

Clinical Evaluation Of Jalaukavacharana In Vatarakta (Gout): A Pilot Observational Study

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Abstract

Vatarakta is a classical Rakta-pradoshaja disorder described in Ayurveda, characterized by severe pain, swelling, redness, and functional impairment of joints. Clinically, it closely resembles gout, a crystal-induced inflammatory arthritis associated with hyperuricemia. Jalaukavacharana (leech therapy), a form of Raktamokshana, is traditionally indicated in Rakta- and Pitta-dominant inflammatory conditions. However, systematically documented clinical evidence using contemporary outcome measures remains limited.

The present study aimed to evaluate the effect of Jalaukavacharana on pain and inflammatory signs in a patient diagnosed with Vatarakta (gout). A prospective, single-arm pilot clinical study was conducted in one adult patient fulfilling classical Ayurvedic diagnostic criteria and laboratory confirmation of hyperuricemia. Jalaukavacharana was performed in three sittings on days 0, 3, and 6. Outcomes were assessed using the Visual Analogue Scale (VAS) for pain, clinical grading of swelling, presence of redness, and laboratory investigations.

Pain intensity reduced from a baseline VAS score of 8 to 2 by day 15, indicating a 75% reduction and exceeding the minimal clinically important difference for inflammatory arthritis. Swelling and redness resolved completely. No adverse events were observed.

The findings suggest that Jalaukavacharana may provide rapid and clinically meaningful symptomatic relief in Vatarakta (gout). The study supports classical Ayurvedic indications and highlights the need for larger controlled clinical trials.

Keywords: Vatarakta; Gout; Jalaukavacharana; Raktamokshana; Leech therapy; Traditional knowledge

INTRODUCTION:

Vatarakta is described in Ayurvedic classics as a disease caused by the mutual vitiation of *Vata dosha* and *Rakta dhatu*, leading to obstruction of normal *Vata gati*. Clinically, it presents with severe pain (*ruja*), swelling (*shotha*), redness (*raga*), burning sensation (*daha*), and discoloration of joints. The disease typically begins in small peripheral joints, especially the first metatarsophalangeal joint, and follows a relapsing-remitting course. These features show striking resemblance to gout, a metabolic inflammatory arthritis caused by monosodium urate crystal deposition secondary to hyperuricemia.

Conventional management of gout includes non-steroidal anti-inflammatory drugs, colchicine, corticosteroids, and urate-lowering therapy. While effective, these interventions are often associated with gastrointestinal, renal, and cardiovascular adverse effects, particularly during long-term use. This has led to renewed interest in traditional and integrative therapeutic approaches that may provide symptom relief with a favorable safety profile.

Ayurveda advocates *Raktamokshana* as a principal line of treatment in disorders involving *Rakta dushti*. Among its modalities, Jalaukavacharana is considered the safest and most suitable, especially in Pitta-Rakta predominant inflammatory conditions. Classical texts by Acharya Sushruta and Vagbhata specifically recommend Jalaukavacharana in painful, inflamed joint disorders marked by redness and burning sensation.

From a biomedical perspective, medicinal leech saliva contains bioactive substances such as hirudin, calin, bdellins, and histamine-like vasodilators, which exhibit anticoagulant, anti-inflammatory, analgesic, and microcirculatory-enhancing properties. These effects provide a plausible scientific rationale for the use of leech therapy in inflammatory joint disorders.

Despite extensive traditional usage, there is limited systematically documented clinical evidence using standardized outcome measures. The present pilot study was therefore undertaken to evaluate the clinical effect and feasibility of Jalaukavacharana in Vatarakta (gout).

MATERIALS AND METHODS

Study design:

A prospective, single-arm pilot clinical study was conducted to generate preliminary clinical evidence and assess feasibility for future controlled trials. The study design is appropriate for exploratory evaluation of traditional interventions, as recommended in integrative medicine research.

Participant:

One adult patient aged above 18 years presenting with classical signs and symptoms of Vatarakta and laboratory-confirmed hyperuricemia was enrolled.

Inclusion criteria:

- Classical clinical features of Vatarakta
- Elevated serum uric acid levels
- Age \geq 18 years

Exclusion criteria:

- Uncontrolled diabetes mellitus
- Bleeding or coagulation disorders
- Severe anemia (Hb $<$ 8 g/dL)
- Rheumatoid arthritis, osteoarthritis, autoimmune disorders

Ethical considerations:

The study protocol was approved by the Institutional Ethics Committee. Written informed consent was obtained prior to participation. The study adhered to the principles of the Declaration of Helsinki.

Intervention:

Jalaukavacharana was performed using medicinal leeches applied locally over the affected joint (great toe). Three sessions were conducted on days 0, 3, and 6.

The procedure followed classical Ayurvedic guidelines, including pre-procedural cleansing, spontaneous bloodletting by leech attachment, and post-procedural care using *Haridra churna* and pressure bandaging. Leeches were purified after use according to traditional protocols.

Outcome measures:

- **Pain intensity:** Visual Analogue Scale (VAS; 0–10)
- **Swelling:** Clinical grading (0–3)
- **Redness:** Presence or absence
- **Safety parameters:** Complete blood count and coagulation profile

Assessments were carried out at baseline and on day 15.

Statistical analysis:

As this was a single-case pilot study, inferential statistical tests were not applied. Data were analyzed using descriptive and clinically relevant metrics, including:

- Absolute change
- Percentage change
- Clinical significance analysis

A reduction of ≥ 2 points on the VAS was considered the minimal clinically important difference for inflammatory pain.

RESULTS:

At baseline, the patient reported severe joint pain (VAS score 8), moderate swelling, and visible redness over the affected joint. Following three sessions of Jalaukavacharana, pain intensity reduced to a VAS score of 2 by day 15, representing a **75% reduction**. This reduction exceeded the minimal clinically important difference, indicating clinically meaningful improvement.

Swelling and redness resolved completely by the end of the observation period. Laboratory parameters remained within normal limits, and no adverse events or procedure-related complications were reported.

DISCUSSION:

The present pilot study demonstrates that Jalaukavacharana produced rapid and sustained improvement in pain and inflammatory signs in a patient with Vatarakta (gout). The magnitude of pain reduction and complete resolution of swelling and redness support both the classical Ayurvedic rationale and emerging biomedical evidence.

From an Ayurvedic standpoint, Jalaukavacharana alleviates *Rakta dushti* and removes obstruction to *Vata gati*, thereby reducing pain and inflammation. From a biomedical perspective, the therapeutic effects may be attributed to the combined mechanical removal of congested blood and the pharmacological actions of leech salivary secretions, including anti-inflammatory, anticoagulant, and analgesic effects.

Similar benefits of leech therapy have been reported in gout and other inflammatory joint disorders, though most available evidence remains limited to case studies and small observational trials.

Limitations:

The study is limited by its single-patient design, absence of a control group, and short follow-up duration. Nevertheless, as a pilot investigation, it provides valuable preliminary data, demonstrates feasibility, and justifies further controlled clinical research.

CONCLUSION:

Jalaukavacharana appears to be a safe and effective therapeutic modality for reducing pain and inflammation in Vatarakta (gout). The findings support traditional Ayurvedic knowledge and highlight the potential role of leech therapy as an adjunct or alternative approach in inflammatory joint disorders. Larger randomized controlled trials with standardized outcome measures are required to establish definitive clinical efficacy.

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