

Clinical Role of Jalaukavacharana in The Management of Dushta Vrana W.S.R. To Venous Ulcer: A Comparative Clinical Study

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Abstract—Background: Chronic non-healing ulcers are a significant challenge in surgical practice due to delayed healing, persistent discharge, pain, and recurrence. In Ayurveda, such wounds can be understood under the concept of Dushta Vrana. Acharya Sushruta has described Jalaukavacharana as a method of Raktamokshana, which may be considered in selected clinical conditions. **Aim:** To evaluate the clinical response of Jalaukavacharana as a common component of treatment in patients with Dushta Vrana, with special reference to venous ulcer. **Materials and Methods:** A comparative clinical study was conducted on 40 patients diagnosed with Dushta Vrana (venous ulcer). Patients were divided into two groups of 20 each. Group A received Jalaukavacharana followed by Kasisadi Ghrita Vikeshika, while Group B received Jalaukavacharana followed by Jatyadi Ghrita Vikeshika. Treatment was continued for 28 days. Clinical assessment was carried out on the basis of Vedana, Kandu, Akruti, Srava, Vaivarnya, and granulation tissue.

Results: Both groups demonstrated improvement in clinical parameters following the treatment protocol. In Group A, pain reduced by 96.77%, itching by 100%, ulcer-size score by 93.18%, discharge by 100%, discoloration by 25.71%, and unhealthy granulation-tissue score by 100% at the end of 28 days. In Group B, pain reduced by 77.78%, itching by 100%, ulcer-size score by 35.55%, discharge by 68.70%, discoloration by 17.65%, and unhealthy granulation-tissue score showed improvement. Several within-group changes were statistically significant. **Conclusion:** Both treatment combinations involving Jalaukavacharana demonstrated favourable clinical changes in Dushta Vrana. The findings support further investigation of

Jalaukavacharana as an adjunctive procedure in chronic wound management. Since both groups received Jalaukavacharana, its independent therapeutic contribution cannot be determined from this comparative study.

Index Terms—Jalaukavacharana, Dushta Vrana, Venous Ulcer, Raktamokshana, Chronic Non-Healing Ulcer, Kasisadi Ghrita, Jatyadi Ghrita.

I. INTRODUCTION

Wound management is one of the important areas of Shalya Tantra. Chronic non-healing ulcers are frequently encountered in surgical practice and are associated with prolonged morbidity, pain, discharge, and impaired quality of life.

Venous ulcers are commonly associated with chronic venous hypertension, venous valve incompetence, and impaired venous return. These conditions result in oedema, skin pigmentation, inflammation, tissue damage, and delayed wound healing.

In Ayurveda, wounds are described under the broad concept of Vrana. Wounds exhibiting foul smell, excessive discharge, discoloration, slough, pain, and delayed healing are described as Dushta Vrana.

Acharya Sushruta has explained different methods of wound management under Shashti Upakrama. Raktamokshana is one of the important therapeutic approaches described in selected conditions. Jalaukavacharana, a method of bloodletting using

medicinal leeches, is considered a relatively gentle form of Raktamokshana.

The medicinal leech has attracted attention in modern medicine because its saliva contains several biologically active substances, including hirudin and other compounds that influence coagulation and local tissue responses.

The present clinical study focuses on the response observed in patients receiving Jalaukavacharana followed by two different local wound-dressing preparations.

II. AIM AND OBJECTIVES

Aim

To evaluate the clinical role of Jalaukavacharana in the management of Dushta Vrana with special reference to venous ulcer.

Objectives

1. To assess the clinical response following Jalaukavacharana with Kasisadi Ghrita Vikeshika.
2. To assess the clinical response following Jalaukavacharana with Jatyadi Ghrita Vikeshika.
3. To compare the changes in clinical parameters in both groups.
4. To assess the improvement in pain, itching, ulcer size, discharge, discoloration, and granulation tissue.

III. MATERIALS AND METHODS

Study Design

Comparative clinical study.

Sample Size

A total of 40 patients diagnosed with Dushta Vrana (venous ulcer) were included.

- Group A: 20 patients.
- Group B: 20 patients.

Treatment Protocol

Group	Intervention
Group A	Jalaukavacharana followed by Kasisadi Ghrita Vikeshika
Group B	Jalaukavacharana followed by Jatyadi Ghrita Vikeshika

Duration

The treatment period was 28 days.

Procedure

Jalaukavacharana was performed according to the classical Ayurvedic procedure described by Acharya Sushruta. Following completion of the procedure, the respective Ghrita Vikeshika was applied locally over the ulcer under aseptic precautions.

Patients were assessed periodically during the treatment period.

Assessment Parameters

The clinical response was assessed using the following parameters:

1. Vedana – Pain.
2. Kandu – Itching.
3. Akruiti – Ulcer size.
4. Srava – Discharge.
5. Vaivarnya – Discoloration.
6. Granulation tissue – Healthy or unhealthy granulation tissue.

IV. JALAUKAVACHARANA – AYURVEDIC AND MODERN PERSPECTIVE

Jalaukavacharana is described by Acharya Sushruta under Raktamokshana. It involves the application of medicinal leeches for controlled bloodletting.

Ayurvedic Perspective

Jalaukavacharana is described as a therapeutic method of Raktamokshana. It is traditionally considered in selected conditions where bloodletting is indicated.

Its role in the present study was to provide a common parasurgical intervention in both groups before local application of the respective Ghrita Vikeshika.

Modern Scientific Perspective

Medicinal leech saliva contains several bioactive substances:

Component	Reported activity
Hirudin	Anticoagulant activity through thrombin inhibition
Calin	Inhibition of platelet aggregation
Hyaluronidase	Facilitates tissue diffusion
Eglins	Anti-inflammatory activity
Bdellins	Protease-inhibitory activity

These substances may influence local coagulation, bleeding, inflammation, and tissue perfusion.

However, the established modern clinical application of medicinal leeches is primarily in selected cases of venous congestion, particularly in reconstructive surgery. Their independent efficacy in chronic venous-ulcer healing has not been conclusively established.

V. OBSERVATIONS AND RESULTS

A total of 40 patients were assessed during the study, with 20 patients in each group.

The most important observation was that both groups showed improvement in clinical parameters after receiving the treatment protocol involving Jalaukavacharana.

5.1 Effect on Vedana (Pain)

Assessment	Group A – Mean Score	Group A – Improvement (%)	Group B – Mean Score	Group B – Improvement (%)
Before treatment	1.55	–	1.35	–
Day 7	0.45	70.96%	1.00	25.93%
Day 14	0.45	70.96%	0.70	48.15%
Day 21	0.10	93.54%	0.35	74.07%
Day 28	0.05	96.77%	0.30	77.78%
Statistical significance	P < 0.001		P < 0.001	

5.2 Effect on Kandu (Itching)

Assessment	Group A – Mean Score	Group A – Improvement (%)	Group B – Mean Score	Group B – Improvement (%)
Before treatment	1.10	–	0.60	–
Day 7	0.15	86.36%	0.30	50.00%
Day 14	0.05	95.45%	0.25	58.33%
Day 21	0.00	100%	0.00	100%
Day 28	0.00	100%	0.00	100%
Statistical significance	P < 0.001		P < 0.001	

5.3 Effect on Akrti (Ulcer Size)

Assessment	Group A – Mean Score	Group A – Improvement (%)	Group B – Mean Score	Group B – Improvement (%)
Before treatment	2.20	–	2.25	–
Day 7	1.50	31.81%	2.10	6.67%
Day 14	1.20	45.45%	1.85	17.77%
Day 21	0.45	79.55%	1.70	24.44%
Day 28	0.15	93.18%	1.45	35.55%
Statistical significance	P < 0.001		P < 0.001	

5.4 Effect on Srava (Discharge)

Assessment	Group A – Mean Score	Group A – Improvement (%)	Group B – Mean Score	Group B – Improvement (%)
Before treatment	0.70	–	0.65	–
Day 7	0.25	64.28%	0.35	46.15%
Day 14	0.00	100%	0.20	68.70%

Assessment	Group A – Mean Score	Group A – Improvement (%)	Group B – Mean Score	Group B – Improvement (%)
Day 21	0.00	100%	0.20	68.70%
Day 28	0.00	100%	0.20	68.70%
Statistical significance	P < 0.001		Statistically significant	

5.5 Effect on Vaivarnya (Discoloration)

Assessment	Group A – Mean Score	Group A – Improvement (%)	Group B – Mean Score	Group B – Improvement (%)
Before treatment	1.75	–	1.70	–
Day 7	1.65	5.71%	1.65	3.03%
Day 14	1.60	8.57%	1.55	8.82%
Day 21	1.45	17.14%	1.45	14.71%
Day 28	1.30	25.71%	1.40	17.65%
Statistical significance	As reported in dissertation		As reported in dissertation	

5.6 Effect on Granulation Tissue

Assessment	Group A – Mean Score	Group A – Improvement (%)	Group B – Mean Score	Group B – Improvement (%)
Before treatment	0.90	–	1.25	–
Day 7	0.10	88.88%	Not available	–
Day 14	0.00	100%	Not available	–
Day 21	0.00	100%	Not available	–
Day 28	0.00	100%	0.90	Approximately 28%
Statistical significance	As reported in dissertation		Not available	

Overall Comparative Summary

Clinical Parameter	Group A – Improvement by Day 28	Group B – Improvement by Day 28
Vedana (Pain)	96.77%	77.78%
Kandu (Itching)	100%	100%
Akruti (Ulcer Size Score)	93.18%	35.55%
Srava (Discharge)	100%	68.70%
Vaivarnya (Discoloration)	25.71%	17.65%
Unhealthy Granulation Tissue	100%	Approximately 28%

Overall observation:

Both groups demonstrated improvement in the assessed clinical parameters. Greater reductions in the recorded scores were observed in Group A for pain, ulcer-size score, discharge, discoloration and

unhealthy granulation tissue. Both groups showed 100% reduction in the itching score by Day 21.

5.7 Comparative Summary of Results at Day 28

Clinical parameter	Group A: Kasisadi Ghrita + Jalaukavacharana	Group B: Jatyadi Ghrita + Jalaukavacharana
Vedana (Pain)	96.77%	77.78%
Kandu (Itching)	100%	100%
Akruti (Ulcer-size score)	93.18%	35.55%
Srava (Discharge)	100%	68.70%
Vaivarnya (Discoloration)	25.71%	17.65%
Unhealthy granulation-tissue score	100%	Approximately 28%

The percentages represent reductions in the recorded assessment scores, not necessarily the percentage of ulcers completely healed.

VI. DISCUSSION

The present study was conducted to evaluate the clinical response in patients with Dushta Vrana receiving Jalaukavacharana followed by two different Ghrita Vikeshika preparations.

An important feature of the study design is that Jalaukavacharana was administered in both groups. Therefore, the improvement observed in both groups represents the response to the combined treatment protocol rather than the isolated effect of leech therapy.

6.1 Clinical Response Observed in Both Groups

Both groups demonstrated improvement in pain, itching, ulcer-size scores, discharge, discoloration, and granulation-tissue assessment.

The reduction in Vedana in both groups may be associated with improvement in local wound inflammation and the combined effects of the treatment protocol.

The complete reduction in Kandu scores by Day 21 in both groups suggests a favourable response in this subjective clinical parameter.

The reduction in Srava was particularly notable in Group A, where the recorded mean score reached zero by Day 14. Group B also showed improvement, although discharge persisted at a lower mean score at Day 28.

The ulcer-size score showed a greater reduction in Group A than Group B. Similarly, the recorded unhealthy granulation-tissue score showed a greater reduction in Group A.

6.2 Possible Contribution of Jalaukavacharana

From the Ayurvedic perspective, Jalaukavacharana is a method of Raktamokshana described for selected clinical conditions.

From the modern perspective, leech saliva contains anticoagulant and other bioactive substances that may influence local bleeding, coagulation, inflammation, and tissue perfusion.

These mechanisms provide a scientific basis for investigating medicinal leech therapy in selected wound conditions. However, they do not establish that Jalaukavacharana alone caused the observed clinical improvements.

6.3 Comparative Interpretation of the Two Groups

The recorded results suggest that Group A showed greater improvement in pain, ulcer-size score, discharge, discoloration, and unhealthy granulation-tissue score.

Both groups achieved complete improvement in the recorded itching score by Day 21.

These findings may indicate differences in the response to the two local dressing preparations when administered following Jalaukavacharana.

However, the available within-group statistical results should not be interpreted as proof of statistically significant superiority of Group A over Group B. A direct between-group statistical comparison is necessary for that conclusion.

VII. CLINICAL SIGNIFICANCE

The findings of this study are relevant to the clinical evaluation of Jalaukavacharana as an adjunctive procedure in the management of Dushta Vrana.

The improvement observed in both groups provides a basis for further investigation of this procedure in chronic wound management.

The study also highlights the importance of combining appropriate local wound care with a systematic parasurgical approach.

For venous ulcers, Jalaukavacharana should not replace established management, including vascular assessment, appropriate compression therapy when indicated, wound care, and treatment of the underlying venous disease.

VIII. LIMITATIONS

1. The sample size was limited to 40 patients.
2. The treatment period was 28 days.
3. Jalaukavacharana was administered in both groups; therefore, its independent effect cannot be determined.
4. The study did not include a separate group receiving standard wound care without Jalaukavacharana.
5. Long-term recurrence and sustained ulcer closure require further evaluation.
6. Further between-group statistical analysis is required to establish comparative superiority.

IX. FUTURE SCOPE

- Larger controlled clinical studies.
- Evaluation of Jalaukavacharana as an independent intervention.
- Comparison with standard venous-ulcer management.
- Long-term follow-up for ulcer closure and recurrence.
- Assessment of quality of life and patient satisfaction.
- Standardisation of leech selection, procedure, and safety protocols.

X. CONCLUSION

Jalaukavacharana is an important parasurgical procedure described by Acharya Sushruta under Raktamokshana.

In the present comparative clinical study, both groups receiving Jalaukavacharana followed by different Ghrita Vikeshika applications demonstrated improvement in the clinical features of Dushta Vrana. Group A showed greater recorded reductions in pain, ulcer-size score, discharge, discoloration, and

unhealthy granulation-tissue score. Both groups showed complete improvement in itching by Day 21. These findings suggest that treatment protocols incorporating Jalaukavacharana may have potential as adjunctive approaches in the management of Dushta Vrana. Nevertheless, the independent therapeutic contribution of Jalaukavacharana cannot be established because it was administered in both groups.

Further well-designed controlled clinical studies are necessary to establish its specific role, safety, and long-term effectiveness in chronic non-healing ulcers.

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