IJAYUSH
International Journal of AYUSH
AYURVEDA • YOGA • UNANI • SIDDHA • HOMEOPATHY
https://internationaljournal.org.in/journal/index.php/ijayush/
ISSN: 2349-7025
OPEN ACCESS
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MONTHLY

Review Article	Volume 15 Issue 10	October 2026

A CRITICAL ANALYSIS OF THERAPEUTIC USES AND CLINICAL EVIDENCE FOR *SIRAVEDHA* IN AYURVEDA

***Dr. Manish Kumar Singh[1], Dr. Alok Kumar Mishra[2], Dr. Shubham Kumar Sharma[3]**

[1]Associate Professor, Department of *Shalya Tantra*, Maharana Pratap Ayurvedic Medical College and Hospital, Vithur Ishwariganj, Kanpur

[2]Professor & Director, Maharana Pratap Ayurvedic Medical College and Hospital, Vithur Ishwariganj, Kanpur

[3]Assistant Professor, Department of *Shalya Tantra*, Maharana Pratap Ayurvedic Medical College and Hospital, Vithur Ishwariganj, Kanpur

***Corresponding Author:** Dr. Manish Kumar Singh, Associate Professor, Department of *Shalya Tantra*, Maharana Pratap Ayurvedic Medical College and Hospital, Vithur Ishwariganj, Kanpur

Email: manishsinghlko11@gmail.com

DOI: https://doi.org/10.5281/zenodo.23873649

Abstract

Background: Siravedha is an important para-surgical procedure described in Ayurveda, particularly in the classical literature of Shalya Tantra. It involves the therapeutic removal of blood through venous puncture and is discussed in relation to selected diseases and clinical conditions. The classical Ayurvedic approach emphasizes appropriate patient selection, assessment of Dosha involvement, identification of the affected site and procedural precautions. Contemporary medicine recognizes venesection as a therapeutic intervention in specific hematological disorders, although its indications and clinical outcomes depend on the underlying disease. **Aim:** To critically analyze the classical therapeutic principles, indications, procedural considerations and available clinical evidence concerning Siravedha in Ayurveda. **Materials and Methods:** This narrative review is based on classical Ayurvedic literature, including Sushruta Samhita and Ashtanga Hridaya, along with contemporary literature concerning therapeutic phlebotomy, venesection and clinical safety. The review examines classical indications, Ayurvedic rationale, procedural considerations, potential risks and the limitations of available evidence. **Discussion:** Siravedha is described in Ayurveda as a therapeutic intervention for selected conditions associated with Rakta and Dosha disturbances. Its classical indications should be interpreted within their original Ayurvedic context. Modern therapeutic phlebotomy has established indications in selected hematological conditions, particularly disorders involving excessive iron accumulation or increased red-cell mass. However, these modern indications cannot be directly generalized to all classical Siravedha indications. Appropriate patient selection, clinical assessment, monitoring and safety precautions are essential. **Conclusion:** Siravedha represents an important classical Ayurvedic para-surgical procedure. Its therapeutic applications require critical interpretation in light of contemporary clinical evidence. Further well-designed studies are necessary to establish the effectiveness, safety and clinical relevance of Siravedha for individual Ayurvedic indications.

Keywords: Siravedha, Siravyadha, Raktamokshana, Therapeutic Phlebotomy, Venesection, Clinical Evidence.

1. Introduction

Ayurveda describes several therapeutic approaches for managing diseases according to their causative factors, Dosha involvement, clinical manifestations and prognosis. Among the classical para-surgical procedures, Raktamokshana occupies an important position in the management of selected conditions associated with Rakta.

Siravedha, also referred to as Siravyadha in classical literature, is a procedure involving the therapeutic puncture of a vein for bloodletting. It is discussed extensively in the surgical teachings of Sushruta and is considered one of the important approaches within the classical framework of Raktamokshana.

The Ayurvedic rationale of Siravedha is associated with the understanding of Rakta, Dosha and disease manifestation. Classical descriptions emphasize the identification of suitable patients, selection of an appropriate site, assessment of the patient's strength and the observance of procedural precautions.

In contemporary medicine, therapeutic phlebotomy is an established intervention for specific disorders, including hereditary hemochromatosis and certain conditions characterized by increased red-cell mass. Its clinical application is determined by diagnosis, laboratory findings, treatment objectives and patient-specific considerations.

Although Siravedha and modern therapeutic phlebotomy share the procedural concept of blood removal, their indications and theoretical frameworks are not identical.

The presence of bloodletting in both systems does not establish equivalence in therapeutic mechanism or clinical effectiveness.

A critical assessment is therefore necessary to distinguish classical Ayurvedic indications from contemporary evidence-supported applications.

The present article examines the therapeutic principles, clinical considerations and available evidence concerning Siravedha, with particular emphasis on its appropriate interpretation within modern clinical practice.

2. Aim and Objectives

2.1 Aim

To critically analyze the therapeutic applications, classical principles and clinical evidence associated with Siravedha in Ayurveda.

2.2 Objectives

- To describe the Ayurvedic concept and classification of Raktamokshana.
- To explain the classical principles and therapeutic rationale of Siravedha.
- To discuss the indications and contraindications described in Ayurvedic literature.
- To examine contemporary clinical applications of therapeutic phlebotomy.
- To compare classical therapeutic claims with available clinical evidence.
- To identify safety considerations and research requirements for Siravedha.

3. Materials and Methods

The present article is a narrative review based on classical Ayurvedic literature and contemporary medical publications concerning bloodletting and therapeutic phlebotomy.

The principal classical sources include Sushruta Samhita and Ashtanga Hridaya, particularly their descriptions of Raktamokshana, Siravedha, procedural principles and patient selection.

Contemporary literature concerning therapeutic phlebotomy, hematological disorders, procedural safety and clinical monitoring has been considered for comparison.

The review is organized under the following themes:

- Ayurvedic understanding of Rakta and Raktamokshana.
- Classical principles of Siravedha.
- Therapeutic indications and patient selection.
- Procedural considerations.
- Contemporary clinical applications.
- Critical evaluation of clinical evidence.
- Safety and research implications.

This article is a narrative review. It does not include original patient data, experimental observations or a systematic meta-analysis.

4. Ayurvedic Concept of Raktamokshana

Raktamokshana is described in Ayurveda as a therapeutic procedure involving the removal of blood in selected disease conditions.

The classical Ayurvedic understanding of Rakta considers it an important component of the body's physiological organization.

Rakta is described as a significant Dhatu and is discussed in relation to the maintenance of bodily functions, complexion and nourishment.

The classical literature also describes the relationship between Rakta and Pitta, emphasizing their close association in physiological and pathological processes.

In the Ayurvedic framework, disturbances involving Rakta may contribute to various clinical manifestations.

Raktamokshana is therefore considered in selected conditions according to the nature of the disease, the involvement of Rakta and the patient's overall condition.

4.1 Classification of Raktamokshana

Sushruta Samhita describes different methods of Raktamokshana.

The principal approaches include:

Siravedha: Therapeutic blood removal through venous puncture.

Prachchhana: A method involving superficial scarification or multiple small incisions.

Jalaukavacharana: Therapeutic bloodletting using leeches.

Alabu: Bloodletting using a gourd-like instrument.

Shringa: A method traditionally involving a horn-shaped instrument.

These approaches differ in their instruments, procedural methods and therapeutic considerations.

The selection of a method depends on the classical indication and the characteristics of the patient.

Siravedha is particularly important in the classical discussion of para-surgical procedures because it involves direct access to the venous circulation.

4.2 Concept of Siravedha

Siravedha is described as the puncture of a suitable vein for therapeutic blood removal.

The classical procedure emphasizes the identification of an appropriate vein and consideration of the patient's condition.

The Ayurvedic rationale is based on the assessment of Rakta and the disease-associated Dosha.

The therapeutic intention is to address selected pathological conditions through controlled blood removal.

However, classical descriptions should not be interpreted as demonstrating a universal therapeutic effect of bloodletting.

The procedure requires careful evaluation of the disease indication and the patient's suitability.

5. Therapeutic Indications of Siravedha in Ayurveda

Classical Ayurvedic literature describes Siravedha in relation to selected diseases and clinical manifestations.

The indications are discussed within the framework of Dosha, Rakta and disease-specific characteristics.

Sushruta Samhita provides descriptions of Raktamokshana and Siravedha in the context of surgical treatment and disease management.

The classical indications should be interpreted according to the original text and its commentary.

They should not automatically be considered equivalent to modern diagnoses.

5.1 Rakta-Related Disorders

Siravedha is traditionally discussed in conditions considered associated with Rakta disturbance.

The classical approach emphasizes the assessment of clinical manifestations, the affected region and the patient's condition.

However, the Ayurvedic concept of Rakta disturbance is broader than modern hematological abnormalities.

Therefore, classical Rakta-related indications cannot be directly equated with conditions such as polycythemia or iron overload without appropriate clinical evaluation.

5.2 Vata, Pitta and Kapha Considerations

The classical Ayurvedic approach considers the involvement of Dosha in disease manifestation.

Siravedha may be discussed in selected conditions where the classical texts describe its therapeutic relevance.

The assessment includes the nature of symptoms, disease location and the patient's strength.

The procedure should not be selected solely on the basis of a presumed Dosha imbalance.

A clinically appropriate diagnosis and evaluation of potential risks remain essential.

5.3 Classical Disease Indications

Sushruta Samhita describes Raktamokshana in relation to several disease conditions.

The indications are distributed across different sections of the text and should be examined according to the relevant disease-specific descriptions.

A critical review should distinguish:

- General indications of Raktamokshana.
- Specific indications of Siravedha.
- Indications described for other bloodletting methods.
- Conditions in which bloodletting is contraindicated.
- Disease-specific therapeutic recommendations.

This distinction is important because not every indication of Raktamokshana necessarily applies to Siravedha.

The exact list of disease indications should be verified against the classical edition used for publication rather than generalized from secondary summaries.

6. Classical Principles of Siravedha

The classical description of Siravedha emphasizes appropriate patient selection, anatomical considerations and procedural precautions.

6.1 Patient Assessment

Before considering Siravedha, the Ayurvedic approach evaluates the patient's overall condition.

Important considerations include:

- Age.
- General strength.
- Disease severity.
- Dosha involvement.
- Clinical manifestations.
- Suitability for blood removal.
- Presence of associated conditions.

The assessment should also consider whether the therapeutic objective can be achieved safely.

6.2 Anatomical Considerations

Classical literature describes the importance of selecting an appropriate site for Siravedha.

The procedure requires knowledge of venous anatomy and consideration of the intended therapeutic region.

Modern clinical practice additionally emphasizes the avoidance of injury to arteries, nerves and surrounding structures.

Anatomical variation and patient-specific factors must be considered.

6.3 Procedural Principles

The classical procedure involves the identification of a suitable vein and controlled blood removal.

Contemporary safety requirements include:

- Appropriate clinical setting.

- Qualified personnel.
- Sterile equipment.
- Assessment of bleeding risk.
- Monitoring of the patient's condition.
- Documentation of the procedure.
- Appropriate management of adverse events.

Siravedha should not be undertaken without adequate procedural training and clinical supervision.

6.4 Post-Procedural Assessment

After blood removal, the patient should be assessed for:

- Dizziness.
- Weakness.
- Excessive bleeding.
- Local pain.
- Hematoma.
- Vasovagal symptoms.
- Changes in vital signs.

Appropriate observation and supportive care are essential.

The amount of blood removed should be determined by a clinically appropriate protocol and should not be generalized from classical descriptions alone.

7. Modern Understanding of Therapeutic Phlebotomy

Modern therapeutic phlebotomy involves the removal of blood for specific medical indications.

Its use is based on established clinical diagnoses and measurable treatment objectives.

Unlike indiscriminate bloodletting, modern therapeutic phlebotomy is performed according to disease-specific protocols.

7.1 Hereditary Hemochromatosis

Hereditary hemochromatosis is a disorder characterized by excessive iron accumulation.

Therapeutic phlebotomy is an established treatment because repeated blood removal can reduce iron stores.

The treatment is monitored through relevant laboratory parameters, including ferritin and hemoglobin.

The frequency and amount of blood removed depend on the patient's condition and treatment phase.

7.2 Polycythemia Vera

Polycythemia vera is a myeloproliferative neoplasm characterized by increased red-cell production.

Therapeutic phlebotomy may be used to control hematocrit in appropriate patients.

Treatment decisions depend on clinical assessment, disease characteristics and current hematological guidelines.

The procedure is not equivalent to generalized bloodletting for nonspecific symptoms.

7.3 Other Clinical Applications

Therapeutic blood removal may be considered in selected medical conditions according to specialist recommendations.

However, its use is not universal.

The therapeutic objective, disease mechanism and monitoring requirements differ among conditions.

The evidence supporting therapeutic phlebotomy in one disease cannot be automatically extrapolated to unrelated conditions.

8. Critical Evaluation of Clinical Evidence

The clinical evidence for Siravedha must be interpreted according to the specific disease, procedural method and outcome being investigated.

Classical Ayurvedic descriptions provide historical and theoretical information concerning the procedure.

They do not, by themselves, establish its effectiveness according to contemporary clinical research standards.

8.1 Evidence from Classical Literature

The classical texts describe therapeutic indications, procedural principles and clinical observations.

These sources are important for understanding the historical development of Siravedha.

However, they generally do not provide the methodological features expected of contemporary clinical trials.

These include:

- Randomized allocation.
- Defined comparison groups.
- Standardized outcome measures.
- Statistical analysis.
- Systematic adverse-event reporting.
- Long-term follow-up.

Consequently, classical descriptions should be interpreted as traditional medical evidence rather than modern proof of effectiveness.

8.2 Evidence from Modern Therapeutic Phlebotomy

Modern therapeutic phlebotomy has established applications in selected hematological disorders.

The evidence is strongest when blood removal is linked to a clearly defined physiological or pathological target.

For example, reducing iron stores in hereditary hemochromatosis or controlling hematocrit in polycythemia vera represents a disease-specific therapeutic objective.

These indications differ substantially from the broader classical Ayurvedic concept of Rakta disturbance.

Therefore, modern evidence supports therapeutic phlebotomy in specific medical conditions but does not establish the effectiveness of Siravedha for all classical indications.

8.3 Evidence Limitations

The available evidence concerning Siravedha for individual Ayurvedic disease indications requires careful evaluation.

Important limitations may include:

- Small study populations.
- Lack of suitable control groups.
- Variation in procedural methods.
- Inconsistent diagnostic criteria.
- Limited follow-up.
- Inadequate adverse-event reporting.
- Use of subjective outcome measures.

Without a verified systematic literature search, it is not appropriate to claim that Siravedha has been conclusively established for a particular disease.

8.4 Need for Clinical Research

Future studies should evaluate Siravedha according to specific clinical indications.

Research should include:

- Clearly defined diagnostic criteria.
- Standardized procedural protocols.
- Appropriate comparison groups.
- Prespecified clinical outcomes.
- Laboratory monitoring where relevant.
- Systematic adverse-event documentation.
- Adequate follow-up.
- Appropriate statistical analysis.

The use of disease-specific outcomes would improve the reliability and clinical relevance of the findings.

9. Safety Considerations

Siravedha involves blood removal and therefore carries potential risks.

These include:

- Excessive bleeding.
- Hematoma.
- Vasovagal reactions.
- Dizziness.
- Hypotension.
- Infection.
- Anemia.
- Injury to surrounding structures.

The risk depends on the patient's condition, procedural technique and amount of blood removed.

9.1 Patient Selection

The procedure requires careful evaluation in patients with:

- Anemia.
- Bleeding disorders.
- Anticoagulant use.
- Significant cardiovascular disease.
- Hypotension.
- Dehydration.
- Pregnancy.
- Poor general condition.
- Other conditions that increase procedural risk.

The presence of these factors requires appropriate medical evaluation.

Siravedha should not be used as a substitute for emergency treatment or established management of serious medical conditions.

9.2 Monitoring

Clinical monitoring should include assessment of the patient's condition before, during and after the procedure.

Where therapeutic phlebotomy is used for a modern medical indication, monitoring should follow the relevant disease-specific protocol.

The amount and frequency of blood removal should not be determined by generalized Ayurvedic recommendations without appropriate clinical evaluation.

10. Discussion

Siravedha represents an important component of classical Ayurvedic para-surgical practice.

The classical approach emphasizes the relationship between Rakta, Dosha and disease manifestation.

It also recognizes the importance of patient selection, anatomical considerations and procedural precautions.

Modern therapeutic phlebotomy provides a more disease-specific framework for blood removal.

Its clinical applications are supported by established physiological and pathological mechanisms in selected conditions.

The comparison demonstrates that both approaches involve therapeutic blood removal, but their indications and theoretical foundations differ.

The presence of a shared procedure does not establish equivalence in therapeutic purpose.

A critical distinction must therefore be maintained between:

- Classical Ayurvedic indications.
- Modern disease-specific indications.
- Traditional therapeutic rationale.
- Contemporary clinical evidence.

- Established safety requirements.

The evidence supporting therapeutic phlebotomy in hereditary hemochromatosis or polycythemia vera should not be generalized to all conditions described in Ayurvedic literature.

Similarly, classical descriptions of Siravedha should not be interpreted as proof of modern clinical effectiveness.

The integration of Siravedha into contemporary clinical practice requires appropriate diagnosis, procedural training, risk assessment and outcome monitoring.

Further clinical research may help clarify its role in specific Ayurvedic indications.

11. Limitations

The present article is a narrative review and does not include original clinical observations.

It does not establish treatment success rates, comparative effectiveness or disease-specific outcomes for Siravedha.

The article does not represent a systematic review or meta-analysis.

The classical indications require verification against the specific edition of Sushruta Samhita and its commentary used for publication.

Further clinical research is required to determine the effectiveness and safety of Siravedha for individual disease conditions.

12. Conclusion

Siravedha is an important classical Ayurvedic para-surgical procedure described within the framework of Raktamokshana.

Its therapeutic application is based on classical concepts of Rakta, Dosha and disease-specific assessment.

Modern therapeutic phlebotomy is an established intervention for selected medical conditions, particularly disorders involving iron accumulation or increased red-cell mass.

Although both approaches involve blood removal, their indications, therapeutic objectives and evidentiary foundations differ.

The clinical application of Siravedha requires careful patient selection, anatomical knowledge, procedural safety and appropriate monitoring.

Available evidence should be interpreted according to the specific disease and treatment method.

Further well-designed clinical studies are required to establish the effectiveness, safety and contemporary clinical relevance of Siravedha for individual Ayurvedic indications.

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