *Abhishyanda, Adhimantha, Siraharsha, Sirotpata, Puyalasa, Vatparyaya, Vartmavbandh, Klishtavartma, Bahalavartma, Pothaki, Anyatovata, Sashofa Akshipaka, Ashofa Akshipaka, Pittaja and Kaphaja Timira, Savrana Shukla, Anjananamika, Pothaki, Complications of Arma, Pilla Roga* and many more.

**Contra indications:-** Very young, old, emaciated, exhausted, Suffering from high fever, convulsions or unconscious patients, General swelling of body, Wasting due to unhealthy diet, Anemia, Piles, Pregnant women etc.

**Shrunga and Alabu:-** *Shrunga* i.e, *Horn* and *Alabu* i.e, *Bottlegourd* are used as a parasurgical procedures for *Raktamokshana*. It should be applied on flat, round, fleshy part of the body in order to get fixed and the vacuum created would suck the blood out. Both are not widely used in *Netraroga* as there is no classical reference to use *Shrunga* and *Alabu* in *Netraroga*, then to *Shrunga* is used at *Apanga pradesh* for *Raktamokshana* in some *Vataja Netrarogas*.

**Jalaukavacharana:-** *Acharya Sushruta* has described *Jalauka* (Leech) under the heading of *Anushastra* (Parasurgical procedure). *Jalauka* is very much

beneficial in vitiated *Raktaja* (Blood related) disorders, it expels vitiated *Rakta Dosh*a (vitiating blood) completely from selected part of the body. *Jalaukavacharana* is best among *Raktamokshana* types because it is easy and convenient to the patient.

**Types of Jalauka** (Leeches) According to *Acharya Sushruta*, *Jalauka* can be broadly classified into two groups,

- 1) **Savisha (Poisonous)-** Such type of *Jalauka* is having the following Characters according to the Ayurvedic texts. i) Thick ii) Slow locomotion iii) Fatigues iv) Middle part elongated v) Delay in suckling vi) Not commandable type. vii) Sucks little quantity of blood.

**These are-** *Krishna* (black in colour), *Karbura* (Ventrul surface is convex), *Algarda* (hairy & black mouth), *Indrayudha* (different colour like rainbow), *Samudrika* (Blackish yellow), *Gochandana* (bifurcating lines).

- 2) **Nirvisha (Non-poisonous)-** Such types of *Jalaukas* are characterized by following points:- i) Strong and large bodies ii) Ready suckers iii) Greedy

These are- *Kapila* (colour like real gar), *Pingala* (Reddish), *Shankamukhi* (Blackish), *Mushika* (Common blind moles), *Pundarikamukhi* (greenish black), *Savarika* (like lotus leaves)

**Time of collection:-** *Acharya Dalhana* has told that the best time for collection leeches is *Sharad Ritu* (Autumn).

**Storage of leeches:-** According to *Sushruta Samhita* collected leeches should be stored in a now big wide pot containing clean water and mud from tanks or ponds. Powder of moss, dried meat should be given for feeding straw and aquatic plants should be provided for making their bed. After 3 days water should be changed & pot should be changed weekly.

**Mode of Action of Jalaukavacharan:-** *Jalaukavacharana* removes not only blood from the body but also injects biologically active substances which help to manage various disorders. Leech therapy facilitates drainage of aqueous humor through the trabecular meshwork. As the leech suck peripheral blood it creates negative pressure in the vein present locally and facilitates drainage. Number of setting may be required depending upon the improvement of patient. *Hirudin* also helps in reducing the blood thickness, thereby promoting optimum blood flow and preventing the risks associated with sluggish blood flow. Biologically active substance in leech saliva helps the cells to absorb necessary nutrition & eliminate toxins. The patients who suffer from pain and inflammation will feel relief from the anti-inflammatory and anaesthetic effects of the leech's saliva. The probable mode of action of *Jalauka* is purification of body by removing deeply seated toxins and pacifying vitiated *Dosh*a. A healthy cell gets sick; it is deprived of

needed oxygen and nutrition and is unable to remove toxins accumulated during metabolism. Biologically active substances in leech saliva help the cells to absorb necessary nutrition and eliminate toxins. This modality falls under purificatory therapies, which cleanse the body and helps in maintenance of health.

**Antimicrobial effect-** Two main molecules, destabilase and chloromycetin, have shown potent antimicrobial activity. Chloromycetin is a potent antibiotic found in leech secretions, Additionally, thromacin, thromyzin, and peptide B have been isolated as antimicrobial peptides.

**Inhibition of platelet functions** - Leech secretions contain many bioactive molecules of some enzymes to locally inhibit these actions. These enzyme collagenase also destroys collagen particles, which initiates all these adhesion and aggregation reactions, and provides additional supportive action to the inhibitory effects.

**Analgesic and Anti-Inflammatory Effects** - Some studies have indicated that some kininases and antistatin may inhibit the kinin-kallikrein mechanism, which is a major nociceptive route and thus play analgesic and anti-inflammatory effect.

**Increasing blood flow** - Leech while feeding and while used for therapeutic effects require increased blood flow. These are achieved mainly by histamine like molecules that cause vasodilatation and arise via local vascular permeability which are secreted by their own salivary glands.

**Anticoagulant effect** - Hirudin is a protein that irreversibly binds to thrombin, which causes consumption of active thrombin and results in anti-thrombin activity. Hirudin and gelin mainly work as thrombin inhibitors, breaks the chain reaction, and destabilase has a fibrinolytic effect.

**Other actions-** Many studies have indicated the anticancer effects of leech saliva extracts. Since coagulation is related to metastasis and tumour progression, blocking the cascade can have an antitumour effect. Hirudin has been studied in this regard, with promising results for metastasis, especially from mesothelioma. Leech saliva extracts have also been studied for possible effects on cerebral ischemia-reperfusion injury and many more.

**Prachhana:-** The Prachhana therapy mainly includes multiple incisions with sharp instruments to induce blood flow which removes vitiated *Rakta Doshas* and relieves the disease.

**Siravyadh(Venous Puncture):-** it is mentioned by *Acharya Sushruta* that it alone manages to cure all the symptoms by puncturing the veins at specific site based on different diseases.

**Netragat vyadhi-** Following eye diseases are treated with *Raktamokshana*-

**1. Puyalasa (Dacryocystitis):** It is a *Sannipatika Sandhigata Netraroga* which produces swelling at *Kaninika sandhi* (inner canthus). It can be correlated with acute dacryocystitis. *Raktamokshana* is the treatment of choice. The Siras of frontal region (*Lalata*) should be selected for *Jaluakavacharana*.

**2. Upanaha:** It is a *Sandhigatavyadhi*, can be compared with lacrimal cyst. *Yogaratnakara* and *Dalhana* advised *Pracchana* for this.

**3. Pothaki (Trachoma):** It is a chronic contagious disease of conjunctiva and cornea characterized by follicular. *Pracchana karma* is done at the upper tarsal conjunctiva.

**4. Sirotpata and Siraharsha:** *Acharya Yogaratnakara* advised *Siravedha* for diseased condition which are compared with allergic hyperemia of eye on panus (as in glaucoma) or advanced stage of episcleritis and iridocyclitis.

**5. Savrana Shukla:** Both *Siravedha* and *Jaluakavacharana* indicated. *Siravedha* initially expels *Dushtarakta* i.e, impure blood, but remaining small quantity of coagulated blood deposited in the inner side is cleared by *Jalaukavacharana*.

**6. Avranasukla (Corneal opacity):** *Acharya Vagbhat* advised repeated *Raktamokshana* when the *Shukla* (opacity) became thick and stable.

**7. Abhishyanda (conjunctivitis) and Adhimandha (Acute Glaucoma):** In *Vataja*, *Pittaja* and *Raktaja Abhishyanda* and *Adhimantha* leeches should be applied around the eye to induce bloodletting. It prevents further aggravation of *Doshas*. *Jaluaka* applied at frontal or outer canthus or near nose region.

**8. Anyatovata:** There will be acute pain in jugular vein region of neck, eye or temporal region due to vitiated *Vata* and constriction of the eye. *Pracchana karma* acts well in treating such disease.

**9. Vataparyaya:** The disease can be defined as a disease producing alternate attack of pain in eye, eyebrow or eyelashes with visual disturbances and structural changes in the shape and size of the eye.

**10. Akshipaka:** *Acharya Sushruta* advised *Raktamokshana* in both *Sashopha* and *Ashophapaka*. Nowadays leeches are used by *Shalakis* and hirudotherapists to treat inflammatory and traumatic conditions such as keratitis, chorioretinitis, uveitis, periorbital hematoma.

## DISCUSSION

*Raktamokshna Karma* is alternative therapy promising more effective and safer outcomes for the society. It is one of the very effective treatment modality for treating various *Netra roga* as well as in many systemic diseases. It helps to treat *Abhishyanda* (Conjunctivitis), *Adhimantha* (glaucoma), *Siraharsha* (inflammation), *Sirotpat* (hyperemia), *Puyalasa* (dacryocystitis), *Vatparyay* (ocular pain), *Anyatovat* (ocular pain), *ShushkAkshipak* (purulent Conjunctivitis), *Ashof Akshipak* (Conjunctivitis) etc. According to *Ayurveda*, diseases occurs due to vitiation of *Dosha*. These vitiated *Doshas* can get *Sthanasanshraya* in *Strotas* which causes blockages and lead to diseases. The basic treatment is to remove those vitiated *Doshas* from particular *Sthana* or *Strotas* and this can be done by *Shodhan Chikitsa*. *Raktamokshana* does the same to cure *Netrarogas*, so *Raktamokshana* may be through any method mentioned in *Ayurveda* could be a boon in treating different *Netrarogas* depending on the site or location of disease and the affecting *Dosha*.

It is an effective blood purification therapy in which carefully controlled small quantity of blood is removed due to this vitiated *pitta dosha* get neutralized and decreased the *raktadrusti*. So the *raktamokshan* with proper knowledge should be another ideal treatment option in practice manner which should be more studied and applied to clinical practice for the safer outcomes to the society.

## CONCLUSION

*Raktamokshana* done with proper knowledge is safe, effective and promising choice of treatment in *Netragat vyadhi*. It is easy to learn and apply the para surgical procedure like *Jalaukavacharana*, *siravyadh* etc in the management of different surgical conditions where surgery is not possible to treat the condition or there is great chance of recurrence of *netragat vyadhi*. By this we can also prevent the further aggravation of the diseased condition like Conjunctivitis, Glaucoma, Iritis. It also helps to reduce the frequency of recurrence in conditions like Trachoma, Herpes Zoster. Hence there is need of more clinical trials of *raktamokshan* in *Netraroga* to prove the efficacy of procedure. This process provides lot of options for the surgeon as it is easy to perform, less chance of recurrence, controlled bleeding, no need of suture, less post-operative haemorrhage and minimal pain. Therefore it is helpful as adjuvant therapy in various *netraroga*.

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