Therapeutic Properties of Raktamokshna by Jalauka: A review

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Abstract
Ayurvedic shodhan treatment is considered very important when the vitiation of the doshas is in excess. It has been advised to treat the ati-pravridha doshas by shodhan. Shodhan treatment is five fold bio-purificatory techniques. Raktamokshna (Blood letting) has been considered as prime treatment for the management of diseases caused by vitiated rakta. Raktamokshna can be done by two methods, i. shastra, the sharp instruments, and ii. anushatra. Jalauka, the medicinal leech, has been recognised as an anushastra by Sushrut, and ahhs been considered best treatment modality for treatment of Pittaj disorders of Rakta. Leech therapy has been recommended for the treatment of various diseases in Ayurvedic texts. This manuscript outlines the applicability of Leech therapy as explained in Ayurvedic texts and as recorded in various studies. Leech therapy has proved its efficacy in diseases ranging from pimples to inhibition of lung tumor colonization.

Introduction
Ayurveda and Ayurvedic system of medicine work on the principle of tridosha. Vitiation and imbalance of the doshas has been considered as one of the most important factors for the causation of the disease. Existence of three doshas has been accepted by almost all the scholars of Ayurveda, whereas Rakta, the fourth dosha has also been recognised by Sushrut. Leech application has been recognised and used for medicinal purposes since ages to treat the pittaj diseases of rakta. It has been advised to use Jalauka in patients with alpa satwa and delicate nature.

Jalauka Application
Sushrut has mentioned existence of two types of Jalauka;
i. Savish Jalauka (poisonous leech, unfit for medicinal purpose)
ii. Nirvish jalauka (non-poisonous leech, fit for medicinal purpose)
He has further mentioned 6 types of each of them as follows.
i. Savish Jalauka: Krishna Karbura Algarda Indraayudha Gochandana Saamudrika
ii. Nirvish jalauka: Kapila Pingla Shankhmukhi Mooshika Pundarikmukhi Saavarika
It has been advised to use only the nirvish jalauka for medical use. Also the use of Jalauka which is obese in the central part, ugly looking, hesitant in sucking blood and with less blood sucking capacity has been prohibited.
Jalauka should be reared in fresh water stored in an earthen pot. The pot should be partially filled with sand. Dry meat, fresh grass, roots and tubers of aquatic plants, and coral should be added to the pot as a part of diet of Jalauka. The contents of the pot should be changed frequently for the better health of Jalauka.
Before application of Jalauka to the patient, paste of Sarshap (Brassica campestris) and Haridra (Curcuma longa) should be applied on the body of Jalauka11. It is also recommended to make a small incision over the site of its application to facilitate its application12. After the Jalauka starts sucking blood from the affected site, it should be covered with a wet cotton cloth or cotton gauge piece13. Appearance of wave like movements over the body of Jalauka indicates that it is sucking blood14. Jalauka should be allowed to suck blood till it continues to suck the dooshit (vitiated) blood. Appearance of symptoms like mild prickling sensation and itching at the site of bite indicates that Jalauka is now sucking the pure blood. When these symptoms appear, then Jalauka should be removed from the body by putting some salt over the mouth of Jalauka15. After removal of Jalauka, if blood continues to flow from the site of bite then the blood should be examined to ascertain if the flowing blood is pure or vitiated. If the flowing blood is vitiated then it should be allowed to flow till the pure blood flow starts16. When pure blood flow starts then it should be checked with application of shadhaut ghrita and sheetal lepa17. It has also been advised to induce Vaman (vomiting) to the Jalauka by squeezing the Jalauka from tail to head end after removal from the body of the patient so that the Jalauka remains healthy18.

**Medicinal Uses of Jalauka Application**

Ayurveda proposes to use Jalauka for treatment of various diseases like Gulma, Arsha, Vidradhi, Kushtha, Vatarakta, Galaammaya (diseases of throat), Netrarug (diseases of eye), Visha (insect/snake bites) and Visarpai19. Removal of vitiated blood from the affected site helps alleviate erythema and pain20.

1. **Yuvanpidaka**: Leech application provides very good relief in patients with Yuvanpidaka (pimples). The effect is probably due to removal of vitiated pathogenic material accumulated in the tissues, it is also probably due to release of certain enzymes by the leech in to the superficial layers of the skin, normalization and enhancement of the capillary and the collateral circulation in the tissues, anti-inflammatory and the anti-biotic effects21.

2. **Dushta Vrana** (Infected wounds): Apaturkar et al. concluded that application of Leech helps in wound healing by improving the blood supply to tissues around the wound. It was also observed that leech application along with external application of decoction of Panchvaklala is more efficient in converting the Dushta Vrana into the Shuddha Vrana22.

3. **Vicharchika**: Manoj L. Sonaje et al. reported highly significant improvement in the cardinal symptoms of Vicharchika, and the improvement was better in comparison to the use of Shringa for Rak tamokshna23.

4. **Arsha** (Piles): Leech application has been found to be very effective in the management of thrombosed piles. The effect is probably due to analgesic and thrombolytic activities. Use of leech in such cases also produced decrease in pus and other discharges, which may be due to antimicrobial and mucolytic properties in the saliva of leech24.

5. **Deep Vein Thrombosis**: Kaur Rimaljeet et al reported that the Leech application was very effective in reducing the pain, swelling and tenderness in patients with deep vein thrombosis25.

6. **Gouty Arthritis**: Leech therapy was found to be highly effective in the patients with Gouty Arthritis. Improvement was reported in all major symptoms of the disease like Pain, Swelling, Stiffness, Restricted movements and the Deformity26.

7. **Shwitra** (Vitilgo): Weekly Leech application on the vitilgo patch for six months produced complete repigmentation in sixty percent cases, and in thirty five percent cases the lesions became stationary27.

8. **Osteo-Arthritis**: A clinical trial on patients with advanced osteoarthritis of the knee joint concluded that Leech therapy effectively reduced the need for analgesic intake. It was also noted that a double treatment regimen at a 4-week interval exhibited a longer term relieving and a better physical activity than a single treatment course28.

9. **Anti-bacterial properties**: Secretion obtained from salivary gland from the tropical leech H. manillensis has been found to have a wide spectrum antibacterial activity against both Gram-positive (S. aureus) and Gram-negative (Sal. typhi and E. coli) bacterial strains29. Two antimicrobial peptides (AMPs), theromacin
and theromyzin, were isolated from the body fluid of the leech *T. tessulatum*. It was found that both had an antibacterial activity against the Gram-positive bacterial strains, *Micrococcus luteus*\(^{30}\).

10. Inhibition of Lung Tumor Colonization: I. V. administration of Salivary gland extract from *Haementeria ghilianii* completely suppresses colonization of the mediastinal lymph nodes produced by I.V. inoculation of T241 sarcoma cells. At the same time it reduces the number and size of the lung tumor colonies produced by the tumor. On administration of Salivary gland extract, there was seen total suppression of neoplastic involvement of mediastinum which suggested that the extract is capable of inhibiting invasion of lung lymphatics after sarcoma cells have escaped from the blood circulation\(^{31}\). Later, an antimetastatic and anticoagulant protein named ghilanten was purified from the salivary gland secretion of the proboscis leech, *H. ghilianii*\(^{32}\) which reportedly could suppress metastasis of melanoma, breast cancer, lung cancer, and prostate cancer\(^{33}\).

11. Repair of near total amputation of fingers: Near total amputation of fingers was successfully treated with alone leech application without first performing a microvascular surgery. It was strongly recommended to resort to leech therapy in cases in which microsurgery is impossible to increase the limb salvage chance\(^{34}\).

12. Dentistry: It was reported that bloodletting by Leeches was considerably successful in the management of severe postoperative macroglossia cases when the common treatment method was not satisfactory\(^{35}\).

**Conclusion**

Bloodletting by *Jalauka*, the Medicinal Leech, provides comprehensive relief in *Pittaj* Disorders. Various manifestations of the *Pittaj* diseases are curable by use of *Jalauka*. Its use is not limited only to the prevention of diseases; various diseases can also be treated by the use of *Jalauka* for *raktamoksha* as described by ancient Ayurvedic scholars and various clinical studies. The available literature on the applicability of *Jalauka* reveals that it has potential to cure the diseases ranging from the simplest Acne to prevent the growth and spread of the malignant tumors. It is very useful in cases where acceptance of grafts of skin is doubtful. Its use helps improve the blood supply to the tissues and in the removal of vitiated pathogenic material accumulated in the tissues. It possesses various pharmacological properties like antimicrobial, analgesic, mucolytic and thrombolytic. Owing to the above mentioned properties and the effects seen in various studies, its use for the treatment of clinical conditions where it has been found to be useful should be encouraged, and at the same time further research should also be encouraged to establish its uses and any possible complications associated with its use.

**References**

2. Tripathi B, Ashtang Hridaya of Vagbhatta, Sutrasthan, Chaukhamba Sanskrit Sansthan, Delhi, 2012, 8.