



CONCEPT OF LEECH AND LEECH THERAPY IN AYURVEDA

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ABSTRACT

Sushruta Samhita, the oldest available scientific book on surgery devoted an entire chapter for the description of jalouka and jalouka avcharna for the purpose of blood letting. Leech therapy or Hirudotherapy is treatment using medicinal leech. It's used as therapeutic from beginning of civilization. Leeches have been known to possess biologically active compounds in their secretions, especially in their saliva. Leech therapy has established itself in plastic and microsurgery as a protective tool against venous congestion and also used many disease like bleeding piles, infected wound etc. leech therapy is claimed to be the supreme therapy because of safety and higher efficiency in blood disorders. Despite the efficacious properties of leech therapy, the safety, and complications of leeching are still controversial.

KEYWORD: Leech, Hirudotherapy, Jalouka avcharna, Bleeding piles.

INTERODUCTION

Acharya Sushruta explained detailed in Sushruta Samhita about jalouka (leech) and jaloukaavcharna(application of leech) for the purpose of bloodletting.^[1] Leech, fresh water species of *Hirudo medicinalis*, is experiencing a resurgence in health care.^[2] Leech therapy involves an initial bite, which is usually painless (it's thought that leech saliva contains a mild anesthetic); an attachment period lasting 20 to 45 minutes, during which the leech sucks between 5 and 15 ml of blood; and a post attachment period, during which the site continues to bleed.^[3] The final stage provides the primary therapeutic benefit; it's caused by components in the leech's saliva, including Hirudin, a protein anticoagulant that inhibits thrombin in the clotting process, as well as histamine-like substances that induce vasodilation.^[4] Many disease recommended surgery like venous congestion, bleeding piles etc. which an threaten surgical outcome have better option that is leech therapy. Leech therapy anti inflammatory, anti bacterial, anti coagulation properties. leech therapy is claimed to be the supreme therapy because of safety and higher efficiency in blood disorders But bleeding disorder, anemia leech therapy is contraindicated.

Collection and Presentation

Jaloka = jala+oka i.e. animals who's life depend on water.^[5]

Leeches can be collected from a pond by use of a wet leather keeping in the stream.^[6]

Time – Sharad ritu (autum season).

Prevention – They should be kept in wide pot. The pot should be filled with pure water of pond with lotus. Its normal feeding in with shaival, grass, powder of small plants. On every third day water should be changed and feeding should be kept into the pot, after 7 days pot should be changed.^[7]

Types

Table no. 01: Types of jaloka according to Ayurvedic literature.^[8]

Savisha	Nirvisha
Krishna	Kapila
Karbura	Pingla
Algarda	Shankhmukhi
Indrayudha	Mushika
Samudrika	Pundarikmukhi
Gochandana	Savrika

Leech Application

An average size leech will cause bleeding of ½ to 2 ounce of blood. Each leech will feed for 30 – 45 min, remove around 20 ml blood before falling off⁹. Though bleeding from affected site result blood loss up to ten times of this amount. For each patient separate leech should be applied.

Indication

- King, rich person
- Child
- Old person
- Female
- Gulma,
- Arsha (bleeding piles)¹⁰
- Vidradhi (infected wound)
- Kustha, Visarpa (skin diseases)
- Vatarakta (gout)
- Galaroga,
- Netraroga
- Visha dvastha^[11]
- Varicose vein

Contraindication

- Acute hemophilia
- Hemorrhagic diathesis
- Anemia^[12]
- Blood dilution therapy
- Pregnancy
- Leukemia

Method of Leech Therapy**Poorva karma^[13]**

Shodhana of leech: The leech should be kept in haridra powder mixed in water for one minute and then washed in clean water.

Preparation of the patient: Affected part should be cleaned and swedan karma is done. The affected part should be rubbed by the rough powder of cow dung. It is contraindicated if part is ulcerated.

Pradhana karma^[14]

- Leech should be caught with gauze or with hands covered with gloves.
- Then leeches should be taken out from their receptles and sprinkled over the cater.
- Leech attech to the skin. If they refuse to stick over desire spot, affected part should be painted with milk or blood.
- Then blood is sucked in to the stomach by peristalsis.
- Each leech will ingest blood nearly ten times of its body weight before falling off. The middle part of leech is swollen, as soon as it starts sucking of blood, it suckes impure blood first, during sucking of blood from affected site leeches assume the shape of horse and raise their neck when they attech to the seat of the disease.
- If patient notice pain itching during sucking it should be think pure blood now sucked by leech.

Paschat karma^[15,16]

- The leech should release instantaneously by poring saindhava lavana at its mouth.

- They give up sucking.
- The leeches should be kept on rice powder, their mouth should be lubricated with composition of oil, common salt.
- Then they should caught with tail with help of thumb and forefinger of left hand.
- Their back should be fastly rubbed with same fingers of right hand from tail of mouth in upword direction so that they may eject the whole blood which they sucked. This should be repeated until emptying of their stomach.
- Now the leech kept in fresh water in separate pot.
- If leech moving here i.e. emission of blood is adequate.
- If leeches are dull i.e. the ejection is not adequate and Indramada (one type of diseases) may occur which is incurable.

Probable Mode of Action

- Leech which are born in water posses sweet or soothing properties hence they should be used in sucking the blood vitiated the pitta doshas so Pitta and Raktajanya diseases subside properly.^[17]
- Leech are anti inflammatory and used for local abstraction of blood and also anticoagulants.^[18]

Substance Found in Leech

- A medicinal leech is a small factory of biologically active substances.
- These chemicals are hirudin, calin, factor 10 inhibitor, collagenase, lipolytic enzymes, proteases, hyaluronidase etc. It also contains enzyme that reduce scar tissue and adhesion.^[19]

Effect of Leech Therapy^[20]

- Hirudine restrains the clotting of the blood & works as antibiotic.
- Calin also restrains the blood clotting.
- Hyaluronidase is a spreading factor that spreads active substance from bitten area.
- Egline restrains digestive protease.
- Bdeline is a plasma hindrance also They are antibiotic and anti inflammatory.
- Symbiotic bacteria named *Aeromonas* spp., located in the leech's gut, secrete enzymes that help not only in breaking down the components of the ingested blood, but also in producing antibiotics to prevent blood putrefaction after a long storage period in leech crop.^[21]

Consequences of Leech Therapy

- Normalization and improvement of capillary circulation.
- Expressed anti-inflammatory effect.
- Blood purification effect by expel out the vitiated blood.
- Immuno-stimulation and immuno-modulation effect.
- Improvement of endocellular exchange.
- Anti coagulation.

- Anti bacterial effect.
- Reduce fibroblast formation in hypertrophic scar and keloids.

Complication^[22]

- Histamine can leads to allergic reaction which may occur immediately or in some days with mild fever.
- Soreness after bite rarely appears.
- Small size scar in bitten area may remains for week.

DISCUSSION

Leech therapy has established itself as an alternative remedy for the treatment of vascular disorders, since leech saliva can temporarily improve blood flow and ameliorate connective tissue hyperalgesia.^[23] Hirudine restrains the clotting of the blood & works as antibiotic. Calin also restrains the blood clotting. Also leech therapy Immuno-stimulation and immuno-modulation effect. Improvement of endocellular exchange. Anti coagulation, Anti bacterial effect.

CONCLUSION

Leech therapy used in many disease like arsha, vatrakta, gulma, etc. from beginning of civilization. Leech have many biological substance in their saliva which give antibiotic, anti coagulation properties. Leech therapy in the field of plastic and reconstructive surgery is expected to be of paramount importance due to the ease of leech application and reduced side-effects. Despite the efficacious properties of leech therapy, the safety, and complications of leeching are still controversial.

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