



Review Article

KAMAL NAAL (MRUNALA) IN RAKTAVAHA SROTAS CHIKITSA: A CRITICAL REVIEW OF ITS NIGHANTU-BASED PHARMACODYNAMICS AND THERAPEUTIC POTENTIAL

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ABSTRACT

Mrunala (Kamal Naal), the stalk of *Padma (Nelumbo nucifera Gaertn.)*, holds a significant place in Ayurvedic therapeutics due to its cooling, haemostatic, and *Rakta-Pitta* pacifying properties. Although other parts of the lotus plant have been extensively described in classical texts and modern research, the medicinal importance of *Mrunala* remains comparatively less explored. Classical Ayurvedic Nighantus such as *Dhanvantari Nighantu*, *Kaiyadeva Nighantu*, *Bhavaprakasha Nighantu*, and *Raja Nighantu* describe *Mrunala* as a distinct therapeutic entity with *Madhura* and *Kashaya Rasa*, *Sheeta Virya*, and *Madhura Vipaka*, indicating its special affinity towards *Rakta Dhātu* and *Raktavaha Srotas*. Its pharmacodynamic properties suggest utility in conditions involving *Rakta Dushti*, bleeding disorders, inflammatory states, and *Pitta* aggravation. Contemporary studies have also identified phytoconstituents such as flavonoids, tannins, and polyphenols, supporting its antioxidant and anti-inflammatory potential. This review aims to highlight the therapeutic relevance of *Mrunala* in *Raktavaha Srotas* disorders and encourage further scientific exploration of this underutilized Ayurvedic drug.

INTRODUCTION

Ayurveda places significant emphasis on the maintenance of the integrity and purity of *Rakta Dhātu*, considering it one of the vital sustaining tissues of the body. *Rakta* is responsible not only for nourishment and maintenance of life but also for complexion, vitality, and proper functioning of various physiological processes. The channels responsible for the formation, transportation, and circulation of *Rakta* are collectively known as *Raktavaha Srotas*. According to Ayurvedic classics, vitiation of these channels results in numerous pathological conditions such as *Raktapitta*, *Visarpa*, *Daha*, *Rakta-Pradara*, *Vatarakta*, *Kushta* and other disorders characterized by bleeding, inflammation, burning sensation, and tissue degeneration. Since *Pitta Dosha* and *Rakta Dhātu* share an intimate *Ashraya-Ashrayi* relationship, therapeutic measures possessing *Pitta-Shamaka*, *Rakta prasadana*,

and *Raktasthapana* properties are considered fundamental in the management of *Raktavaha Srotas* disorders.

Among the various medicinal plants employed for *Rakta*-related diseases, *Padma (Nelumbo nucifera Gaertn.)* occupies a special place in Ayurvedic literature. Different parts of the lotus plant including the flower, seeds, rhizome, leaves, and stalk have been utilized for therapeutic purposes since ancient times. The lotus stalk, commonly known as *Kamal Naal* and referred to as *Mrunala* in Ayurvedic texts, is specifically described in several *Nighantus* for its cooling, haemostatic, thirst-relieving, and *Pitta*-pacifying actions. Despite its frequent mention in traditional literature, *Mrunala* has received considerably less scientific and academic attention compared to other parts of the lotus plant.

Classical *Nighantus* such as *Dhanvantari Nighantu*, *Kaiyadeva Nighantu*, *Madanapala Nighantu*, *Raja Nighantu*, and *Bhavaprakasha Nighantu* describe *Mrunala* as possessing *Madhura-Kashaya Rasa*, *Sheeta Virya*, and *Raktapitta-hara* properties. The *Kashaya Rasa* contributes to *Stambhana* and *Raktasthapana Karma*, while *Madhura Rasa* and *Sheeta Virya* facilitate *Pitta Shamana*, tissue nourishment, and alleviation of burning sensations. These pharmacodynamic

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attributes suggest a direct therapeutic relevance of *Mrunala* in diseases involving *Rakta Dushti* and *Raktavaha Srotas Vaigunya*.

Modern scientific investigations have identified the presence of bioactive compounds such as flavonoids, tannins, polyphenols, alkaloids, and antioxidants within lotus stalk tissues. Experimental studies have demonstrated antioxidant, anti-inflammatory, haemostatic, hepatoprotective, and cytoprotective activities that correlate with several of the traditional Ayurvedic indications. Furthermore, emerging research has highlighted the potential role of lotus stalk extracts in managing oxidative stress, vascular disorders, abnormal bleeding conditions, and certain gynecological ailments, thereby providing a contemporary scientific basis for its classical therapeutic applications.

Although numerous studies have focused on lotus flowers, seeds, and rhizomes, a comprehensive Ayurvedic review specifically addressing the role of *Mrunala* in *Raktavaha Srotas Chikitsa* remains lacking. The scattered references available in *Nighantu* literature have not been systematically compiled and critically analysed in the context of *Rakta*-related disorders. Therefore, the present review aims to critically evaluate the classical descriptions of *Mrunala* from major *Nighantus*, analyse its *Dravyaguna*-based pharmacodynamics, and explore its therapeutic significance in *Raktavaha Srotas Vikaras* through the integration of Ayurvedic principles and contemporary scientific evidence.

Such an approach may help revive interest in this traditionally valued yet underutilized medicinal drug and provide a foundation for future pharmacological, nutraceutical, and clinical research on *Kamal Naal* in *Rakta*-related disorders.

AIM AND OBJECTIVES

Aim

To critically review the *Nighantu*-based descriptions of *Mrunala* (*Kamal Naal*) and evaluate its therapeutic potential in the management of *Raktavaha Srotas* disorders through Ayurvedic principles and contemporary scientific evidence.

Objectives

1. To compile and analyze the classical references of *Mrunala* from major Ayurvedic *Nighantus*.
2. To study the *Dravyaguna* attributes of *Mrunala* and their pharmacodynamic implications.
3. To understand the concept of *Raktavaha Srotas* and its pathological manifestations according to Ayurveda.
4. To evaluate the role of *Mrunala* in the management of *Rakta*-related disorders described in Ayurvedic literature.

5. To correlate the classical properties of *Mrunala* with contemporary phytochemical and pharmacological findings.
6. To identify potential areas for future clinical and experimental research.

MATERIALS AND METHODS

Study Design

The present study is a narrative review conducted to critically evaluate the classical Ayurvedic descriptions of *Mrunala* (*Kamal Naal*) and its therapeutic relevance in *Raktavaha Srotas Chikitsa*.

Data Sources

Classical references pertaining to *Mrunala* were collected from major Ayurvedic *Nighantus*, including:

- *Dhanvantari Nighantu*
- *Raja Nighantu*
- *Kaiyadeva Nighantu*
- *Bhavaprakasha Nighantu*
- *Madanapala Nighantu*

Relevant references from *Brihatrayi* literature were also consulted wherever necessary for understanding the concepts of *Rakta Dhātu*, *Raktavaha Srotas*, and *Rakta*-related disorders.

Contemporary scientific literature was reviewed through electronic databases including PubMed, Google Scholar, Scopus, and Science Direct.

Method of Analysis

The collected data were systematically compiled and categorized under:

1. Nomenclature and synonyms
2. *Nighantu* references
3. *Rasa Panchaka*
4. *Karma*
5. Indications
6. Relevance in *Raktavaha Srotas* disorders
7. Contemporary pharmacological evidence

Comparative analysis was performed to identify recurring pharmacodynamic attributes and therapeutic indications across different *Nighantus*.

OBSERVATIONS

Observation and Result 1: Nomenclature and Synonyms

The review of major *Nighantus* revealed that *Mrunala* is consistently recognized as a distinct anatomical part of the lotus plant and is differentiated from *Bisa* (rhizome). Various synonyms such as *Mrunala*, *Padma Nala*, *Kamala Nala*, and *Nalina Nala* were identified across classical texts. Despite variations in nomenclature, all terms denote the fibrous stalk of *Nelumbo nucifera*. The consistency of these references across different *Nighantus* indicates the well-established medicinal identity of *Mrunala* in

Ayurvedic literature and supports its independent therapeutic significance.

S.No.	Synonym	Literal Meaning / Significance	Source
1	<i>Mrunala</i>	Fibrous lotus stalk	<i>Dhanvantari Nighantu</i> [1]
2	<i>Padma Nala</i>	Stalk of <i>Padma</i>	<i>Raja Nighantu</i> [2]
3	<i>Kamala Nala</i>	Lotus stalk	<i>Kaiyadeva Nighantu</i> [3]
4	<i>Nalina Nala</i>	Stalk of lotus plant	<i>Bhavaprakasha Nighantu</i> [4]
5	<i>Bisa-bheda Mrunala</i>	Distinct from <i>Bisa</i> (rhizome)	<i>Raja Nighantu</i> [2]

Observation and Result 2: *Nighantu* References^[1-5]

Analysis of *Nighantu* literature demonstrated remarkable uniformity regarding the therapeutic attributes of *Mrunala*. Most texts describe it as *Pittahara*, *Dahahara*, *Trishnahara*, and *Raktapittahara*. The recurrence of these actions across multiple lexicons suggests a strong traditional consensus regarding its role in the management of disorders associated with aggravated *Pitta* and vitiated *Rakta*. The repeated emphasis on cooling and haemostatic properties highlights its importance among drugs acting on *Rakta-Pitta* pathology.

Literary review revealed that *Mrunala* is described as a derivative of *Padma* (*Nelumbo nucifera*) in various *Nighantus*. Although the extent of description varies among lexicons, all references indicate a close association with *Sheeta*, *Pittashamana* and *Rakta*-related therapeutic actions.

Table 1: *Nighantu* References of *Mrunala*

<i>Nighantu</i>	<i>Varga</i>	Reference to <i>Mrunala</i>	Important Observations
<i>Dhanvantari Nighantu</i>	<i>Padma</i> -related group	Mentioned among lotus derivatives	Cooling and <i>Pittahara</i> attributes
<i>Raja Nighantu</i>	<i>Padmadi Varga</i>	Synonyms and therapeutic properties described	Association with <i>Daha</i> and <i>Raktapitta</i>
<i>Kaiyadeva Nighantu</i>	<i>Pushpa</i> -related description	Included under <i>Padma</i> derivatives	<i>Sheeta</i> and <i>Trishnahara</i> action
<i>Bhavaprakasha Nighantu</i>	<i>Pushpa Varga</i>	Lotus derivatives described collectively	<i>Pitta-Rakta</i> pacifying properties
<i>Priya Nighantu</i>	<i>Pushpa Varga</i>	Distinguishes <i>Mrunala</i> from <i>Bisa</i> .	Useful for drug identification

Observation and Result 3: *Rasa Panchaka*^[6]

Comparative analysis of *Rasa Panchaka* revealed that *Madhura* and *Kashaya Rasa* are the most consistently reported taste attributes of *Mrunala*. *Sheeta Virya* was uniformly documented across all reviewed texts, while *Madhura Vipaka* was mentioned wherever *Vipaka* was specified. The predominance of *Madhura-Kashaya Rasa* and *Sheeta Virya* indicates a pharmacodynamic profile characterized by cooling, stabilizing, and haemostatic effects. These attributes collectively suggest a therapeutic affinity toward *Rakta Dhatu* and *Pitta Dosha*.

Reference	<i>Rasa</i>	<i>Guna</i>	<i>Virya</i>	<i>Vipaka</i>
<i>Dhanvantari Nighantu</i>	<i>Madhura, Kashaya</i>	—	<i>Sheeta</i>	Not specified
<i>Raja Nighantu</i>	<i>Madhura, Kashaya</i>	—	<i>Sheeta</i>	Not specified
<i>Kaiyadeva Nighantu</i>	<i>Madhura, Kashaya</i>	—	<i>Sheeta</i>	Not specified
<i>Bhavaprakasha Nighantu</i>	<i>Madhura, Kashaya</i>	<i>Laghu</i>	<i>Sheeta</i>	<i>Madhura</i>
<i>Madanapala Nighantu</i>	<i>Madhura, Kashaya</i>	—	<i>Sheeta</i>	Not specified

Observation and Result 4: *Karma*

Evaluation of classical descriptions showed that *Pittahara* and *Dahahara Karma* were reported in almost all reviewed *Nighantus*. *Raktapittahara*, *Trishnahara* and *Raktaprasadana* actions were also frequently documented. The distribution of these *Karmas* demonstrates a clear trend toward alleviation of symptoms associated with heat, inflammation, excessive thirst, and bleeding manifestations. The observed therapeutic spectrum further supports the traditional use of *Mrunala* in *Rakta-Pitta* dominant conditions^[6].

Karma	D.N.	R.N.	K.N.	B.P.N.	M.P.N.
<i>Pittahara</i>	✓	✓	✓	✓	✓
<i>Raktapittahara</i>	✓	✓	✓	✓	—
<i>Dahahara</i>	✓	✓	✓	✓	✓
<i>Trishnahara</i>	✓	—	✓	✓	✓
<i>Raktaprasadana</i>	—	✓	✓	—	—
<i>Stambhana</i>	—	✓	—	✓	—

(D.N.=Dhanvantari Nighantu; R.N.=Raja Nighantu; K.N.= Kaiyadeva Nighantu; B.P.N.=Bhavaprakasha Nighantu; M.P.N.=Madanapala Nighantu)

Observation and Result 5: Classical Indications

The collected data revealed that *Raktapitta*, *Daha*, *Trishna* and various *Pitta* disorders constitute the principal indications of *Mrunala* in classical literature^[6]. Most of the documented indications involve either direct vitiation of *Rakta* or pathological aggravation of *Pitta*. The predominance of these indications suggests that the drug was traditionally valued for its ability to restore equilibrium in conditions characterized by heat, bleeding, and inflammatory manifestations.

Observation and Result 6: Relevance in Raktavaha Srotas Disorders

Analysis of the classical properties of *Mrunala* demonstrated a strong relationship with the therapeutic requirements of *Raktavaha Srotas* disorders. *Kashaya Rasa* was associated with *Stambhana* and control of excessive bleeding, while *Madhura Rasa* contributed to nourishment and stabilization of *Rakta Dhatu*. *Sheeta Virya* was consistently linked with the mitigation of *Pitta*-induced heat and inflammation. Collectively, these attributes indicate a close pharmacodynamic association between *Mrunala* and disorders involving *Rakta Dushti* and *Raktavaha Srotas Vaigunya*.

In the *Charaka Samhita*^[7], *Stambhana* is the sixth and final *Upakrama*, often used when tissue depletion or weakness requires a stabilizing therapy. *Stambhan karma* is *Upakrama* of *Pitta vyadhis*- qualities required for *Stambhan karma* are mainly *Laghu*, *Sheeta*, *Manda*, *Kashaya* etc.

Table 6. Relevance of Mrunala in Raktavaha Srotas Disorders

Classical Property	Therapeutic Relevance in Raktavaha Srotas
<i>Kashaya Rasa</i>	Associated with <i>Stambhana</i> and control of excessive bleeding
<i>Madhura Rasa</i>	Supports <i>Rakta Dhatu</i> nourishment
<i>Sheeta Virya</i>	Counteracts <i>Ushna Guna</i> of aggravated <i>Pitta</i>
<i>Raktapittahara Karma</i>	Relevant in bleeding disorders
<i>Dahahara Karma</i>	Useful in burning sensations associated with <i>Rakta-Pitta</i> vitiation

Pushpa Varga and Raktavaha Srotas Relationship

Comparative analysis of *Pushpa Varga* drugs demonstrated the predominance of *Kashaya Rasa*, *Madhura Rasa* and *Sheeta Virya*. These attributes are repeatedly associated with *Rakta-Pitta* disorders.

Table 6: Comparison of Selected Pushpa Varga Drugs

Drug	Rasa Dominance	Virya	Major Action on Rakta
<i>Padma</i>	<i>Madhura-Kashaya</i>	<i>Sheeta</i>	<i>Raktapitta-hara</i>
<i>Utpala</i>	<i>Tikta-Kashaya</i>	<i>Sheeta</i>	<i>Daha-hara</i>
<i>Nagakesara</i>	<i>Kashaya</i>	<i>Sheeta</i>	<i>Rakta-stambhana</i>
<i>Japa</i>	<i>Kashaya</i>	<i>Sheeta</i>	<i>Rakta-sangrahaka</i>
<i>Mrunala</i>	<i>Madhura-Kashaya</i>	<i>Sheeta</i>	<i>Rakta-prasadana</i>

Observation and Result 7: Contemporary Pharmacological Evidence^[10]

Review of contemporary scientific literature demonstrated that lotus stalk contains flavonoids, polyphenols, tannins, alkaloids, and dietary fiber^[9]. Experimental studies have reported antioxidant, anti-inflammatory, hepatoprotective, cytoprotective, and haemostatic activities. Although the available evidence

remains limited compared to other parts of the lotus plant, the reported biological activities correspond closely with several therapeutic properties described in Ayurvedic literature. These findings provide preliminary scientific support for the traditional medicinal applications of *Mrunala*.

Table 7: Contemporary Pharmacological Evidence on Lotus Stalk (*Mrunala*)^[11]

Pharmacological Activity	Major Phytoconstituents Reported	Study Type
Antioxidant activity	Polyphenols, flavonoids	In-vitro
Anti-inflammatory activity	Flavonoids, alkaloids	Experimental
Hepatoprotective activity	Phenolic compounds	Animal study
Haemostatic potential	Tannins	Experimental
Cytoprotective activity	Antioxidant constituents	Experimental
Nutraceutical potential ^[12]	Fibre, polyphenols	Food science studies

DISCUSSION

The present review highlights the significant yet relatively underexplored role of *Mrunala* in Ayurvedic therapeutics. Classical *Nighantus* consistently describe *Mrunala* as a *Madhura-Kashaya*, *Sheeta Virya* drug possessing *Pittahara* and *Raktapittahara* properties. From a *Dravyaguna* perspective, *Kashaya Rasa* contributes to *Stambhana*, *Sandhana*, and *Raktastambhaka* actions, making the drug suitable for conditions involving abnormal bleeding. *Madhura Rasa* and *Madhura Vipaka* facilitate tissue nourishment, stabilization of *Rakta Dhatu*, and mitigation of excessive *Pitta*.

The concept of *Raktavaha Srotas* encompasses the channels responsible for the formation, circulation, and maintenance of *Rakta Dhatu*. Classical Ayurvedic texts identify *Yakrit* and *Pleeha* as the *Mula* of these channels and emphasize the intimate relationship between *Rakta* and *Pitta*. Consequently, disorders such as *Raktapitta*, *Rakta-Pradara*, *Daha*, *Visarpa*, *Vatarakta* and various inflammatory conditions often require therapeutic agents capable of simultaneously pacifying *Pitta* and preserving the integrity of *Rakta*.

The pharmacodynamic attributes of *Mrunala* align closely with these therapeutic requirements. Its *Sheeta Virya* counteracts the *Ushna* and *Tikshna* qualities of aggravated *Pitta*, while *Kashaya Rasa* promotes haemostasis and tissue stabilization. The repeated mention of *Raktapittahara* and *Dahahara Karma* across *Nighantus* further strengthens its relevance in *Rakta-Pitta* dominant disorders.

Modern scientific investigations provide additional support for these traditional observations. The presence of polyphenols, flavonoids, and tannins contributes to antioxidant and anti-inflammatory effects that may help reduce oxidative stress and inflammatory damage associated with various vascular and hematological conditions. The haemostatic potential attributed to tannin-rich plant materials may also explain the classical indications of *Mrunala* in bleeding disorders. Furthermore, recent interest in lotus stalk as a nutraceutical ingredient highlights its

potential role in preventive healthcare and functional nutrition.

Despite these promising observations, scientific studies specifically evaluating lotus stalk remain relatively scarce. Most available research focuses on lotus flowers, seeds, and rhizomes. Therefore, well-designed pharmacological, toxicological, and clinical studies are required to validate the traditional indications of *Mrunala* and establish its therapeutic efficacy in *Raktavaha Srotas* disorders.

CONCLUSION

Mrunala (*Kamal Naal*), the stalk of *Nelumbo nucifera*, occupies a unique position in Ayurvedic literature as a *Sheeta*, *Madhura-Kashaya*, *Pittahara*, and *Raktapittahara* drug. Classical *Nighantus* consistently describe its utility in conditions characterized by *Rakta* and *Pitta* vitiation, particularly *Raktapitta*, *Daha*, and *Trishna*. Analysis of its *Rasa Panchaka* and *Karma* demonstrates a strong pharmacodynamic affinity toward *Rakta Dhatu* and *Raktavaha Srotas*. Contemporary scientific studies reporting antioxidant, anti-inflammatory, hepatoprotective, and haemostatic activities provide preliminary support for these traditional claims. The available evidence suggests that *Mrunala* possesses considerable therapeutic potential in *Raktavaha Srotas Chikitsa*; however, further experimental and clinical investigations are necessary to fully establish its pharmacological profile and clinical utility. Renewed scientific attention to this traditionally valued yet underutilized drug may contribute to the development of novel Ayurvedic and nutraceutical interventions for *Rakta*-related disorders.

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