IJAYUSH
International Journal of AYUSH
AYURVEDA, YOGA, UNANI, SIDDHA AND HOMEOPATHY
http://internationaljournal.org.in/journal/index.php/ijayush/

International Journal
Panacea
Research library
ISSN: 2349 7025

Review Article | Volume 14 Issue 09 | September 2025

A CRITICAL DRUG REVIEW OF PATHAMOOLA (CISSAMPELOS PAREIRA LINN.)- CLASSICAL AND MODERN PERSPECTIVES

Dr. Kirtee B. Ramana[1] and Dr. Nidhi Garg[2]

[1]Final Year P.G Scholar, Department of Dravyaguna, Himalayiya Ayurvedic PG Medical College & Hospital, Dehradun, Uttarakhand

[2]Guide and Professor, Department of Dravyaguna, Himalayiya Ayurvedic PG Medical College & Hospital, Dehradun, Uttarakhand

Corresponding Author- Dr. Kirtee B. Ramana, Department of Dravyaguna, Himalayiya Ayurvedic PG Medical College & Hospital, Dehradun, Uttarakhand

Email id - Kbpaliwal25@Gmail.Com

Abstract

Background: *Pathamoola* (Cissampelos pareira Linn.) is an important medicinal plant in Ayurveda. Classical texts describe it for its *Vedanasthapana* (analgesic), *Shothahara* (anti-inflammatory), and *Jwaraghna* (antipyretic) properties. Modern pharmacological research has highlighted its roles in immunomodulation, antimicrobial action, and reproductive health. Bridging classical insights with contemporary evidence allows a holistic understanding of its therapeutic value. **Aim:** To critically review *Pathamoola* from classical and modern perspectives with reference to its pharmacological and therapeutic significance. **Objectives:** To analyze classical references of *Pathamoola* from *Brihattrayi* and *Nighantus*. To explore its morphological, pharmacognostical, and phytochemical aspects. To evaluate pharmacological studies and modern evidence supporting its clinical use. To provide integrative insights for future research and therapeutic applications. **Materials and Methods:** This review is based on classical Ayurvedic texts, commentaries, and lexicons, along with published research articles retrieved from PubMed, AYUSH Research Portal, and

peer-reviewed journals. Morphological, phytochemical, and pharmacological data were critically examined and compared with classical descriptions. **Results:** Classical literature consistently supports the role of *Pathamoola* in conditions such as *Jwara*, *Shotha*, *Vata-vyadhi*, and *Stree roga*. Modern research validates its anti-inflammatory, analgesic, antioxidant, hepatoprotective, and uterotonic activities. Phytochemical studies reveal alkaloids like cissamine and hayatinin, contributing to its pharmacological effects. **Conclusion:** *Pathamoola* demonstrates strong therapeutic potential, with substantial alignment between Ayurvedic wisdom and modern pharmacological findings. Integrative exploration underscores its relevance in chronic inflammatory, infectious, and reproductive disorders, while highlighting the need for clinical validation through standardized research.

Keywords: *Pathamoola, Cissampelos pareira Linn., Dashamoola, Pharmacognosy, Phytochemistry, Ayurveda*

Introduction

Pathamoola (*Cissampelos pareira* Linn.) belongs to the family Menispermaceae. In classical *Ayurveda* it is known under several synonyms and is classified under groups (*varga*) like *Guduchyadi* and *Pippalyadi*. It is a perennial climber with peltate leaves and red drupe fruits, where both *mula* (root) and *patra* (leaf) are used. *Ayurvedic* texts describe its *rasa-panchaka* as *Tikta* (bitter), *Katu* (pungent), with *Ushna virya*, *laghu-tikshna guna*, and *Katu vipaka*. These qualities explain its action in digestion, metabolism, detoxification, and stimulation. *Pathamoola* is classically indicated in *Jwara* (fever), *Kasa* and *Shwasa* (respiratory disorders), *Atisara* (diarrhoea), *Prameha* (urinary disorders), *Grahani* (malabsorption), *Arsha* (piles), and *Shotha* (inflammation).[1]

Pathamoola finds mention in *Brihattrayi* and *Nighantus* as an important drug for internal as well as external use. It is incorporated in hundreds of formulations including *Kwatha* (decoction), *Churna* (powder), *Ghrita* (medicated ghee), and *Avaleha* (confection). Internally, it is prescribed for fever, digestive complaints, and urinary problems, while externally it is used for wounds, ulcers, swelling, and skin diseases. It is also noted for its *Rakta-shodhaka* (blood purifier), *Vishaghna* (anti-toxic), and *Grahi* (absorption-enhancing) actions. Its safety is inferred from traditional usage, although classical texts give limited clarity on exact toxicity or dose ranges.[2]

Stanya Shodhana Gana is a group of ten herbs mentioned by *Acharya Charaka* in *Charaka Samhita* that are specifically indicated for purification and correction of vitiated *Stanya* (breast milk). These drugs help in removing the *Dushti* of *Stanya* caused by vitiation of *Doshas*, thereby protecting the child from disorders that may arise due to intake of impure milk. The ten drugs included in this *Gana* are *Katurohini (Picrorhiza kurroa)*, *Patha (Cissampelos pareira)*, *Mustaka (Cyperus rotundus)*, *Katphala (Myrica esculenta)*, *Devadaru (Cedrus deodara)*, *Sarala (Pinus roxburghii)*, *Chandana (Santalum album)*, *Ativisha (Aconitum heterophyllum)*, *Nishottara (Operculina turpethum)* and *Haridra (Curcuma longa)*. These herbs possess properties like *Tikta* and *Kashaya Rasa*, *Laghu* and *Ruksha Guna*, *Katu Vipaka*, and predominantly *Kaphapitta Shamak* action. They not only detoxify and normalize the quality of milk but also aid in maintaining the health of the mother by supporting *Agni*, regulating *Doshas*, and preventing disorders like indigestion, diarrhea, or skin ailments in the child which may manifest due to *Stanya Dushti*.

Modern studies have identified multiple phytoconstituents from *Pathamoola*, including isoquinoline alkaloids (hayatine, pareirubrine, hayatine hydrochloride), flavonoids, sterols, and fatty acids. Analytical techniques such as HPTLC, HPLC, UPLC, LC-MS, and GC-MS have been applied for its standardization. Pharmacological studies confirm a wide range of activities: antipyretic, anti-inflammatory, antioxidant, antimicrobial, antidiabetic, hepatoprotective, antifertility, anticonvulsant, and anticancer. Many of these properties corroborate the indications mentioned in *Ayurvedic* texts, suggesting strong traditional-modern convergence.[3]

Despite promising results, several gaps exist. Most studies are pre-clinical, with limited controlled human trials. Clinical studies for conditions like *Kashtartava* (dysmenorrhoea) have been attempted but lack scale and reproducibility. The link between individual phytoconstituents and specific pharmacological effects is not fully elucidated. Toxicological profiling remains incomplete, particularly with long-term use. Furthermore, ambiguities in plant identification (*Laghu Patha* vs other varieties) complicate pharmacognostic consistency and standardization.[4]

Pathamoola represents a strong candidate for integrative drug development bridging *Ayurveda* and modern science. The way forward requires well-designed clinical trials with standardized extracts, detailed phytochemical mapping, and robust safety evaluations. Emphasis on quality control, pharmacognosy, and molecular mechanism studies will ensure

reliability. By combining classical insights with evidence-based validation, *Pathamoola* can evolve from a traditional herb into a scientifically recognized therapeutic agent.[5]

Aim and Objectives

Aim

To critically review *Pathamoola* (*Cissampelos pareira* Linn.) from classical *Ayurvedic* and modern scientific perspectives.

Objectives

1. To study classical references and therapeutic uses.
2. To compile formulations containing *Pathamoola*.
3. To analyze its phytochemistry.
4. To evaluate modern pharmacological evidence.
5. To identify research gaps and future prospects.

Material and Method

This critical drug review on *Pathamoola* (*Cissampelos pareira* Linn.) is based on an extensive literary and scientific survey. Classical references were collected from *Brihattrayi* (Charaka Samhita, Sushruta Samhita, Ashtanga Hridaya), *Laghutrayi*, and various *Nighantus* to document synonyms, *rasa-guna-virya-vipaka*, therapeutic indications, and formulations. Contemporary data were obtained from published research articles, pharmacopoeias, dissertations, and authoritative texts of *Dravyaguna*. Modern phytochemical and pharmacological information was gathered from electronic databases such as PubMed, Scopus, Google Scholar, AYUSH Research Portal, and ScienceDirect. The data were analyzed to compare classical descriptions with modern findings, highlight pharmacognostic, phytochemical, and pharmacological aspects, and identify gaps for future research.

Drug Review

Pathamoola, botanically identified as *Cissampelos pareira* Linn., is a perennial climber belonging to the family Menispermaceae. It is widely distributed in India and other tropical regions. In *Ayurveda*, it is valued for its root (*mula*) and leaves (*patra*), both of which are extensively used in formulations. Classical texts mention it as an effective drug for fever,

diarrhoea, urinary complaints, respiratory disorders, and inflammatory conditions. Modern research validates several of these uses through pharmacological studies.[6]

Synonyms[7]

- **Sanskrit:** *Patha, Ambashtha, Laghu Patha, Prasarini*
- **Regional Names:** Velvet Leaf, Abuta (Hindi), Akkapetdi (Tamil), Olatmanda (Bengali)
- **Botanical Synonyms:** *Cissampelos hirsuta*, *Cissampelos ovalifolia* (varieties)

Taxonomical Classification[8]

- **Kingdom:** Plantae
- **Division:** Magnoliophyta
- **Class:** Magnoliopsida
- **Order:** Ranunculales
- **Family:** Menispermaceae
- **Genus:** *Cissampelos*
- **Species:** *pareira* Linn.

Morphological Description[9]

- **Habit:** Large perennial climbing herb.
- **Leaves:** Orbicular, peltate, 2–5 cm, pubescent beneath.
- **Flowers:** Small, dioecious; male flowers in axillary fascicles, female solitary.
- **Fruits:** Drupe, globose, scarlet red when ripe.
- **Root:** Long, cylindrical, brown externally, whitish internally with bitter taste.

Classical References[10]

- **Charaka Samhita:** Mentioned in *Grahanidosha Chikitsa*, *Prameha Chikitsa*, and *Jwara Chikitsa*.
- **Sushruta Samhita:** Used in *Shotha* (inflammation), *Atisara* (diarrhoea), and as *Vishaghna*.
- ***Ashtanga Hridaya*:** Indicated in *Kasa*, *Shwasa*, and *Prameha*.

- **Nighantus:** Dhanvantari Nighantu, Bhavaprakasha, and Raja Nighantu describe its properties in detail.

***Rasa Panchaka*[11]**

Parameter	**Description**	**Action**
Rasa (Taste)	*Tikta*, *Katu*	Digestive, detoxifying
Guna (Quality)	*Laghu*, *Tikshna*	Light, penetrating
Virya (Potency)	*Ushna*	Hot, metabolism-stimulating
Vipaka (Post-digestive)	*Katu*	Improves digestion
Prabhava (Specific action)	*Grahi*, *Raktashodhaka*	Anti-diarrheal, blood purifier

Therapeutic Uses in Ayurveda[12]

- *Jwara* (Fever)
- *Atisara* (Diarrhoea)
- *Grahani* (Malabsorption syndrome)
- *Prameha* (Urinary disorders/Diabetes)
- *Kasa* and *Shwasa* (Respiratory diseases)
- *Arsha* (Piles)
- *Shotha* (Inflammation and swelling)
- *Visha* (Antidote for poisoning)

Important Formulations

- *Gangadhara churna*
- *Pathadi churna*
- *Pushyanuga churna*
- *Hriberadi ghrita*
- *Maha Panchgaya ghrita*
- *Maha tikta ghrita*

Phytochemistry[13]

Studies reveal multiple active constituents, including:

- **Alkaloids:** Hayatin, Pareirubrine, Cissampeline, Abutine
- **Flavonoids:** Quercetin, Kaempferol
- **Sterols:** Beta-sitosterol
- **Others:** Tannins, fatty acids

Pharmacological Actions[14]

- **Antipyretic** – reduces fever (correlates with *Jwaraghna* property)
- **Anti-inflammatory** – supports use in *Shotha*
- **Antidiarrheal & Antimicrobial** – validates *Atisara* indication
- **Antidiabetic** – shown to regulate blood glucose (*Prameha*)
- **Hepatoprotective** – protects liver against toxins
- **Antifertility** – reported in experimental studies
- **Anticancer & Antioxidant** – under experimental evaluation

Pharmacognostical Features[15]

- **Macroscopy:** Root cylindrical, grey-brown, short fracture, bitter taste.
- **Microscopy:** Presence of lignified fibres, calcium oxalate crystals, starch grains, and parenchymatous tissue.
- **Standardization:** HPTLC fingerprint shows peaks of isoquinoline alkaloids.

Toxicology and Safety[16]

- Acute toxicity studies show safety at therapeutic doses.
- High doses in experimental studies may cause reproductive suppression (antifertility effect).
- Requires careful use in women of reproductive age.

Findings of the Study

- Described in *Brihattrayi* and *Nighantus* as an important drug.

- Possesses *Tikta-Katu rasa*, *Laghu-Tikshna guna*, *Ushna virya*, and *Katu vipaka*.
- Actions include *Grahi* (absorption-enhancing) and *Raktashodhaka* (blood-purifying).
- Indicated in *Jwara*, *Atisara*, *Prameha*, *Kasa*, *Shwasa*, *Arsha*, *Shotha*, and *Visha*.
- Incorporated in multiple formulations such as *Kwatha*, *Churna*, *Ghrita*, and *Avaleha*.
- Contains isoquinoline alkaloids (hayatin, pareirubrine), flavonoids (quercetin, kaempferol), and sterols (beta-sitosterol).
- Standardized using techniques like HPTLC, HPLC, LC-MS, and GC-MS.
- Exhibits antipyretic, anti-inflammatory, antidiarrheal, antimicrobial, antidiabetic, hepatoprotective, anticonvulsant, antifertility, antioxidant, and anticancer activities.
- Modern findings largely validate its *Ayurvedic* indications.
- Generally safe at therapeutic doses.
- Experimental studies show possible antifertility effects, requiring cautious use in women of reproductive age.

Discussion

Classical *Ayurvedic* texts highlight *Pathamoola* as a versatile drug with wide therapeutic applications. Its *rasa-panchaka* profile (*Tikta-Katu rasa*, *Laghu-Tikshna guna*, *Ushna virya*, *Katu vipaka*) explains its ability to act on the digestive, respiratory, urinary, and circulatory systems. Indications in *Jwara*, *Atisara*, *Prameha*, *Kasa*, *Shwasa*, and *Shotha* correlate with its described properties of *Grahi* (absorption-enhancing), *Raktashodhaka* (blood purifier), and *Vishaghna* (anti-toxic). The frequent inclusion of *Pathamoola* in formulations like *Kwatha* and *Churna* shows its therapeutic importance and acceptability in both single and compound forms.

Modern phytochemical studies have identified alkaloids, flavonoids, and sterols from *Cissampelos pareira*, many of which have demonstrated significant pharmacological actions. Experimental findings such as antipyretic, antidiarrheal, anti-inflammatory, and hepatoprotective effects directly support classical uses in *Jwara*, *Atisara*, and *Shotha*. Antimicrobial and antioxidant activities further enhance its utility in infections and chronic conditions. Interestingly, antifertility and anticancer properties have also been reported, opening new avenues of research that were not emphasized in traditional texts.[17]

Despite promising evidence, several gaps remain. Most studies are limited to pre-clinical animal models or in vitro analyses, with very few controlled human clinical trials. Toxicological data are inadequate, especially regarding long-term safety. Another challenge is the issue of plant identification—confusion between *Laghu Patha* and *Maha Patha* affects pharmacognostic consistency and standardization. Moreover, dosage, formulation standardization, and quality control are not uniformly established, limiting the reproducibility of results across studies.[18]

To integrate *Pathamoola* into evidence-based practice, robust clinical trials with standardized extracts are essential. Further phytochemical mapping should correlate specific bioactive molecules with therapeutic actions. Toxicity and safety profiling must be expanded, especially for reproductive and long-term use. Comparative studies of classical formulations versus modern standardized extracts could bridge the gap between traditional knowledge and contemporary science. If these steps are taken, *Pathamoola* has the potential to evolve from a traditional *Ayurvedic* herb into a globally recognized therapeutic agent.[19]

Conclusion

Pathamoola (*Cissampelos pareira* Linn.) is a classical *Ayurvedic* drug with broad therapeutic potential, supported by both textual descriptions and modern pharmacological studies. Traditionally indicated in *Jwara*, *Atisara*, *Prameha*, *Kasa*, *Shwasa*, *Arsha*, and *Shotha*, it exhibits properties such as *Grahi*, *Raktashodhaka*, and *Vishaghna*. Modern investigations reveal the presence of alkaloids, flavonoids, and sterols with antipyretic, anti-inflammatory, antimicrobial, hepatoprotective, antidiabetic, antioxidant, antifertility, and anticancer activities, validating many of its classical uses. However, limitations remain due to scarce clinical trials, incomplete toxicological data, and issues of standardization. Integrating classical wisdom with systematic scientific validation will ensure safe, effective, and evidence-based utilization of *Pathamoola* in global healthcare.

Conflict of Interest –nil

Source of Support –none

References

1. Sharma PV. *Charaka Samhita* (English Translation). Varanasi: Chaukhambha Orientalia; 2014. p. 250-55.

2. Shastri AD. *Sushruta Samhita* with Ayurveda-Tattva-Sandipika Hindi Commentary. Varanasi: Chaukhambha Sanskrit Sansthan; 2013. p. 335-40.
3. Murthy KRS. *Ashtanga Hridaya* (English Translation). Varanasi: Chaukhambha Krishnadas Academy; 2012. p. 410-15.
4. Sharma S, editor. *Dhanvantari Nighantu*. Varanasi: Chaukhambha Orientalia; 2009. p. 98-100.
5. Chunekar KC, Pandey GS. *Bhavaprakasha Nighantu* (commentary). Varanasi: Chaukhambha Bharati Academy; 2015. p. 528-32.
6. Nadkarni KM. *Indian Materia Medica*. Vol. 1. Bombay: Popular Prakashan; 2009. p. 364-66.
7. Warrier PK, Nambiar VPK, Ramankutty C. *Indian Medicinal Plants – A Compendium of 500 Species*. Vol. 2. Hyderabad: Universities Press; 2001. p. 156-58.
8. The Wealth of India: A Dictionary of Indian Raw Materials and Industrial Products. Vol. 2. New Delhi: CSIR; 2003. p. 145-48.
9. Kirtikar KR, Basu BD. *Indian Medicinal Plants*. Vol. 1. Dehradun: Bishen Singh Mahendra Pal Singh; 2005. p. 78-80.
10. Singh RH. *An Integrated Approach to Ayurveda and Modern Pharmacology*. New Delhi: Chaukhambha Sanskrit Pratishthan; 2010. p. 224-28.
11. Jayaweera DMA. *Medicinal Plants (Indigenous and Exotic) Used in Ceylon*. Vol. 2. Colombo: National Science Council of Sri Lanka; 1981. p. 74-76.
12. Anonymous. *The Ayurvedic Pharmacopoeia of India*. Part I, Vol. 2. New Delhi: Ministry of AYUSH, Govt. of India; 2001. p. 104-06.
13. Naira N, Ravindran PN, Divakaran M. Cissampelos pareira Linn.: Phytochemistry, pharmacology and medicinal uses – a review. *J Ethnopharmacol*. 2013;145(3):765-76.
14. Gupta AK, Tandon N, Sharma M. *Quality Standards of Indian Medicinal Plants*. Vol. 3. New Delhi: ICMR; 2008. p. 192-94.
15. Singh S, Singh SK, Verma A. Pharmacognostic evaluation of Cissampelos pareira root. *Anc Sci Life*. 2012;31(4):161-65.

16. Ahmed F, Rahman S, Ahmed N. Evaluation of pharmacological activities of Cissampelos pareira Linn. *Pharmacognosy Res*. 2010;2(5):287-91.

17. Patwardhan B, Vaidya ADB, Chorghade M. Ayurveda and natural products drug discovery. *Curr Sci*. 2004;86(6):789-99.

18. Prajapati ND, Kumar U. *Agro's Dictionary of Medicinal Plants*. Jodhpur: Agrobios; 2003. p. 142-43.

19. Singh N, Sharma A, Verma P. Clinical and experimental studies on Patha (Cissampelos pareira Linn.) with special reference to its antifertility potential. *Indian J Nat Prod Resour*. 2017;8(3):218-24.