Effects of Jaloukavacharana in Inflammatory Eye Disorders

Dr. Santosh Kumar Shaw¹, Dr. Prakruthi G.², Dr. Sujathamma K.³

¹PG Scholar, Dept. of PG Studies in ShalakaTantra, SKAMCH & RC, Bangalore, Karnataka, India.
²PG Scholar, Dept. of PG Studies in ShalakaTantra, SKAMCH & RC, Bangalore, Karnataka, India.
³Professor & HOD, Dept. of PG Studies in ShalakaTantra, SKAMCH & RC, Bangalore, Karnataka, India.

*Corresponding Author: Dr. Santosh Kumar Shaw

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 sarvanetararogas. 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 Apart from these drugs having adverse effects, they are expensive and as soon as the influence of these drugs are withdrawn, the infective organisms resume their growth and multiply with the recurrence of signs and symptoms, thus forcing the rationale of treatment to keep the drugs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 & Raktapradhanaindiya 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 jaloukavacharana 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 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 zies 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 margine and puyasrava ~ discharge.[6] On the basis of clinical presentations it can be correlated 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, tropical & systemic anti-inflammatory, analgesics, tropical & systemic antibiotics. But in chronic case long term administration of meditation 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 Rakamokshana 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 ethymologically 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 connect host for feeding and posterior for attaching to the host. Leeches has 3 jaws in sucker which is perfectly designed for sucking & each jaw has approximately 100 teethes. 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.

<table>
<thead>
<tr>
<th>Active Constituent [11, 12, 13]</th>
<th>Action</th>
</tr>
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<tbody>
<tr>
<td>Hirudin</td>
<td>Inhibits blood coagulation by binding to thrombin.</td>
</tr>
<tr>
<td>Calin</td>
<td>Inhibits blood coagulation by blocking the binding of von Willebrand factor to collagen.</td>
</tr>
<tr>
<td></td>
<td>Inhibits collagen mediated platelet aggregation.</td>
</tr>
<tr>
<td>Destabilase</td>
<td>Monomerizing activity, Dissolves fibrin and Thrombolytic effects.</td>
</tr>
<tr>
<td>Hirutasin</td>
<td>Inhibits kallikrein, trypsin, chymotrypsin, and neutropholiccathepsin G</td>
</tr>
<tr>
<td>Bdellins</td>
<td>Anti-inflammatory. Inhibits trypsin, plasmin, acrosin.</td>
</tr>
</tbody>
</table>
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, substilisin, 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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