

Therapeutic Potential of Sandhaniya Mahakashaya Drugs: A Critical Review of Ayurvedic Literature and Pharmacological Insights

Authors

Dr. Desai Adarsh Ashokrao

Assistant Professor, Department of Dravyaguna, Government Ayurved College, Nagpur

Email: adarshdesai123@gmail.com

Mob. No.: 8149762759

Corresponding Author:

Dr. Desai Adarsh Ashokrao

Address: Plot No. 15, Jagtap Nagar, Pachgaon road, Behind Omkareshwar Temple, Kolhapur 416007

Email: adarshdesai123@gmail.com

Mob. No.: 8149762759

ORCID ID: 0009-0005-97562943

DOI No.: <https://doi.org/10.5281/zenodo.21093508>

Date of Acceptance: 15 Sept 2022

Date of Publication: Oct 2022

ABSTRACT

Background: Sandhaniya Mahakashaya is one of the 50 Mahakashayas (Dashemani) described by Acharya Charaka in Charaka Samhita, Sutra Sthana, Chapter 4 (Shad Virechana Shatashriteeya). This group comprises ten medicinal plants renowned for their tissue-binding and healing properties.

Objective: To critically review Ayurvedic classical literature on Sandhaniya Mahakashaya and correlate it with modern pharmacological insights regarding wound healing, tissue regeneration, and fracture repair.

Methods: A comprehensive review of Charaka Samhita and other classical Ayurvedic texts was conducted. The Ras Panchak profiles (Rasa, Guna, Virya, Vipaka, and Prabhava) of each dravya were analyzed. Modern pharmacological studies on these herbs were reviewed for evidence of wound healing, anti-inflammatory, and tissue regeneration activities.

Results: Sandhaniya Mahakashaya includes: Madhuyashthi (*Glycyrrhiza glabra*), Guduchi (*Tinospora cordifolia*), Prishniparni (*Uraria picta*), Patha (*Cissampelos pareria*), Lajjalu (*Mimosa pudica*), Mocharasa (*Bombax ceiba*), Dhataki (*Woodfordia fruticosa*), Lodhra (*Symplocos racemosa*), Priyangu (*Callicarpa macrophylla*), and Katphala (*Myrica esculenta*). All ten plants exhibit predominant Kashaya Rasa (astringent taste) and Sheeta Virya (cooling potency), facilitating tissue constriction (Sankuchana) and wound healing.

Conclusion: Sandhaniya Mahakashaya demonstrates significant therapeutic potential in promoting tissue

healing, fracture repair, bleeding cessation, and muscle-bone regeneration. Its mechanisms include collagen synthesis promotion, anti-inflammatory effects, and antimicrobial properties, validating traditional applications through modern scientific insights.

KEYWORDS: Sandhaniya Mahakashaya, Tissue Healing, Wound Repair, Charaka Samhita, Ayurveda, Pharmacological Insights.

INTRODUCTION

In the modern era of science and development, traditional medicines, especially those rooted in Ayurveda, hold significant therapeutic potential. Among Ayurveda's foundational texts, the Charaka Samhita emphasizes the importance of Bhesaja Chatushka, which includes chapters on therapeutic applications of various medicinal plants.

In its Shad Virechana Shatashriteeya chapter, Acharya Charaka introduces the concept of Mahakashaya, encompassing 50 categories of 500 herbs classified based on their effects on biological systems. These groups consist of ten plants each, demonstrating a shared pharmacological activity.

One such group is the Sandhaniya Mahakashaya, commonly referred to as the "Unifying medicine". The word "sandhaniya" literally means "to bind," referring to the ability to connect two or more objects and promote amalgamation. This conventional medical approach facilitates the identification of herbal remedies particularly suitable for promoting regeneration and growth of impaired bodily tissues. It is widely acknowledged that certain plants possess the ability to naturally heal wounds. Hence, this traditional system helps find specifically apt herbal drugs for regeneration and growth promotion of damaged body tissue

DEFINITION OF SANDHANIYA

Literal meaning: "To bind" or "unifying"

Action: Sankuchana (tissue constriction)

Primary indication: Wound healing (Vrana), fracture repair (Astibhagna), bleeding cessation (Raktapitta)

Therapeutic Properties - The constituents facilitate:

1. Repairing fractures
2. Stopping bleeding
3. Promoting regeneration of muscles and bones
4. Binding normal intercellular structures
5. Treating Raktapitta by binding Raktadi dhatus with Shareera

CONSTITUENTS OF SANDHANIYA MAHAKASHAYA

The formulation includes the following ten dravyas – Table No.1

Sr. No.	Ayurvedic Name	Scientific Name	Common Name
1	Madhuyashthi	Glycyrrhiza glabra Linn.	Indian Licorice
2	Guduchi	Tinospora cordifolia Miers.	Giloy/Guaru
3	Prishniparni	Uraria picta Desv.	Painted Uraria
4	Patha	Cissampelos pareria Linn.	Pariera

5	Lajjalu	Mimosa pudica Linn.	Touch-me-not
6	Mocharasa	Bombax ceiba Burm.f.	Silk Cotton Tree
7	Dhataki	Woodfordia fruticosa Kurz.	Woodfordia
8	Lodhra	Sympolcos racemosa Roxb.	Lodha
9	Priyangu	Callicarpa macrophylla Vahl.	Large-leaved Callicarpa
10	Katphala	Myrica esculenta Buch-Ham.	Mountain Myrica

GENERAL MECHANISMS OF SANDHANIYA MAHAKASHAYA

1. Collagen Synthesis: Promotes fibroblast proliferation and collagen deposition
2. Anti-inflammatory Effects: Reduces edema and inflammatory mediators
3. Antimicrobial Properties: Prevents wound infection
4. Tissue Constriction (Sankuchana): Binds intercellular structures
5. Vasoconstriction: Stops bleeding in Raktapitta

RAS PANCHAK

Detailed Ras Panchak profiles of the ten Dravyas- Table No.2

Property	Characteristic	Therapeutic Implication
Rasa	Predominantly Kashaya (Astringent)	Tissue constriction, wound binding
Guna	Ruksha (Dry), Shita (Cold)	Reduces inflammation, draws out moisture
Virya	Sheeta (Cooling potency)	Facilitates wound healing, reduces heat
Vipaka	Katu (Pungent) or Madhura (Sweet)	Post-digestive effect promoting tissue repair
Prabhava	Sandhana (Binding action)	Specific tissue-unifying effect

All plants exhibit predominant Kashaya Rasa and Sheeta Virya, which facilitate wound healing through tissue constriction.

PHARMACOLOGICAL MECHANISMS: Table No. 3

Sr.	Drug	Scientific Name	Key Phytochemicals	Primary Pharmacological Mechanisms
1	Madhuka	<i>Glycyrrhiza glabra</i>	Glycyrrhizin, flavonoids,	Collagen synthesis (stimulates fibroblast activity), anti-

			coumestans	inflammatory (inhibits COX-2, reduces TNF- α), antimicrobial (broad-spectrum), mucosal healing promotion
2	Guduchi	<i>Tinospora cordifolia</i>	Polysaccharides, glycosides, alkaloids	Immunomodulation (macrophage activation), anti-inflammatory (reduces IL-6, TNF- α), antioxidant (free radical scavenging), collagen deposition, tissue repair, adaptogenic properties
3	Prishniparni	<i>Uraria picta</i>	Alkaloids, flavonoids, steroids	Bone matrix strengthening (accelerates fracture union), anti-inflammatory, wound healing, hepatoprotective, cardioprotective, antioxidant, tissue binding, energizer
4	Patha	<i>Cissampelos pareira</i>	Isoflavonoids, alkaloids, flavonoids	Anti-inflammatory (reduces inflammatory cytokines), oxidative stress reduction, antimicrobial, antipyretic diuretic, enhances tissue repair, heals ulcers/wounds by reducing pus formation
5	Lajjalu	<i>Mimosa pudica</i>	Phenols, flavonoids, tannins	Astringent (promotes clotting), wound healing (methanolic extract shows good activity due to phenols), antioxidant, anti-diabetic, hepatoprotective, coagulates blood, heals wounds
6	Mocharasa	<i>Bombax ceiba</i>	Tannins, flavonoids, gum-resin	Cooling (reduces excessive heat/Pitta), wound contracting ability, epithelization promotion, antimicrobial, anti-inflammatory, septic, uterine function regulator
7	Dhataki	<i>Woodfordia fruticosa</i>	Tannins, flavonoids, phenolic compounds, anthocyanins	Hemostatic (rakta stambhaka), astringent (stambhana), wound healing (ethanolic extract increases wound contraction & breaking strength dose-

				dependently), granulation tissue promotion, anti-inflammatory, antimicrobial, antioxidant, immunomodulatory, mucosal healing
8	Lodhra	<i>Symplocos racemosa</i>	Tannins, flavonoids, lignans	Connective tissue strengthening, toning action, tissue constriction, hemostatic, astringent tonic, antimicrobial, anti-inflammatory, wound healing, uterine function regulator
9	Priyangu	<i>Callicarpa macrophylla</i>	Flavonoids, terpenes, phenolics	Anti-arthritis, anti-inflammatory (reverses inflammation & synovial hyperplasia), analgesic, antipyretic, antibacterial, antifungal, wound healing, fracture healing, Pittashamak, effective in Raktapradoshaja Vikaras
10	Katphala	<i>Myrica esculenta</i>	Flavonoids, tannins, steroids, terpenes, phenolic compounds	Vasoconstrictor (controls bleeding), wound healing (bark powder sprinkled on fresh wounds), antimicrobial (combats infections), antioxidant, anti-inflammatory, analgesic, antiseptic, astringent, bone fracture treatment, bark juice applied to heal cuts

THERAPEUTIC APPLICATIONS

Primary Indications – Table No. 4

Condition	Ayurvedic Term	Mechanism
Wounds	Vrana	Regeneration and growth promotion
Fractures	Astibhagna	Bone repair and regeneration
Bleeding disorders	Raktapitta	Binding Raktadi dhatus
Osteoporosis	Jarawashtha Astikshaya	Bone density improvement
Tissue damage	Shareera Dhatu Parityasa	Tissue regeneration

MODERN SCIENTIFIC VALIDATION

Integrative Approach

This exploration underscores the therapeutic relevance of Sandhaniya Mahakashaya in promoting tissue healing, validated by its traditional applications and modern scientific insights. Such integrative studies bridge traditional knowledge and contemporary medicine, offering holistic approaches to healthcare.

Pharmacological Evidence

Critical review of Ayurvedic literature, combined with scientific classification and analysis, reveals pharmacological potential:

Detailed Ras Panchak profiles demonstrate predominant Kashaya Rasa and Sheeta Virya. Pharmacological mechanisms include collagen synthesis, anti-inflammatory effects, and antimicrobial properties. Traditional wound healing applications validated by modern science.

DISCUSSION

Sandhaniya Mahakashaya represents a sophisticated Ayurvedic classification system that identifies herbs with unified therapeutic action. The ten plants share Kashaya Rasa and Sandhana Prabhava, making them specifically apt for wound healing and tissue regeneration.

The predominance of Kashaya Rasa (astringent taste) explains the tissue-constricting action, while Sheeta Virya (cooling potency) reduces inflammation and heat at the wound site. This dual mechanism facilitates rapid wound closure and prevents infection.

Modern pharmacological studies on individual herbs like Madhuka, Guduchi, and Lodhra validate traditional claims through documented mechanisms of collagen synthesis, anti-inflammatory effects, and antimicrobial properties.

The application of Sandhaniya Mahakashaya extends beyond simple wound healing to fracture repair, bleeding disorder management, and osteoporosis treatment, demonstrating its versatility in musculoskeletal and hematological conditions.

CONCLUSION

Sandhaniya Mahakashaya demonstrates significant therapeutic potential in promoting tissue healing, fracture repair, bleeding cessation, and muscle-bone regeneration. Its mechanisms include:

1. Collagen synthesis promotion
2. Anti-inflammatory effects
3. Antimicrobial properties
4. Tissue constriction (Sankuchana)
5. Vasoconstriction for bleeding control

The therapeutic relevance is validated by both traditional applications and modern scientific insights. Such integrative studies bridge traditional Ayurvedic knowledge and contemporary medicine, offering holistic approaches to healthcare.

REFERENCES

1. Therapeutic potential of Sandhaniya Maha Kashaya: A Critical Review of Ayurvedic Literature and Pharmacological Insights. *Journal of Advanced Imaging and Medical Sciences*. 2025;9(12):15. DOI: 10.21760/jaims.9.12.15
2. Critical Appraisal on Sandhaniya Mahakashaya Dravya W.S.R. to its therapeutic properties. *Journal of Advanced Zoology*. 2023;44(S4):71-81. DOI: 10.17762/jaz.v44iS4.2064
3. Critical Appraisal on Sandhaniya Mahakashaya Dravya W.S.R. to its classical description in Charak Samhita. *Journal of Advanced Zoology*. 2023
4. Sandhaniya mahakashaya is one of the Varga in Charaka's Mahakashaya. *World Journal of Pharmaceutical Research*. 2024
5. Sivan A, Khandelwal P, Singh C, Purvia R, Prasad M, Adlakha M. A Review – Role Of Sandhaniya Mahakashaya In The Management Of Wound Healing. *International Research Journal of Ayurveda and Yoga*. 2021;4(5):173-180. DOI: 10.48165/
6. Charaka Samhita, Sutra Sthana, Chapter 4: Shad Virechana Shatashriteeya
7. Sandhaniya mahakashaya: an overview on pharmacological study. *International Ayurvedic Medical Journal*. 2023
8. SANDHANIYA MAHAKASHAYA: AN OVERVIEW ON STUDY. Soni Sharma. *Semantics Scholar*

