



## ROLE OF JALAUKAVACHARANA (HIRUDOTHERAPY) IN THE PEDIATRIC SKIN DISEASES

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**ABSTRACT**

According to *Sushruta* an ancient scholar of *Ayurveda*, *Jalaukavacharana* is one of the procedures of *Raktamokshana* (blood-letting), it is considered as the ideal method to expel out the vitiated blood in *Nrupa* (King), *Adhya* (Rich), *Bala* (child), *Bheeru* (cautious), *Sukumara* (Delicate), *Naari* (female), *ParamaSukumara* (very delicate) persons. *Jalaukavacharana* (Hirudotherapy) is considered as the appropriate therapy for the disorders involving the vitiation of *Pitta* and *Rakta Dosha*. The basic pathology behind the skin disease according to *Ayurveda* is circulating *Doshas* get lodged in the deranged *Twak*, *Rakta*, *Mamsa* and *AmbuDhatu*s. Pediatric population is considered as *ParamaSukumara* (very delicate) and *Jalaukavacharana* is the best way to expel the *Dushita Rakta* a part of pathogenesis in skin diseases. The main objective of this article is to justify the role of *jalaukavacharana* (Hirudotherapy) in the pediatric skin diseases.

**Key Words:** *Raktamokshana, Dosha, Jalaukavacharana, Doshaja Vikara.*

**INTRODUCTION:**

*Sushruta* an ancient researcher in field of Ayurvedic surgery in about (600 B.C.) described about *Jalaukavacharana* (Hirudotherapy) is one of the procedures of *Raktamokshana*.<sup>1</sup> The practice of blood-letting began around 3000 years ago with the Egyptians, then continued with the Greeks and Romans, the Arabs and Asians, then spread through Europe during the middle Ages and the Renaissance. It reached its peak in Europe in the 19th century but subsequently declined and today in Western medicine is used only for a few select conditions.<sup>2</sup>

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*Ayurveda* advocates, “Let the noxious blood be let out” it will cure the disease or otherwise it will make a clear pathway towards further treatment modalities. The uses of leeches in Ayurvedic medicinal practice in India are very ancient. ‘*Jalauka*’ meaning leeches and ‘*Avacharan*’ meaning application. *Jalaukavacharana* is one of the procedures of *Raktamokshana* (blood-letting). It is considered as the ideal method to expel out the vitiated blood safely, quickly and effectively. *Jalaukavacharana* (Hirudotherapy) is claimed to be the supreme therapy because of its safety and high efficacy in the disorders involving the vitiation of blood.<sup>3</sup>

In *Ayurveda*, *Raktamokshana* is type of the *Shodhana* modality used to treat skin conditions. *Jalaukavacharana* is mainly indicated to remove the *Doshas* from the

*Avagadha* (deep seated) areas and *Pitta* dominant.<sup>4</sup>As per *Ayurveda* all skin diseases is due to circulating *Doshas* get lodged in the deranged *Twak*, *Rakta*, *Mamsa* and *AmbuDhatu*s.<sup>5</sup> Skindiseases i. e. *Dadru*, *Shivtra*, *Pama*, *Vynga*, *Nilika*, *Charmadala*, *Tilkalaka* and *Vidhradhi* affect the pediatric population was considered as *RaktaDoshajaVikara* by Charka.<sup>6</sup>

### Common skin diseases for *Jalaukavacharana*

**(Hirudotherapy):** Abscess, cellulitis, vitiligo, atopic dermatitis, infected wound, inflammatory swelling, acne vulgaris, psoriasis, scabies, eczema, cutaneous fungal infections and alopecia are common skin diseases in pediatric age group where *Jalaukavacharana* may be use.

### Selection of patient for *Jalaukavacharana* (Hirudotherapy):

*Nrupa* (King), *Adhya* (Rich), *Bala* (child), *Bheeru* (cautious), *Sukumara* (Delicate), *Naari* (female), *Parama Sukumara* (very delicate) persons.<sup>7</sup>

**General review of *Jalauka*:** There are two species of therapeutic medicinal leeches *hirudo medicinalis* and *hirudo mychaelsenii*. This is a segmented worm of phylum-*Annelida*. Leech has two suckers, one at each end, caudal (back end) and rostral (front end). Front end with three sharp jaws that leave a 'Y' shaped bite. A

leech can remain 30 minutes to 6 hours as it fills with blood. During feeding it can suck 5-15ml of blood, following the suction process the leech can perform active movements after a week.

**Mode of action of *Jalauka*:** Leech is *Sheet* (cold) in nature so commonly used in *pittaja* and *Raktaj* disorders. Leeches first sucks the impure blood than the pure so when patient feels pricking pain and itching over the bite place leech should be removed.<sup>8</sup> as said by *Sushruta* it sucks the impure blood of the body; the impurity can be in terms of auto immune reactions, enzymatic and hormonal imbalance, or chemical imbalance etc. Hirudotherapy depends on the following main properties of medicinal leeches: the blood-letting action during active suction of blood, passive oozing of the wound, and injection of biologically active substances with the saliva into the host.<sup>9</sup> The saliva of *H. medicinalis* contains more than 100 bioactive substances, including coagulation inhibitors, platelet aggregation inhibitors, vasodilators, and anaesthetizing, anti-microbial and anti-inflammatory agents. The saliva of the medicinal leech also contains proteinase inhibitors, such as *bdellins*, *eglin*, inhibitors of  $\alpha$ -chymotrypsin, *subtilisin*, and the granulocytic neutral proteases-elastase and *cathepsin G*, responsible for the anti-inflammatory effect of leeching.

Hyaluronidase, can degrade tissue hyaluronic acid, thus facilitating the infiltration and diffusion of the remaining ingredients of leech saliva into the congested tissue. Tissue permeability, restored with the help of hyaluronidase, promotes the elimination of tissue- and circulatory-hypoxia as well as local swelling. The persistent bleeding largely potentiates tissue decongestion and leads to loss of blood, relief of capillary net, decrease in venous congestion, decompression of the nerve trunks and endings, increase in lymph flow, positive changes of local hemodynamics, amelioration of hemorheology, increase of oxygen supply, improvement of tissue metabolism, and elimination of tissue ischemia.<sup>10</sup>

#### **Contraindications:** Hemorrhagic

Diseases, Absolute Hemophilia, Severe Anemia, Hypotension, Allergy to Leech, Active Tuberculosis, Immunocompromised Patients.

#### **Complications of Hirudotherapy:**

The infection caused by bacteria *aeromonas hydrophila* present in gut of leech, which can cause pneumonia, septicemia or gastroenteritis.<sup>11</sup> Excess blood loss, so contra indicated in patients of hemophilia or in other bleeding diathesis.

Some evidence based study also available to support the hirudotherapy efficacy in skin

diseases i.e. nevus of Ota<sup>12</sup>, *Vicharchika* (Eczema)<sup>13</sup>, cellulitis<sup>14</sup>, vitiligo<sup>15</sup> and alopecia areata<sup>16</sup>.

**Conclusion:** *Jalaukavacharana* is mainly indicated in the *Avagadha* (deep seated) areas. As *Jalaukas* are *Madhura* and *Jalavasithey* are considered as best for *pittaja Vikaras* and *Raktaja Vikaras*. The effect of *Jalaukavacharana* is mainly because of its method of sucking and the salivary secretions. The *Jalauka* sucks the impure blood directly from the capillaries this helps in the effective removal of edema of the affected site than *Suchiviyadhana*. Hence it can be concluded it safer modality of therapy used to treat paediatric skin conditions.

#### **References:**

1. *Sushruta Samhita* by Ambikadutta Shastri 1st part Hindi commentary *Sutra Sthanachapter* 13 page 43.
2. Gerry Greenstone BCMJ, Vol. 52, No. 1, January, February 2010, page(s) 12-14.
3. National health portal <http://117.239.178.13/jalukavacharan-hirudo-therapy>.
4. *Sushruta Samhita* by Ambikadutta Shastri 1st part Hindi commentary *Sutra Sthana* chapter 13/4 page 43
5. *Charaka Samhita* by Stayanarayana Shastri 1st part Hindi commentary *Nidan Sthana* 5/1 page 641.
6. *Charaka Samhita* by Stayanarayana Shastri 1st part Hindi commentary *Sutra Sthana* 28/11-12 page 571.
7. *Sushruta Samhita* by Ambikadutta Shastri 1st part Hindi commentary *Sutra Sthana* chapter 13/2 page 43

8. *Sushruta Samhita* by Ambikadutta Shastri 1st part Hindi commentary *Sutra Sthana* chapter 13/21 page 45.
9. Martin Grassberger et al Biotherapy history, principles and practice Springer Science & Business Media, 2013
10. Kosta Y. Mumcuoglu, Recommendations for the Use of Leeches in Reconstructive Plastic Surgery, Evidence-Based Complementary and Alternative Medicine Volume 2014 (2014).
11. Ivan Nikiforov et al Aeromonashydrophila Sepsis Associated with Consumption of Raw Oysters, Case Reports in Infectious Diseases, Volume 2014 (2014), Article ID 163040, 3 pages
12. Pigment reduction in nevus of Ota following leech therapy, Journal of Ayurveda and integrative medicine 5(2):125-8 · April 2014 with 104 Reads DOI: 10.4103/0975-9476.131736
13. A clinical trial for evaluation of leech application in the management of *Vicarcikā* (Eczema) AncSci Life. 2014 Apr-Jun; 33(4): 236–241. K.M. Pratap Shankar, S. Dattatreya Rao, Shaik Nafeez Umar, and V. Gopalakrishnaiah
14. Haematological study in patients of cellulitis treated by leech therapy, J Res Educ Indian Med - ISSN 0970-7700. 2011; 17(3-4): 95-100, anil k. Tripathi, s. J. Gupta, s. C. Varshney.
15. Efficacy of leech therapy and ayurvedic compound in vitiligo, www.ijrap.net/admin/php/uploads/923\_pdf.pdf, panigrahiementkumar et al.
16. Leech therapy in alopecia areata - a single case report, Case Study Case Rep. 2014; 4(3): 118-124 Arsheed Iqbal Bhat et al.

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