

A REVIEW ARTICLE ON ROLE OF *JALAUOKAVACHARANA* AS ADJUVANT
THERAPY IN OPEN ANGLE GLAUCOM¹*Vd. Bhagyashri P. Mhetre and ²Dr. H. N. Umale¹(PG Scholar, *Shalakyatantra- Netraroga*, Govt. Ayurved College, Nagpur).²(HOD & Professor, *Shalakyatantra*, Govt. Ayurved College, Nagpur).

*Corresponding Author: Vd. Bhagyashri P. Mhetre

(PG Scholar, *Shalakyatantra- Netraroga*, Govt. Ayurved College, Nagpur).

Article Received on 13/01/2017

Article Revised on 02/02/2017

Article Accepted on 23/02/2017

ABSTRACT

Raktamokshana is a type of *Panchakarma*. It is the process of elimination of vitiated *Dosha* that accumulate in the body. *Siravedha* and *Jalaukavacharana* are types of *Raktamokshana*. These procedures are described in the management of all systemic diseases including diseases of *Karna*, *Nasa*, *Mukha*, *Netra* and *Shira*. According to *Ayurveda*, the diseases of eyes were caused by vitiation of *Tridoshas*. *Jalaukavacharana* is bloodletting therapy, which removes vitiated *Doshas* (toxins) from body. *Jalaukavacharana* is an effective blood purification therapy, in which carefully controlled removal of small quantity of blood is conducted to neutralize accumulated vitiated *Pitta* and *Rakta Dosha* of many blood borne diseases. This is because of decreased quantum of enhanced *Pitta Dosha* and *Rakta Dosha*, thus diseases caused by *Pitta* and *Rakta Dosha* are also relieved. Open Angle Glaucoma is an eye disease that is characterized by wide and open angle with an unstable or a sustained increase in intraocular pressure which the eye cannot withstand damage to its structure and impairment of its function. In Open Angle Glaucoma, *Jalaukavacharana* will facilitate drainage of aqueous humor through the trabecular meshwork by creating negative pressure in the vein present locally.

KEYWORDS: *Raktamokshana*, *Jalaukavacharana*, *Pitta Dosha*, *Rakta Dosha*, Open Angle Glaucoma.**INTRODUCTION**

Raktamokshana is one of the *Panchakarma* Ayurvedic treatment of detoxification. It is made of two words- *Rakta* i.e. blood and *Mokshana* i.e. to leave and combining both these words make *Raktamokshana* means to let out blood. A detailed description on *Raktamokshana* is available in *Ayurvedic Text*. There are two main types of *Raktamokshana*.^[1]

1. *Shastra Vistravana*- by using metal instruments.

Two types

1. *Pracchana* - bloodletting through multiple incisions.
2. *Siravedha* - bloodletting through venepuncture.

2. *Anushastra Vistravana*- without use of metal instruments.

Three types

1. *Jalaukavacharana*- application of leeches- indicated for vitiated *Pitta Doshas*
2. *Shrungavacharana*- sucking through cow's horn- indicated for vitiated *Vata Doshas*.
3. *Alabu*- vacuum extraction by *Alabu*/ Bottle Guard- indicated for vitiated *Kapha Doshas*.

In *Ayurveda* surgery text, *Raktamokshana* is considered as the partial or complete treatment in itself.^[2]

Jalauokavacharana

The word leech is derived from laece which means physician. *Jalauka* is derived from *Sanskrit* word due to their site of dwelling and nutrition source is *Jala*.^[3] Leeches are segmented worms belong to the phylum Annelida. *Jalauokavacharana* is known as Leech Therapy and Hirudo-Therapy.

Acharya sushruta described *Yantra* in *Sutra Sthana* along with *Upanyantra* and *Anushastra*. *Agni*, *Kshara* and *Raktamokshana* by *Jalauka* are described under *Upanyantra* as well as *Anushashtra*.^[4]

AIM AND OBJECTIVES

To reveal the role of *Jalauokavacharana* in Open angle glaucoma.

To reveal the importance of *Jalauokavacharana* as parasurgical procedure in *Netraroga*.

MATERIAL AND METHODS**Types of leeches^[5]**

In Sushruta Samhita 12 types of leeches are mentioned. These are classified into two main categories – *Nirvisha Jalauka* and *Savisha Jalauka*.

Nirvisha Jalauka (Non-poisonous)- *Kapila*, *Pingala*, *Shankhamukhi*, *Mushika*, *Punderikamukhi* and *Savarika*.

Savisha Jalauka (Poisonous)- *Krushna, Karbura, Alagarda, Indrayudha, Samudrika* and *Gochandana*.

Collection of leeches

As described in *Sushruta Samhita*, leeches should be collected from ponds and lakes with the help of piece of wet leather.^[6] As described in *Charak Samhita, Sharad Rutu* (autumn season) is best for leech collection. In autumn, water is detoxified by exposure to hot climate in day time and cold climate in night time. The popular method of collecting leeches is by using large tin can with small pores at the top of can.

Selection of leeches

Leeches who are bulky (*Maha sharira*) stout (*Balavatya*), gluttonous (*Mahashana*) fast blood suckers (*Shighrapavinyo*) which moves quickly live in fresh water and of non-poisonous varieties are suitable for leech application.^[7]

Storage of leeches

As mentioned in *Sushruta Samhita*, leeches should be stored in a new big wide pot containing clean water and mud from tanks or ponds. Powder of moss, dried meat and aquatic tubers should be given for feeding. Straw and aquatic plants should be provided for making their bed. After three days water should be changed weekly.^[8] Nowadays the leeches are kept in glass bottles or jars with a lid which prevents leeches from coming out. Small holes should be made in the lid to let in fresh air. It is better to fill the jar with water from their natural habitat. Aquatics plants or grass is put into the jar. The water in the container is changed once a week. The leeches are not fed in order to make them hungry, and it is believed that this would enhance the sucking ability by leeches.

Purification of leeches for application^[9]

According to Ayurveda, medicinal leeches should be carefully identified and properly purified before using in *Jalaukavacharana*. According to *Sushruta Samhita*, a paste prepared with mustard, turmeric and water should be applied on the body of leech. They should be then kept in a vessel of water for about 48 minutes (*Muhurta*) till they get rid of their exhaustion.

According to *Ashtanga Hrudaya*, leeches should be purified by keeping them in medicated water. This may be prepared by mixing turmeric powder, uncooked rice water, buttermilk (*Takra*) for a short time. After purification, leeches should be kept in pure water.

Netra-roga Samprapti

Prakrupita Tridoshas vitiated by *Hetusevana* goes through *Urdhwagami Sira* of *Netra* and produces *Darun Netraroga*.^[10]

Netra is the site of *Alochaka pitta*.^[11] The properties of *Pitta* and *Rakta* are same as they have *Ashrayashrayi Bhaav*.^[12] In such condition, *Jalaukavacharana* is useful

in *Netraroga* produced by *Raktadushti* and *Pittadushti*. *Raktadhatu* is very important for its *Jeevniya Karma*.^[13]

INDICATIONS

Following eye diseases are treated with *Raktamokshana*.^[14]

1. *Abhishyanda* of all types (Conjunctivitis),
2. *Adhimantha* of all types (Glaucoma),
3. *Siraharsha* (inflammation),
4. *Sirotpat* (Hyperemia),
5. *Puyalasa* (Acute Dacryocystitis),
6. *Vataparyaya* (Ocular pain),
7. *Anyatovata* (Ocular Pain),
8. *Sashof Akshipaka* (Purulent conjunctivitis),
9. *Ashof Akshipaka* (conjunctivitis).
10. Complicated condition of *Arma* (Pterygium)
11. *Savrana Shukla* (corneal ulcer)
12. *Pittaja Timira* (painless loss of vision)
13. *Kaphaja Timira* (painless loss of vision)

Contraindications^[15]

1. Very young, old, emaciated, exhausted
2. Suffering from high fever, convulsions or unconscious patients
3. General swelling of body
4. Wasting due to unhealthy diet
5. Anemia
6. Piles
7. Pregnant women

Best time for *Jalaukavacharana*^[16]

- Cloudless day in rainy season (*Varsha Ritu*)
- Cool day in summer (*Grishma Ritu*)
- Noon in winter (*Sharad Ritu*)

Site of *Jalaukavacharana*^[17]

- *Lalat* (Frontal area)
- *Apanga Sandhi* (Outer canthus)
- *Upnasya* (Inner canthus)

Jalaukavacharana Procedure^[18]

Purvakarma

Purification of leech by pouring the leech in *Haridra* (turmeric Powder) and water
Part preparation- Site should be cleaned with the help of turmeric water.

Pradhana Karma

1. Application of honey or blood or butter or by *Prachchan* (making scar) at the site.
2. Application of leech through its front end i.e. mouth.
3. Cover the leech by wet cotton
4. Removal of leech by dusting *Haridra Churna* (turmeric powder) after completion of bloodletting.

Paschata Karma

Induction of emesis to leech by dusting of *Haridra Churna* on its mouth or sometimes pressing the leech from caudal to front end is required for proper emesis. Leech should be freed in fresh water, where it swims

swiftly and then settles down. Replace the leech in a clean jar or aquarium. Dusting of *Lodhra Churna* and bandaging over the bite site.

Glaucoma^[19]

An eye disease that is characterized by an unstable or a sustained increase in intraocular pressure which the eye cannot withstand damage to its structure and impairment of its function. Glaucoma is a group of eye diseases result in damage to optic nerve and vision loss. It has multifactorial etiology and characterized by progressive optic neuropathy resulting in a characteristic appearance of optic disc and specific pattern of irreversible visual field defect that are associated frequently but not with invariably with raised intraocular pressure.

There are several types of glaucoma. The two main types are open angle and angle closure. These are marked by an increase of intraocular pressure inside the eye.

Open Angle Glaucoma

It is the most common form of glaucoma. It is caused by slow clogging canals resulting in increased eye pressure. It had wide open angle between the iris and cornea.

Pathophysiology

The underlying cause of open angle glaucoma remains unclear. However the major risk factor for most of glaucoma and focus of treatment is increased intraocular pressure. Intraocular is function of production of liquid aqueous humor by ciliary processes of eye and its drainage through trabecular meshwork via scleral venous sinus (schlemm's canal) into scleral plexuses and general body circulation. Whenever there is block in drainage process due to degeneration and obstruction of trabecular meshwork, intraocular pressure increases causing damage to optic nerve.

DISCUSSION

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. The patients who suffer from pain and inflammation will feel relief from the anti-inflammatory and anaesthetic effects of the leech's saliva.^[20]

According to *Ayurveda*, diseases are occurred by vitiation of *Dosha*. The vitiated *Dosha* can get accumulated in *Strotas* which causes blockages and may lead to diseases. Many diseases could be treated with leech application.

Probable mode of action of *Jalaukavacharana*

The probable mode of action of *Jalauka* is purification of body by removing deeply seated toxins and pacifying vitiated *Dosha*. 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.

CONCLUSION

Jalaukavacharana is described under *Raktamokshana* of *Panchakarma* of *Ayurveda*. It is one of the very effective treatment modality for treating various *Netra-roga* as well as in many systemic diseases. It is also helpful as adjuvant therapy in Glaucoma. When leech is applied to biologically active areas of the human body, the bite itself gives a positive effect. According to modern science, leech's saliva contains Hirudin, Hyluronidase enzyme which acts as anticoagulant, local anaesthetic, anti-inflammatory, vasodilator, antithrombotic, hypotensive and analgesic effect. Hence, more efforts should be undertaken to optimize this utilization. More clinical trials are required to assess leech efficacy and safety in the treatment of Glaucoma.

It is easy to learn and apply the para surgical procedure like *Jalaukavacharana* in the management of different surgical conditions where surgery is not possible to treat the condition or there is great chance of recurrence of disease as in Glaucoma. 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 Open Angle Glaucoma.

REFERENCES

1. Sushruta Sanhita Sutra Sthana 13/4-8, Hindi Commentary Ayurveda Tattva Sandipika Written by Kaviraj Ambikadatta Shastri by Chaukhambha Orientalia, Varanasi-221005.
2. Sushruta Sanhita Sharir Sthana 8/23, Hindi Commentary Ayurveda Tattva Sandipika Written by Kaviraj Ambikadatta Shastri by Chaukhambha Orientalia, Varanasi-221005.
3. Sushruta Sanhita Sutra Sthana 13/9, Hindi Commentary Ayurveda Tattva Sandipika Written by Kaviraj Ambikadatta Shastri by Chaukhambha Orientalia, Varanasi-221005.
4. Sushruta Sanhita Sutra Sthana 7/16, Hindi Commentary Ayurveda Tattva Sandipika Written by Kaviraj Ambikadatta Shastri by Chaukhambha Orientalia, Varanasi-221005.
5. Sushruta Sanhita Sutra Sthana 13/10, Hindi Commentary Ayurveda Tattva Sandipika Written by Kaviraj Ambikadatta Shastri by Chaukhambha Orientalia, Varanasi-221005.

6. Sushruta Sanhita Sutra Sthana 13/17, Hindi Commentary Ayurveda Tattva Sandipika Written by Kaviraj Ambikadatta Shastri by Chaukhambha Orientelia, Varanasi-221005.
7. Sushruta Sanhita Sutra Sthana 13/17, Hindi Commentary Ayurveda Tattva Sandipika Written by Kaviraj Ambikadatta Shastri by Chaukhambha Orientelia, Varanasi-221005.
8. Sushruta Sanhita Sutra Sthana 13/14, Hindi Commentary Ayurveda Tattva Sandipika Written by Kaviraj Ambikadatta Shastri by Chaukhambha Orientelia, Varanasi-221005.
9. Sarth Vagbhata Sutra sthana 26/40, written by Ganesh Krushna Garade by Anmol Prakashana, Pune-2.
10. Sushruta Sanhita Sutra Uttartantra 1/20,21, Hindi Commentary Ayurveda Tattva Sandipika Written by Kaviraj Ambikadatta Shastri by Chaukhambha Orientelia, Varanasi-221005.
11. Sarth Vagbhata Sutra sthana 12/14, written by Ganesh Krushna Garade by Anmol Prakashana, Pune-2.
12. Sarth Vagbhata Sutra sthana 11/26, written by Ganesh Krushna Garade by Anmol Prakashana, Pune-2.
13. Sarth Vagbhata Sutra sthana 12/4, written by Ganesh Krushna Garade by Anmol Prakashana, Pune-2.
14. Sushruta Sanhita Sutra Uttartantra 12/8, Hindi Commentary Ayurveda Tattva Sandipika Written by Kaviraj Ambikadatta Shastri by Chaukhambha Orientelia, Varanasi-221005.
15. Sarth Vagbhata Sutra sthana 27/6,7,8, written by Ganesh Krushna Garade by Anmol Prakashana, Pune-2.
16. Sushruta Sanhita Sharir Sthana 8, Hindi Commentary Ayurveda Tattva Sandipika Written by Kaviraj Ambikadatta Shastri by Chaukhambha Orientelia, Varanasi-221005.
17. Sarth Vagbhata Sutra sthana 27/9, written by Ganesh Krushna Garade by Anmol Prakashana, Pune-2.
18. Sarth Vagbhata Sutra sthana 27/41,46 written by Ganesh Krushna Garade by Anmol Prakashana, Pune-2.
19. Kanski's clinical Ophthalmology, Glaucoma Chapter 10, Brad Bowling, 8th edition
20. Review on leech application on Ayurveda and Shrilakan traditional medicine, by E.R.H.S.S. Ediriveera, article published in JAHM, Volume 2, Issue 1.