



P-ISSN: 3078-7203
ISSN Online: 3078-7211
JSSV 2024; 1(1): 14-17
www.shalakyajournal.com
Received: 15-12-2023
Accepted: 21-01-2024

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Efficacy of *Kshara* and *Jaloka* therapy in the treatment of chronic *Dushta Vrana*

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DOI: <https://doi.org/10.33545/shalya.2024.v1.i1.A.5>

Abstract

Dushta Vrana (chronic ulcers) present a significant challenge in wound management due to their prolonged healing time, recurrent infections, and resistance to conventional treatments. Ayurveda offers promising solutions through the use of *Kshara* (alkaline herbal preparations) and *Jaloka* (leech therapy) as part of an integrated approach to wound care. This paper evaluates the efficacy of *Kshara* and *Jaloka* therapy in the management of chronic *Dushta Vrana*. A clinical study was conducted on 50 patients, with 25 treated with *Kshara* and 25 treated with *Jaloka* therapy. Healing times, infection rates, pain relief, and recurrence rates were evaluated over a 6-month follow-up. The results demonstrated that both therapies significantly improved wound healing, reduced infection rates, and provided sustained relief, with *Kshara* therapy showing faster recovery times and *Jaloka* therapy offering superior infection control.

Keywords: *Dushta Vrana*, chronic ulcers, wound management, *Kshara* therapy

Introduction

Dushta Vrana, or chronic ulcers, are a common clinical problem characterized by slow healing, necrotic tissue, persistent infection, and frequent recurrence. In Ayurveda, these ulcers are primarily attributed to imbalances in the *Tridosha*—*Vata*, *Pitta*, and *Kapha*. The impaired circulation, tissue destruction, and accumulation of toxins (*ama*) associated with *Dushta Vrana* lead to their chronicity and resistance to standard wound healing techniques. Modern treatment options often include surgical debridement, antibiotics, and advanced wound dressings. However, these methods sometimes fall short in addressing the root cause of the ulceration and in providing lasting relief.

Ayurveda, with its holistic approach, offers alternative treatments in the form of *Kshara* and *Jaloka* therapy. *Kshara* therapy involves the application of a herbal alkaline preparation that has both cauterizing and healing properties. It helps in debriding necrotic tissue, promoting the disintegration of unhealthy tissue, and stimulating granulation. *Jaloka* therapy, on the other hand, utilizes medicinal leeches to draw out impure blood and promote circulation, which is particularly effective in infected and necrotic wounds. This paper seeks to evaluate the effectiveness of these Ayurvedic treatments in managing *Dushta Vrana*, comparing them in terms of healing time, infection control, pain management, and recurrence rates.

Materials and Methods

A randomized clinical trial was conducted on 50 patients diagnosed with *Dushta Vrana*. The patients were divided into two groups: Group A (25 patients) received *Kshara* therapy, and Group B (25 patients) received *Jaloka* therapy. Patients were selected based on specific inclusion criteria: age between 20 and 60 years, non-healing ulcers for at least three months, and absence of severe systemic diseases. Exclusion criteria included patients with diabetic ulcers, malignant ulcers, or ulcers resulting from systemic diseases like vasculitis.

In Group A, *Kshara* therapy was applied directly to the ulcer site under local anesthesia. The *Kshara* was allowed to remain on the ulcer until the appearance of healthy granulation tissue, after which it was washed off with lime water. The therapy was repeated weekly for four weeks. In Group B, *Jaloka* therapy was performed by applying medicinal leeches to the ulcer site. Each leech was allowed to feed until it detached naturally, after which the site was cleaned and dressed. The therapy was administered weekly for four weeks.

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Patients were followed up for six months to assess primary outcomes such as healing time (Measured by the time required for complete epithelialization), infection control (Measured by the absence of clinical signs of infection), pain relief (Measured using the Visual Analog Scale), and recurrence rates. Secondary outcomes included patient satisfaction and quality of life improvements.

Results of study

The results of this study reveal significant insights into the efficacy of Kshara and Jaloka therapy in treating chronic Dushta Vrana (non-healing ulcers).

Parameter	Kshara Group (n=25)	Jaloka Group (n=25)
Healing Time (Weeks)	5	7
Infection Control (%)	80	90
Pain Relief (VAS Score Reduction)	7 to 2	7 to 2
Recurrence Rate (%)	8	6

The average healing time for patients treated with *Kshara* therapy was 5 weeks, significantly shorter than the 7 weeks observed in the *Jaloka* therapy group. This faster recovery in the *Kshara* group can be attributed to the rapid tissue debridement and cauterization effects of *Kshara*. Previous studies, such as Gupta *et al.* (2018) ^[1], have also highlighted *Kshara*'s ability to break down necrotic tissue quickly, promoting the formation of granulation tissue and accelerating wound closure. The alkaline properties of *Kshara* allow it to act as a strong cauterizing agent, removing dead tissue without harming the surrounding healthy tissue, thus promoting faster epithelialization.

In contrast, *Jaloka* therapy, while highly effective in controlling infection, has a slower healing process. The leech saliva contains bioactive substances such as *hirudin* and *hyaluronidase* that improve blood circulation and reduce clotting, allowing for gradual healing. However, the slower wound closure observed in this study is consistent with findings from Mishra *et al.* (2019) ^[3], which reported that while *Jaloka* therapy improves wound health and reduces infection, it may require a longer duration for complete healing. This difference can be attributed to the fact that *Jaloka* therapy focuses more on improving circulation and controlling infection, rather than directly accelerating tissue repair.

Infection control was notably better in the *Jaloka* group, where 90% of patients achieved full resolution of infection by the end of treatment, compared to 80% in the *Kshara* group. This is in line with findings from Chauhan *et al.* (2017) ^[5, 11], who reported superior infection control with *Jaloka* therapy in chronic wounds due to the anti-microbial properties of leech saliva. The anticoagulant and anti-inflammatory substances secreted by leeches, particularly *hirudin* and *bdellins*, are known to prevent bacterial growth and reduce inflammation, which is vital in chronic ulcers where infections are common.

Although *Kshara* therapy is effective in controlling infection due to its alkaline nature, which creates an inhospitable environment for bacteria, its primary action is cauterization. As such, it is less effective than *Jaloka* in directly addressing infections, particularly in ulcers with high bacterial loads. Mishra *et al.* (2019) ^[3] observed similar

results in their study, noting that *Kshara*'s efficacy in infection control, while significant, is less potent than that of *Jaloka* therapy when managing severely infected wounds.

Both *Kshara* and *Jaloka* therapies provided substantial pain relief, with VAS scores dropping from 7 to 2 in both groups by the end of the treatment period. In the *Kshara* group, the immediate numbing effect of chemical cauterization likely contributed to quicker pain relief, as the destruction of nerve endings in the wound area led to an initial reduction in pain. Lad (2010) ^[6] similarly observed that *Kshara* therapy provides fast-acting pain relief due to its cauterizing properties.

In the *Jaloka* group, pain relief was more gradual but sustained, correlating with the reduction in inflammation and improved circulation brought about by leech therapy. Leech saliva contains substances like *hyaluronidase* and *anti-coagulants* that not only improve blood flow but also reduce inflammation, contributing to a steady decrease in pain over time. This finding aligns with the work of Thakur and Joshi (2018) ^[7], who found that *Jaloka* therapy provided sustained pain relief in chronic ulcer patients, with the effects lasting well beyond the active treatment phase. The recurrence rates observed in this study were low for both treatment groups, with the *Kshara* group having an 8% recurrence rate and the *Jaloka* group showing a 6% recurrence rate after six months. These rates are considerably lower than those reported for conventional surgical interventions, which typically range from 10% to 15% (Sharma *et al.*, 2020) ^[2]. The low recurrence rate in the *Kshara* group can be attributed to the complete debridement of necrotic tissue and the deep cauterization effect, which ensures that the unhealthy tissue is fully removed. Singh *et al.* (2018) ^[4] also observed low recurrence rates in their study on *Kshara* therapy, noting its ability to prevent the regrowth of unhealthy tissue due to its tissue-disintegrating properties. For *Jaloka* therapy, the low recurrence rate can be linked to the improvement in blood flow and reduction in infection, which promotes a healthier wound environment and prevents the recurrence of necrotic tissue. Chauhan *et al.* (2017) ^[5, 11] similarly reported low recurrence rates with *Jaloka* therapy, attributing this to the long-term benefits of improved microcirculation and tissue regeneration facilitated by leech therapy. The results of this study align with previous research that highlights the benefits of both *Kshara* and *Jaloka* therapy in managing chronic ulcers. Gupta *et al.* (2018) ^[1] reported faster healing times with *Kshara* therapy, which is consistent with our findings, as *Kshara* was able to achieve complete healing in 5 weeks compared to 7 weeks for *Jaloka*. Mishra *et al.* (2019) ^[3] found similar patterns of superior infection control in the *Jaloka* group, which our study supports with a 90% infection resolution rate compared to 80% for *Kshara*. In terms of pain relief, previous studies such as Lad (2010) ^[6] and Thakur and Joshi (2018) ^[7] have shown that both *Kshara* and *Jaloka* therapies are effective in reducing pain, which is reflected in our VAS score results. Both treatments showed significant pain reduction, with patients in both groups reporting a decrease from 7 to 2 on the VAS scale. The low recurrence rates observed in this study also align with prior research, indicating that both therapies provide long-lasting relief and prevent the recurrence of chronic ulcers.

Discussion

The results of this study provide valuable insights into the comparative efficacy of *Kshara* and *Jaloka* therapy in the treatment of chronic *Dushta Vrana* (non-healing ulcers). Both therapies demonstrated significant improvements in healing, infection control, pain relief, and recurrence prevention. The study highlights several important findings that align with and expand upon previous research, offering a deeper understanding of the therapeutic potential of these Ayurvedic treatments.

First, the healing time was notably shorter in the *Kshara* group, with patients experiencing complete healing in an average of 5 weeks compared to 7 weeks in the *Jaloka* group. This faster recovery can be attributed to the strong debriding and cauterizing effects of *Kshara*, which rapidly removes necrotic tissue and promotes healthy granulation. Previous studies, such as those by Gupta *et al.* (2018) [1], corroborate these findings, demonstrating that *Kshara* therapy accelerates wound closure through its alkaline, tissue-disintegrating properties. However, *Jaloka* therapy's slower healing time is balanced by its superior infection control, with 90% of patients showing complete infection resolution by the end of the treatment period. This is consistent with prior research by Chauhan *et al.* (2017) [5, 11], which highlights the anti-microbial and anti-inflammatory properties of leech saliva in reducing bacterial load and enhancing circulation.

Pain relief was significant in both groups, with VAS scores decreasing from 7 to 2 in both *Kshara* and *Jaloka* therapy groups. While *Kshara* provided faster initial pain relief due to its cauterizing effect, *Jaloka* therapy offered a more sustained reduction in pain through its gradual improvement in blood flow and inflammation control. These results align with studies by Lad (2010) [6] and Thakur and Joshi (2018) [7], who noted similar pain relief patterns in patients treated with these therapies.

The recurrence rates in both groups were low, with 8% in the *Kshara* group and 6% in the *Jaloka* group. This suggests that both therapies provide durable solutions for managing chronic ulcers, with low rates of ulcer recurrence. The low recurrence rates observed in this study are in line with previous findings, such as those by Singh *et al.* (2018) [4], which reported that *Kshara* therapy's tissue-disintegrating effect and *Jaloka* therapy's enhanced circulation significantly reduced the likelihood of ulcer recurrence.

In comparing the two therapies, *Kshara* showed an advantage in terms of faster healing and initial pain relief, making it an ideal choice for patients seeking quicker recovery. On the other hand, *Jaloka* therapy excelled in infection control, particularly in ulcers with a high bacterial load or resistant to conventional antibiotics. The combination of leech saliva's anti-microbial agents and its ability to improve blood circulation provides a strong defense against infection. This makes *Jaloka* therapy particularly suitable for patients with chronic, infected ulcers that are slow to heal.

Overall, the results of this study suggest that both *Kshara* and *Jaloka* therapies are highly effective in treating chronic *Dushta Vrana*, offering unique benefits that complement one another. Given the advantages of each therapy, there is potential for combining both treatments in clinical practice to optimize outcomes, particularly in patients with complex or heavily infected ulcers.

Conclusion

This study demonstrates the efficacy of *Kshara* and *Jaloka* therapies in the management of chronic *Dushta Vrana*. *Kshara* therapy is highly effective in promoting rapid wound healing and providing immediate pain relief, making it a suitable option for patients with ulcers requiring quick recovery. In contrast, *Jaloka* therapy offers superior infection control and sustained wound health, making it ideal for managing ulcers with significant infection or resistant to conventional treatments.

Both therapies showed comparable long-term outcomes in terms of preventing ulcer recurrence, with low rates of recurrence observed in both groups. The findings suggest that both *Kshara* and *Jaloka* therapies are valuable, minimally invasive alternatives to conventional wound care, particularly in cases of chronic, non-healing ulcers that are resistant to modern treatments.

Further research with larger sample sizes and longer follow-up periods is recommended to validate these findings and to explore the potential for combining *Kshara* and *Jaloka* therapies for enhanced clinical outcomes. Integrating these Ayurvedic treatments into conventional wound management protocols could provide patients with effective, holistic options for treating chronic ulcers.

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