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ROLE OF AYURVEDA AND ITS IMPORTANCE TO STUDY JALAUKAVACARANA- A REVIEW

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ABSTRACT

Ayurveda describes a variety of therapeutic skills, including medicinal, surgical and parasurgical procedures. *Jalaukaavacharna* is a parasurgical procedure, focuses on removing contaminated blood to treat various conditions. *Sushruta Samhita* has devoted an entire chapter for the description of *Jalauka* and *Jalaukavacharna* in *Sutra Sthana.Inpresent article we are discussing the role and importance to study jalukavacarana.*

Keywords: Ayurveda, Jalaukavarcarana.

INTRODUCTION

Sushruta has outlined seven fundamental approaches for the treatment and management of different stages of Vranashopha. The concept of ShataKriyakala is particularly distinctive within Ayurveda, as it not only elucidates the pathogenesis of diseases but also emphasizes the necessity for clinicians to prioritize early and timely diagnosis and intervention to prevent complications. Jalaukavacharana is employed in numerous inflammatory conditions, with its mechanism of action being contingent upon specific factors. Jalaukavacharana is a traditional Ayurvedic practice of bloodletting that holds significant potential for addressing inflammatory, ischemic, and infectious diseases. The saliva of leeches is rich in various bioactive compounds that exhibit anti-inflammatory, anticoagulant, anesthetic, vasodilatory, antibiotic, and antioxidant effects, functioning through multiple mechanisms across various medical conditions.

The exploration of bioactive ingredients remains limited, with many compounds in leech saliva still not thoroughly investigated. A review by Dr. Dighade Shubhangi et al. on Jalaukavacharana, or leech therapy, highlights it as a non-surgical approach to Raktamokshana, recognized as a distinctive and effective method of bloodletting. Leeches are employed in a variety of conditions, from dermatological issues to ischemic heart disease, often yielding positive outcomes. Raktamokshana is particularly indicated for the treatment of Rakatajroga, especially in individuals exhibiting an imbalance between Pitta and Rakta dosha, along with elevated toxicity levels. This therapy is prevalent in plastic and reconstructive microsurgery, serving as a protective measure against venous congestion. The therapeutic benefits of leeches are attributed to the diverse bioactive constituents found in their saliva, which possess analgesic, anti-inflammatory, platelet-inhibitory, vasodilatory, thrombolytic, anesthetic, and antimicrobial properties. In a conceptual review by Dr. Richa Bhardwaj on Jalaukavacharana, it was determined that this therapy is more effective than topical analgesics and anti-inflammatory medications for treating inflammatory conditions. The application of leeches is particularly effective for venous congestion. In many skin disorders, the vitiation of Rakta dosha is a significant factor, and given that leeches possess Sheeta Virya, they are found to be highly effective. Thus, based on this conceptual perspective, it can be suggested that leeches may be advantageous in the treatment of Vranashopha. The leech's jaws penetrate the skin, allowing potent biologically active substances to infiltrate deeper tissues. The saliva of leeches is rich in various pharmacologically active compounds, including hirudin,

hyaluronidase, histamine-like vasodilators, proteinase inhibitors, collagenase, kallikrein inhibitors, superoxide production inhibitors, and various poorly characterized anesthetics and analgesics. Hyaluronidase, known as the spreading factor, is an enzyme present in leech saliva that enhances the penetration and diffusion of these pharmacologically active substances into the tissues. The restoration of tissue permeability, aided by hyaluronidase, facilitates the removal of tissue and circulatory hypoxia, as well as local swelling. The ongoing bleeding significantly enhances tissue decongestion and alleviates venous congestion by relieving the capillary network. These positive changes in local hemodynamics and improvements in hemorheology contribute to an increased oxygen supply, enhanced tissue metabolism, and the resolution of tissue ischemia.

IMPORTANCE OF IN TREATING ULCERS

The application of leech therapy yielded remarkable results in the treatment of the ulcer, as the various components found in leech saliva contributed significantly to the healing process. This was achieved by enhancing blood circulation to the affected area through vasodilation and decreasing platelet aggregation, which in turn mitigated thrombogenic effects. Additionally, leech saliva possesses both immunostimulant and immunomodulatory properties. Concurrently, hyaluronidase facilitates the penetration of active healing agents by clearing the pathway. These agents enable sustained bleeding for up to 24 hours post-detachment of the leech, assisting in the removal of necrotic tissue from the ulcer. Signs of healing were observed after three treatment sessions, with an improvement in blood supply to the ulcer and the emergence of healthy granulation tissue. The size of the ulcer gradually diminished, achieving complete healing within four months through the combination of leech therapy and daily antiseptic dressings. In conclusion, this study demonstrates that leech therapy is highly effective for non-healing ulcers. The patient's ulcer showed no signs of improvement despite daily antiseptic dressings and various ointments; however, following the introduction of leech therapy, significant progress was noted. The ulcer exhibited substantial improvement and a rapid recovery rate, culminating in complete healing over a four-month period. Thus, leech therapy has been validated as a viable intervention for non-healing ulcers. Chronic non-healing ulcers are defined as wounds that fail to heal within a three-month period, often remaining in the inflammatory phase for an extended duration, which may result in them never healing or taking years to resolve. These ulcers can be classified as either spontaneous or traumatic lesions, primarily located in the lower extremities, and are resistant to initial treatment or continue to persist despite receiving appropriate care, without progressing towards healing within a specified

timeframe, often linked to an underlying systemic condition. Wounds that do not show signs of healing after three months are categorized as chronic. Various types of non-healing ulcers exist, including venous, arterial, pressure sores, diabetic ulcers, and traumatic ulcers. If the normal healing process is disrupted, an ulcer may develop into a chronic condition due to insufficient growth factors and cytokines, which prolong the healing time. The occurrence of chronic non-healing ulcers is more prevalent among individuals with risk factors such as atherosclerotic occlusion, smoking, obesity, and diabetes. This condition represents a significant health issue, affecting approximately 2 to 6 million people in the United States, while its global prevalence varies between 1.9% and 13.1%. Medicinal leech therapy, also known as Hirudotherapy, has been utilized as a traditional treatment for various ailments since ancient times. The species Hirudo medicinalis is the most commonly used among leeches. The therapeutic effects of leeches can be attributed to their saliva, which contains over 20 bioactive substances, including hirudin, antistasin, bdellins, eglins, and carboxypeptidase inhibitors. These substances exhibit anti-inflammatory, analgesic, and anesthetic properties, as well as vasodilatory, anticoagulant, and platelet-inhibitory effects, along with thrombin regulatory functions and antimicrobial activities.

Discussion

The operational mechanism seems to involve the release of biologically active compounds from the leech's salivary glands into living organisms. Leech saliva contains approximately 100 distinct bioactive substances, with hirudin being the most prevalent. Hirudin functions by inhibiting the blood coagulation process. Additionally, the secretions from the leech's salivary glands exhibit anti-inflammatory, bacteriostatic, and analgesic properties, which help to rectify microcirculation issues and repair damaged blood vessels. Leeches are currently recognized as a highly effective method for extracting pooled blood from wounds, surpassing other medicinal therapies. Hirudotherapy enhances the nutrient supply to tissues, thereby facilitating improved wound healing. Additionally, the application of leeches is straightforward. Although this practice has been documented in medicine for centuries, ongoing research is being conducted to further explore its benefits. It is proposed that Hirudotherapy serves as a valuable treatment option for managing various types of wounds. This research provides the first detailed examination of the relative positioning, dimensions, and structure of proteins and lipids within the salivary gland secretions of medicinal leeches, utilizing both scanning electron microscopy and transmission electron microscopy. The findings are further corroborated by confocal laser scanning microscopy of salivary gland secretion samples treated with fluorescein isothiocyanate. Following incubation with

nonionic detergents such as Brij 35 and Tween 20, transmission electron microscopy demonstrated the disintegration of fragments made up of protein-lipid particles, accompanied by an increase in the concentration of free proteins as determined by a modified Lowry assay. Cholesterol was identified during the analysis of salivary gland secretions through the use of cholesteryl-Bodipy, a hydrophobic fluorescent analog of cholesterol, on surface sections during the confocal examination of electron microphotographs of the secretions. Side Effects Local itching emerged as a prevalent minor side effect of leech therapy, which patients should be made aware of. Theoretically, there exists a risk of infection associated with leech therapy due to the presence of Aeromonas hydrophila bacteria in Hirudo medicinalis. Instances of infection and septicemia caused by A. hydrophila have been documented in cases where leeches were applied to severely ill patients or to malperfused tissues in reconstructive or plastic surgical procedures.

Conclusion

All medical systems strive to restore health to those who are unwell. Leech therapy exemplifies a medical intervention that is appreciated in both complementary and conventional medicine. This article encompasses the most comprehensive literature available regarding leech therapy in Ayurveda, spanning from classical texts to contemporary clinical trials.

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