

Review Article

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**JALAUKAVACHARANA (LEECH THERAPY) IN PANCHAKARMA WITH SPECIAL REFERENCE TO ITS PHARMACODYNAMICS**

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**Abstract**

Jalaukavacharana, also known as leech therapy, is one of the prominent Raktamokshana procedures that have been described in the ancient Ayurvedic text Sushruta Samhita. Jalaukavacharana is believed to be the safest and mildest form of bloodletting and is widely practiced in Panchakarma therapy for the treatment of Rakta and Pitta predominant diseases. The treatment involves the use of medicinal leeches applied to the affected area to drain out the vitiated blood and toxins. Jalaukavacharana is especially effective in the treatment of dermatological disorders, inflammation, vascular disorders, non-healing ulcers, and painful musculoskeletal disorders. From a scientific perspective, the medicinal use of Jalaukavacharana can be attributed to the presence of pharmacodynamically active principles in the saliva of medicinal leeches. These include hirudin, calin, bdellins, eglins, histamine-like principles, and hyaluronidase, which have anticoagulant, antiplatelet, anti-inflammatory, analgesic, vasodilatory, and antimicrobial actions. These active principles increase microcirculation, decrease local inflammation, relieve pain, and promote the healing process. This review article proposes to discuss the Ayurvedic aspects and scientific pharmacodynamic properties of Jalaukavacharana, thus establishing its scientific significance and importance in Panchakarma therapy.

**Keywords** Jalaukavacharana, Panchakarma, Raktamokshana, Leech Therapy, Pharmacodynamics

## Introduction

*Jalauka nirukti:* जलसमायुरत जलायुका, जलमासमोक इत जलौकसः ॥ या॥

Ayurveda has always stressed the significance of Doshas in the prevention and treatment of diseases.<sup>1</sup> Rakta Dushti is one of the most significant factors in the pathogenesis of many diseases, and Raktamokshana is the most primary treatment for its management. Among the many treatments of bloodletting, Jalaukavacharana is the most suitable one because of its mildness. Acharya Sushruta has described it extensively in terms of its indications, contraindications, and procedures.<sup>2</sup> Jalaukavacharana is widely used in Panchakarma therapy for diseases related to inflammation, pain, and congestion.<sup>3</sup>

जलौका विधाः जलौका के प्रकार ता द्वादश; तासां सविशाःस्तु, तावत्य इव निर्विषाः ॥10॥

## SAVISHA JALAUKA

स्थूलमध्याः परिक्लिष्टाः पृथ्व्योमन्दविचेष्टिताः। अग्राहिण्यो अल्पपाहिन्यः सविषाश्चा न पूजिताः ॥

(सु.सू.१८/१३)

## NIRVISHA JALAUKA

पद्मोत्पल नलिन कुमुद सौगन्धिक कुवलय पुन्डरीक शैवालकोथजात विमलेष्वम्भसः च निर्विष ॥

(सु.सू. १३/११)

### जलौका अवचरणः

शरीर पर जोंक लगाने की विधिः अथ जलकोवौसेकसाध्यव्याधितमुपवेश्य संवेश्य वा, विरुक्ष्यचास्य तमवकाशं मृद्रोमयचूर्णैर्यद्यरुजः स्यात् गृहीताश्च ताः सर्षपर्जनिक प्रतिगधागात्रीः सलिलसरकमध्ये मुहूर्तस्थिता अतीतक्लमा ज्ञात्वा ताभि रोगं ग्रहयेत्। श्र्लक्षणशुक्लाराद्रपोतावच्छन्नां कृत्वा मुखमपावृणुयात् : अगृह्णन्त्यै क्षीरविन्दुं शोणितविन्दुं वा दद्यत्, शस्त्रपदानि वा कुर्वितः यद्येवमपि न गृहीयत्तदाऽन्यं ग्रहयेत्

॥ Su.Su.13/19॥

यदा च निर्विषतेऽश्वखुरवसनं कुत्वोन्नम्य च स्कन्धं तदा जान्याद्ब्रह्मातितिः; गृह्णन्तेन चार्द्रवास्त्रवच्छन्नं कृत्वा धारयेत् ॥ दंशे तोडकंदुप्रादुर्भाववैर्जानियाच्छु धम्मियमदत्त इति; शुद्धमादानामपनयेतः अथ शोणितगन्धेन मुञ्चेनमुखमस्याः सैन्धवचूर्णेनाववाकिरेत्॥ अथ पतितां तन्दुलकन्दनप्रदिग्धागात्रिं तैललावण्यक्तमुखीं वामहस्ताङ्गुष्ठाङ्गुलिभ्यां गृहीत्पुच्छं दक्षिणहस्ताङ्गुष्ठाङ्गुलिभ्यां शनैःशनैर्नुलोममनुमोर्जयेदामुखात्, सामर्थ्यत्, तत्त्वद्यावत्य समाग्वन्तलिङ्गानीति। सम्यग्वन्ता सलिलसरके न्यस्ता भोक्तुकामा सतीचरेत्। या सीदति न चेष्टतेसा दुर्वता, तां पुनः सम्यग्वामयेत्। दुर्वन्तया व्याधिरसाध्य इन्द्रमदो नाम भवति। अथ सुवंतं पूर्ववत् सन्निदध्यात् ॥ [Su.Su13/20-22]



## According to Ashtanga Hridaya – Sutrasthana, Adhyaya 26

### **Jalaukavacharana- procedure of applying leeches:- .**

अथेतरा निशाकल्कयुक्ते अम्बसि परिप्लुताः अवन्तिसोमे तत्रे वा पुनश्चाश्रासिता जले लागयेद्भूतमृत्स्तन्यरक्तशास्त्रनिपातनैः पिबन्तीरुन्नत स्कन्धाश्च्छादयेन्मृदुवाससा

The leech that are kept for short time in water containing paste of turmeric / grain washed water (Avantisoma)/buttermilk should be made comfortable by putting back in pure water. should be made to stick to the body of the patient. The leeches are attracted to the desired part of the body, by rubbing the part with ghee, mud, breast milk/blood or by making a wound with a sharp instrument. When it starts drinking blood by raising its shoulders, it should be covered with a soft cloth.<sup>4</sup>

सम्पृक्त्वात् दुष्टशुद्धास्त्रात् जलौका दुष्ताशोणितम् आदत्ते प्रथमं हंसः क्षीरं क्षीरोदकादिव ४३ गुल्मार्शीविद्रधीन् कुष्ठवातरक्तगलामयान् नेत्ररुग्निषविसर्पान् शमयन्ति जलौकसः

Thus, stuck up, the leech will suck only the vitiated blood first from the mixture of vitiated and un-vitiated blood, just like the swan sucks the milk from a mixture of milk and water.<sup>5</sup>

### **Preservation of leeches**

It is put into a large sized new pitcher filled with water and slime of the pool. Shaivala and powder of dried meat and aquatic bulbs should be put into the pitcher for feeding. Blades of grass and leaves of aquatic plants should be put into it for them to lie upon. The water and edibles should be changed every two or three days The pitcher should be changed every one week.<sup>6</sup>



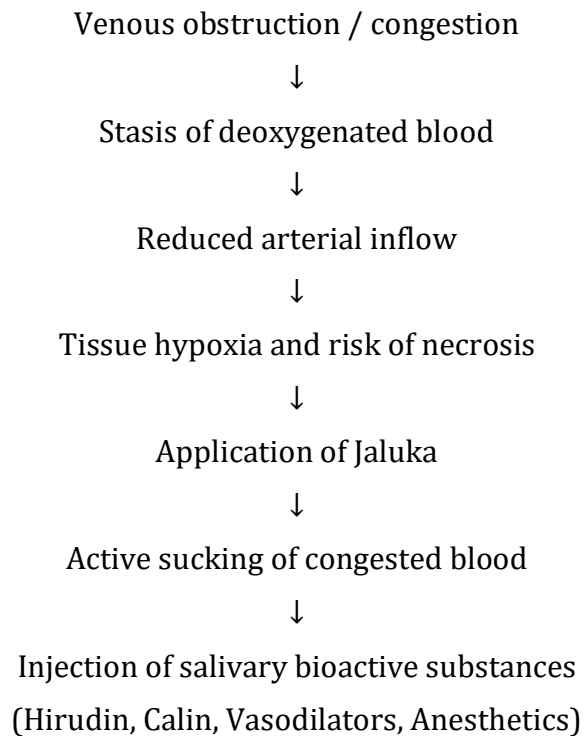
तत्र वात पित्त कफ दुष्टशोणित यथा संख्यांश्रृंगजलौकालबुभ्र् अवसेचयेत् ॥Su.Su.13/4

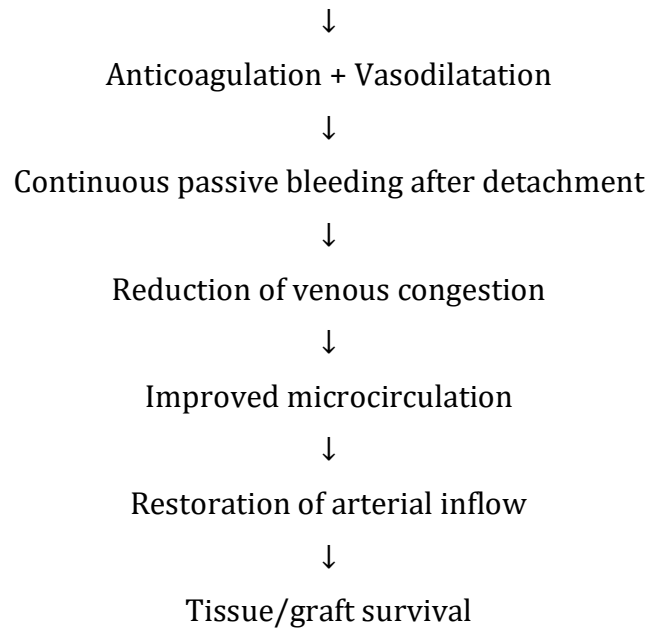
Blood vitiated by Vata - Pitta - Kapha should be let out by means of Shrunga - Jalauka - Alaabu respectively.

शीताधवासा मधुरा जलौक वारसंभवा । तस्मात् पत्तोप्सृष्टे तु हता सा त्वसेचने ॥ Su.Su.13/6

Leech emerges from water, Lives in Cold climate and is sweet and as such is useful in blood letting in those diseases vitiated by Pitta.

#### Mode of action





### **Method of collection of leeches**

- Acharya Sushruta, has told that the leeches can be caught with a piece of wet leather in tanks, streams and water bodies where there is lotus.
- There is another method to collect the leeches i.e. the fresh meat of dead animals, fish or milk must be applied
- on the thigh of an animal or the human himself, then tie it around his thigh (Jangha) and immerse tied part i.e. the Jangha in the water for some time. Due to attraction towards this diet, Jalauka will come and start biting.
- Then they are made to leave dead meat/skin with the application of Saindhava lavana (rock salt) and collected.





## Materials and Methods

The materials required for **\*\*Jaloka Avcharana\*\*** include medicinal leeches (*Hirudo medicinalis*), a glass or earthen vessel for storing them, clean water, and leaves like betel or plantain. For preparing the site, turmeric powder, gauze or clean cloth, and lemon juice or mild antiseptic are used. During application, cotton swabs or sticks, a bowl of water, and sometimes a spatula or forceps are needed. After the procedure, turmeric or neem paste, bandages or sterile gauze, and an antiseptic solution are applied. Additionally, gloves and a disposal container are essential for safety and hygiene. This review article is based on the analysis of classical Ayurvedic texts such as Sushruta Samhita and Charaka Samhita, and the modern scientific research articles available on leech therapy. The literature was analyzed to understand the therapeutic and pharmacodynamic principles of Jalaukavacharana.



## Discussion & Conclusion

Jalaukavacharana is a Clinical experiences and scientific research have revealed that effective process for relieving pain, swelling, redness, and congestion. The elimination of

vitiated blood halts the development of the disease, and the leech saliva has a strong pharmacodynamic action.<sup>7</sup> Hirudin and calin possess anticoagulant and antiplatelet properties, and the constituents aid in the promotion of healthy circulation. The constituents such as histamine aid in the production of vasodilation, thereby promoting microcirculation. Bdelellins and eglins possess anti-inflammatory and analgesic properties, and hyaluronidase assists in the enhancement of tissue permeability, thereby promoting rapid healing. All these properties make Jalaukavacharana an effective process.<sup>8</sup>

Jalaukavacharana is a safe, effective, and minimally invasive Panchakarma process that has a strong root in Ayurvedic principles and scientific backing. The pharmacodynamic properties of Jalaukavacharana help to explain the strong root of the process. When used in a clinical setting, it has shown promising results in Rakta- and Pitta-dominated diseases.<sup>9,10</sup>

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