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Effects of Jaloukavacharana in Inflammatory Eye Disorders

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ABSTRACT

The frequently encountered inflammatory conditions of eye are conjunctivitis, stye and blepharitis which causes discomfort, foreign body sensation, discharge, photophobia, pain, blurred vision and loss of vision in severe cases. On simulating these conditions to the diseases explained in *Ayurveda* Conjunctivitis is correlated with *abhishyanda*, stye with *anjananamika* and blepharitis with *krimigranthi*. According to *Acharya Sushruta*, *abhishyanda* is prime cause for *sarvanetrarogas*.

In modern science antibiotics, analgesics, anti-inflammatory and steroids are line of treatment in all the inflammatory eye diseases, where long term administration is needed. Apart from these drugs having adverse effects, they are expensive and as soon as the influence of these drugs are withdrawn, the infective organisms resume their growth and multiply with the recurrence of signs and symptoms, thus forcing the rationale of treatment to keep the drugs continuously in contact with the infected tissue.

Netra, being *Pitta* & *Raktapradhanaindriya* and inflammation processes manifesting in these tissues can be mainly attributed to vitiation *Pitta* and *Rakta*. *Jalaukavacharana* has been explained in our science under *Raktamokshana*, where it has a vivid importance in treating *netraroga* by combating both *Pitta* and *Rakta*. This paper attempts to explain the importance of *jalouskavacharana* in treating inflammatory eye diseases.

Keywords: *Abhishyanda*, *Anjananamika*, *Krimigranthi*, *Jaloukavacharana*, Conjunctivitis, Stye, Blepharitis.

INTRODUCTION

Inflammatory ophthalmic disorders like conjunctivitis, stye, blepharitis are commonly seen in our clinical practices. Chronic cases are very challenging to treat. Inflammation is a defence reaction in order to eliminate or limit the spirit of injurious agent as well as to remove the consequent

necrossed cells & tissues. On simulating these conditions to the diseases explained in *Ayurveda* conjunctivitis is correlated with *abhishyanda*, stye with *anjananamika* and blepharitis with *krimigranthi*.

Abhishyanda, which is one among the 17 *sarvagata netraroga* mentioned in *Ayurvedic* science. It is characterised by excessive discharges

from all sides of eye due to *srotosyanda*. [1] *Abhishyanda* will become a causative factor of all eye disease [2] which is manifested as a result of inflammation if not treated properly. On the basis of clinical presentations it can be correlated with conjunctivitis which is an inflammatory condition of conjunctiva and presented with discharge, burning sensation, photophobia and foreign body sensation. [3]

Anjananamika which is one of the *vartmagata netraroga* predominated by *raktadosha* characterised by *pidaka* ~ swelling, *daha* ~ burning sensation, *toda* ~ pricking sensation and *tamravarna* (coppery colour) with *ruja* ~ pain. [4] On the basis of clinical presentations it can be correlated with Stye which is a suppurative inflammation of lash follicle and its associated glands of Meibomian or Moll characterised by acute pain, swelling of lid, mild watering and photophobia. [5]

Krimigranthi which is one of the *sandhigata netraroga* mentioned in *Ayurvedic* classics characterised by *kandu* ~ itching, *osha* ~ burning sensation, *pakshmapota* ~ boil on lid margin and *puyasrava* ~ discharge. [6] On the basis of clinical presentations it can be correlated with Blepharitis which is an inflammatory condition of the eyelid margin presented with itching, irritation, occasional watering, falling of eyelashes and deposit of whitish materials on lid margin. [7]

As per contemporary science these inflammatory conditions are treated with steroids, topical & systemic anti-inflammatory, analgesics, topical & systemic antibiotics. But in chronic case long term administration of medication is needed which have adverse effects, expensive and chance of recurrences.

Jaloukavacharan (Leech Application), which is mentioned in *Ayurvedic* classics, is the best & effective method of *Raktamokshsana* to subside the inflammation. Procedure is simple, easy availability of leech and can be applied to the children as well as in very old patients [8] who increased its application now a day and popularly practiced as Leech therapy/ Hirudo therapy.

Jalouka (Leech)

Very extensive information of *jaloukas* and *jaloukavacharana* is explained in depth by *Ayurvedic* scientists in treating different diseases conditions of eyes. *Acharya Sushruta* explains vividly regarding *jaloukavacharana*, where he has dealt in separate chapter in *sutrasthana*. The term *Jalouka* may be etymologically interpreted to mean creatures whose life or whose longevity is in, or depends upon water whereas the derivative meaning of term *Jalouka* is based upon the fact of their dwelling in water. [9] *Jalouka* having soothing properties should be used in sucking the vitiated blood. They are classified as *savisha* and *nirvisha jaloukas* based on *lakshanas*. *Nirvisha jaloukas* has to be taken for the treatment which acts by correcting the vitiated *rakta* and *pitta dosha*. [10]

The leech (*Hirudamedicinalis*) is segmented worm, belongs to Phylum- Annelida, Class- Clitellata & Subclass- Hirudinea. It has two suckers, anterior sucker connects host for feeding and posterior for attaching to the host. Leeches have 3 jaws in sucker which is perfectly designed for sucking & each jaw has approximately 100 teeth. Once the leech attaches themselves to the skin and start sucking the saliva enters the puncture site along with the enzymes & components responsible for all these beneficial effects.

Active Constituent [11, 12, 13]	Action
Hirudin	Inhibits blood coagulation by binding to thrombin.
Calin	Inhibits blood coagulation by blocking the binding of von Willebrand factor to collagen. Inhibits collagen mediated platelet aggregation.
Destabilase	Monomerizing activity, Dissolves fibrin and Thrombolytic effects.
Hirustasin	Inhibits kallikrein, trypsin, chymotrypsin, and neutrophilic cathepsin G
Bdellins	Anti-inflammatory. Inhibits trypsin, plasmin, acrosin.

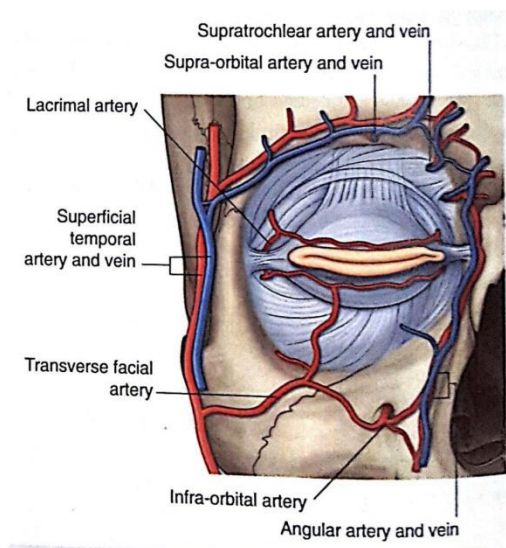
Hyaluronidase	Increases interstitial viscosity, Antibiotic
Leech-derived Tryptase	Inhibitor (LDTI) Inhibits proteolytic enzymes of host mast cells.
Eglins	Anti-inflammatory. Inhibit the activity of alpha-chymotrypsin, chymase, subtilisin, elastase, cathepsin G.
Factor Xa inhibitor	Inhibits the activity of coagulation factor Xa by forming equimolar complexes
Carboxypeptidase A inhibitors	Increases the inflow of blood at the bite site
Histaminelikesubstances,Acetylcholine	Vasodilator
Anesthetics substance	Anesthetic

Jaloukavacharana

It is a unique specialized therapy in *Ayurveda*, explained under *Raktamokshana* which helpful in correcting the vitiated *rakta* and *pitta dosha*. [10] There is an indication of this therapy in case of

emergency & even in persons those contraindicated for other *Raktamokshana* procedures. Among the indications *Netra* is also one. *Jaloukavacharana* provides beneficial effects in inflammatory condition of eyes.

Site of application of Jaloukavacharana



In *Netraroga*, *acharyas* have clearly explained *Jaloukas* are generally applied at *apangasandhi* (outer canthus), *upanasikasiras* (inner canthus), *lalatapradesha* (frontal region). [14] These areas are mainly supplied by branches of superficial temporal artery branch of the external carotid artery & superficial temporal vein branch of the external jugular vein. These superficial temporal artery and vein are anastomoses with supraorbital artery & supraorbital vein branch of

ophthalmic artery & vein. The ophthalmic artery & vein are supplied various parts of eyeball & orbit so on application of leech in these areas the biological active substances of saliva easily reached to different parts of eyes and performed their anti-inflammatory action.

Application of Leech

Nirvisha Jaloukas are collected from clean pond[15] has to be stored in a wide and new pot containing clear and pure water before usage.

Purva Karma (Preparation of Leech & Patient) [16]

The *jalouka* which is stored in clean vessel has to taken out and activated using turmeric water. The patient should be made to lie in *sukhasana* and the site where *Jalouka* has to apply should be rubbed using *gomaya churna*.

Pradhana Karma (Main procedure) [16]

The decided site after rubbing with *gomaya churna*, the *Jalouka* has to applied over it. When it makes its mouth in the shape of a horse's hoof and

lifts up its neck, then it should be understand as it has bite at the proper site. Then its body has to be covered with a small thin cotton dipped in water. If pain and itching develops at the site, then it should be understand that is sucking pure blood.

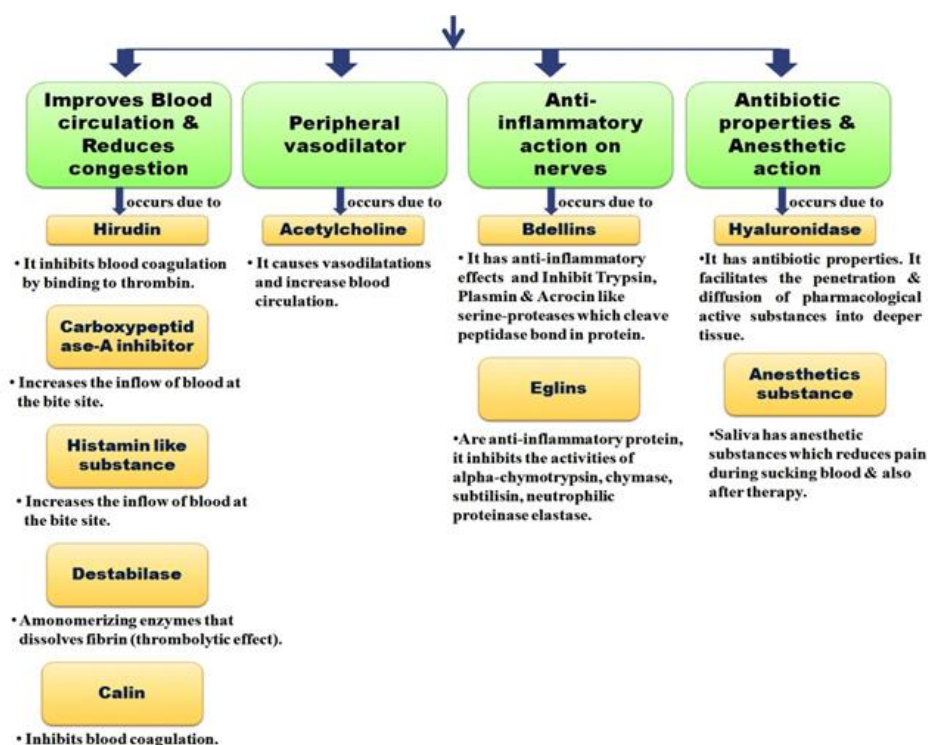
Paschat Karma (After procedure) [16]

By putting *saindhava* over its mouth, it has to remove and made to vomit completely by using *haridra*, otherwise a disease called *Indramada* will attack the *jaloukas*.

The part should be bandaged cautiously.

Mode of Action

Medicinal leech is small factory to manufacture many biological active substances which reduces the inflammation by following ways:



Contraindications of leech application

Hemorrhagic diseases, absolute haemophilia, pregnancies, severe anemia, allergy to leech, active tuberculosis, high temperature, Immuno compromised patients, severely ill & bed ridden. [17]

DISCUSSION

When Leeches are applied over the site they inject biologically active substances through saliva which has the properties like anti-inflammatory that helps in arresting the inflammation, vasodilators increases the blood flow at the affected area that reduced the congestion, anaesthetic substance reduced pain during sucking of blood and hyaluronidase facilitates the penetration & diffusion

of pharmacological active substances into deeper tissue.

Jaloukavacharana is having an important role in treating *raktaja vayadhis* by doing *raktashodana*. Among all the *raktamokshana* procedures, the commonest is being *Jaloukavacharana* due to its easy applicability, painlessness and devoid of complications. The number of sittings of *Jaloukavacharana* has to be decided depending on the chronicity. Our *Acharyas* were very clear about those facts regarding *Jaloukavacharana*, where they have advocated judiciously the usage of it in such a delicate and important organ, eye. The procedure *Jaloukavacharana* is very effective, simple and can be applied to the children as well as in very old patients who increased its application now a day and popularly practiced as Leech therapy/ Hirudo therapy.

CONCLUSION

Hirudo therapy is called a positive response of the body to the action of secretions of leeches' salivary glands.

Inflammations of the eyes are inclined to have blood & its components pooled in the affected areas, this pooling causes significant changes and increase in the pressure inside the eye & damaging the other part. In the leech therapy, the blood is removed & combats this process; this also has rejuvenating effects as it does the cleansing there by avoiding the recurrences of that disease.

The benefits of leech are based on the combination of multiple effects as the saliva contains several bio-active substances thus *Jaloukavacharana* offer a safe & effective ways of relieving congestion & there by relieving other signs & symptoms, particularly in delicate areas.

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