



CRITICAL REVIEW OF PASHANBHINNA RASA ON ASHMARI WITH SPECIAL REFERENCE TO UROLITHIASIS

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ABSTRACT

Ayurveda, an ancient system of medicine, addresses numerous disorders related to the *Mutravaha Srotas* (urinary system), such as *Mutrakricchra* (dysuria), *Mutraghata* (obstructive uropathy), and *Mutrashmari* (urinary calculi). Among these, *Mutrashmari*, corresponding to urolithiasis in modern medicine, is one of the most common and distressing conditions, characterised by the formation of stones within the urinary tract. *Sushruta* identifies two primary mechanisms of stone formation: urine stagnation and supersaturation and crystallisation of urinary crystalloids. Urolithiasis affects approximately 12% of the global population, with a high recurrence rate, especially in males. This review aims to provide a comprehensive analysis of *Pashanbhinna Rasa*, a herbo-mineral formulation from the *Bhaishajya Ratnavali*, *Ashmari Prakaran*, assessing its efficacy in treating *Ashmari* (urolithiasis)—the study endeavours to bridge the knowledge gap in contemporary literature regarding this formulation. A thorough literature review focused on references to *Pashanbhinna Rasa* in classical Ayurvedic texts and modern scientific studies. The review highlights *Pashanbhinna Rasa's* multifaceted approach to managing urolithiasis. The herbo-mineral components of *Pashanbhinna Rasa* are believed to exert a synergistic effect, potentially dissolving stones, preventing their formation, and providing symptomatic relief. This critical review elucidates the potential of *Pashanbhinna Rasa* as an effective treatment for urolithiasis. While traditional Ayurvedic formulations offer

promising therapeutic benefits, further clinical studies are necessary to validate their efficacy scientifically. Establishing *Pashanbhinna Rasa* as a standardised treatment could integrate *Ayurvedic* wisdom with modern medical practice, offering a holistic approach to managing urolithiasis.

Keywords: *Ayurveda*, *Mutrashmari*, urolithiasis, *Pashanbhinna Rasa*, herbo-mineral formulation

INTRODUCTION

Ayurveda deals with many diseases of *Mutravaha Srotas*, such as *Mutrakricchra*, *Mutraghata*, *Mutrashmari*, etc. *Mutrashmari* is one of the most common and distressing maladies among urinary disorders. *Ashmari* (calculi) comprises two words, i.e., 'Ashma' and 'Ari.' 'Ashma' means a stone, and 'Ari' means enemy. *Ashmari* (calculi), specifically called *Moothrashmari* (urolithiasis), is a disease of *Moothravahasrotas* (urinary tract) and involves the formation of stones, resulting in severe pain as given by the enemy. *Ashmari* has been mentioned in all ancient texts of *Ayurveda*, but *Acharya Sushruta* has described it elaborately in *Sushruta Samhita*, including its medicinal and surgical management. *Acharya Sushruta* has mentioned the site, character and severity of pain and its aggravating and relieving factors.

Acharya Sushruta explains the two processes of stone formation. One is by the stagnation and supersaturation of the urine, and other by crystallisation of the crystalloids in the urine. Urolithiasis is a stone formed in the urinary tract (kidney, ureter, bladder, and urethra). Synonyms for Urolithiasis are renal stone/calculi. It is expected that 12% of the world's population experiences renal stones with a recurrence rate of 70-80% in males and 47- 60% in females.¹ Main features of *Ashmari* in *Ayurveda* are severe pain in the urinary bladder, scrotum, and penis.

dense and turbid urine, odour of urine like that of *Gomed* (hessonite stone), fever, body ache, anorexia and dysuria.² *Acharya Sushruta* explain that the pain of *Ashmari* aggravated by jumping, swimming, run-

ning, riding, walking, etc.³ Texts of modern medicine explain different types of pain stirring to varying sites according to the position of the calculi in the urinary tract as the main symptom. The pain may be fixed dull ache, colicky in nature or referred pain associated with profuse sweating, nausea, vomiting, increased pulse, and subnormal temperature. Hematuria (blood in urine) may be associated with urolithiasis.⁴ Without any existing reviews on *Pashanbhinna Rasa* across online platforms; this article aims to provide a comprehensive overview. Specifically, it examines *Pashanbhinna Rasa* within the framework of *Bhaishajya Ratnavali*. *Pashanbhinna Rasa* is one among such herbo-mineral formulations mentioned in *Bhaishajya Ratnavali*, *Ashmari Prakaran*, containing *Sudha Parada*, *Sudha Ghandhak*, *Sudha Shilajatu*, *Sweta Aparajita*, *Sweta Punarnava*, *Vasa*, *Bhudhatri*, and *Vishala*, as indicated in *Ashmari*. Therefore, this formulation is selected to observe the effects of *Pashanbhinna Rasa* in urolithiasis. The present study attempts to go through references to *Pashanbhinna Rasa* formulations in literature to have a better comparative understanding of these formulations in terms of their compositions and indications.

MATERIAL & METHODS

Numerous sources about *Pashanbhinna Rasa* were meticulously researched and analysed. Three references were deemed accurate and are delineated in the table below. Additionally, further insights from the *Bhaishajya Ratnavali* have been elucidated extensively, detailing its ingredients and their activities contributing to the treatment of *Ashmari*, commonly known as Urolithiasis.

MATERIALS

Table 1 Reference of *Phashanbhinna rasa* available in different classical Texts

Sr.no	Name of the formulation	Reference	Ingredients	Indication
1.	<i>Pashanabhinna Rasa</i>	<i>Bhaishajya Ratnavali</i> ⁵	<i>Sudha parada</i> -1 pala <i>Sudha Gandhak</i> -2 part, <i>Sudha Shilajatu</i> - 4 part, <i>Sweta Punarnava-Q. S</i> <i>Vasa-</i> Q.S <i>Sweta Aparajita-</i> Q.S <i>Bhudhatri-1/12 Part</i> <i>Vishala-</i> 1/12 part <i>Kulatha-</i> Q.S <i>Dugdha-</i> Q.S	<i>Ashmari</i>
2.	<i>Pashanabhinna Rasa</i>	<i>Rasa Chandanshu</i> ⁶	<i>Sudha Parad</i> - 1 karsha <i>Sudha Gandhak</i> - 2 karsha <i>Sudha Shilajatu</i> - 1 Pala <i>Sweta Punarnava</i> - Q.S <i>Vasa</i> - Q.S <i>Sweta Aparajita</i> - Q.S <i>Dugdha</i> -Q. S	<i>Ashmari</i>
3.	<i>Pashanabhinna Rasa</i>	<i>Rasa Sagar</i> ⁷	<i>Sudha parad</i> - 1 Part <i>Sudha Gandhak</i> - 2 Part <i>Sudha Tutha</i> - 1 Part <i>Rasauta</i> - 1 Part <i>Sweta Punarnava-Q. S</i> <i>Vasa-</i> Q.S <i>Sweta Vacha-</i> Q.S <i>Gopala karkotaki,-Q. S</i> <i>Bhudhatr-</i> Q.S <i>chhoti dugdhi</i> -Q. S <i>Kulatha-</i> Q.S <i>Gokshura-</i> Q.S	<i>Ashmari</i>

Table 2 Ingredients of *Phashanbhinna Rasa* in detail

Sl.no	Drug Name	Latin name	Family	Part Used	Chemical composition
1.	<i>Sudha Parada</i>	Mercury	-	-	Symbol- Hg, Atomic No.-80, Atomic wt.-200.592, Melting point- -38.83 °C (-37.89 °F), Boiling Point- 356.62 °C (673.91 °F), Valance-1,2 Electron configuration-2-8-18-32-18-2 or (Xe)4f ¹⁴ 5d ¹⁰ 6s ²
2.	<i>Sudha Gandhak</i>	Sulphur	-	-	Sulfur (S) , non-metallic chemical element belonging to the oxygen group (Group 16 [VIa] of the periodic table), one of the most reactive of the elements. Pure sulfur is a tasteless, odourless, brittle solid that is pale yellow in colour, a poor conductor of electricity , and insoluble in water . It reacts with all metals except gold and platinum , forming sulfides ; it also forms compounds with several

					nonmetallic elements.
3.	<i>Sudha Shilajatu</i>	Black Bitumen	-	-	Flavonoids, terpenoids, saponins, tannins, alkaloids, steroids, Fulvic acids, dibenzo- α -pyrones, proteins, minerals ⁸ and glycosides constitute the primary chemical constituents. ⁹ Ferulic acid (FA) serves as a bioactive compound known for its wound healing properties. ^{10, 11} Fulvic acid, often regarded as a geopolymer ¹² , exerts its effects through complement-fixing activity and the carboxylic group content within Shilajit fractions and other sources of FA ¹³ . Natural organic matter (NOM) includes humic acid (HA) and fulvic acid (FA). ¹⁴
<i>Bhawna Dravyas</i>					
4.	<i>Sweta Punarnava</i> ¹⁵	Trianthem portulacastrum(Linn.)	Ficoidaceae	<i>Panchanga/Leaf</i>	Ecdysterone, trianthenol, 3-acetylaleuritic acid, 5,2'-dihydroxy-7-methoxy-6, 8-dimethylflavone, leptorumol, 3,4-dimethoxy cinnamic acid, 5-hydroxy-2-methoxybenzaldehyde, p-methoxybenzoic acid beta cyanin.
5.	<i>Vasa</i>	Adhatoda vasica(Nees)	Acanthaceae	<i>Panchanga/Leaf</i>	Vasicine, s 1, 2, 3, 9-tetrahydro- 5-methoxypyrrol [2, 1-b] quinazolin-3-ol ¹⁶ Vasicinone, Vasicinol, Adhatodine, Adhatonine, Adhvasinone, Anisotine and Hydroxypeganine, betaine, steroids and alkanes ¹⁷
6.	<i>Sweta Aparajita</i>	Clitoria ternatea(Linn.)	Fabaceae	<i>Panchanga/Leaf</i>	tannins, phlobatannin, carbohydrates, saponins, triterpenoids, phenols, flavanoids, flavonol glycosides, proteins, alkaloids, anthraquinone, anthocyanins, cardiac glycosides, Stigmast-4-ene-3,6-dione, volatile oils and steroid. ^{18, 19, 20}
7.	<i>Bhudhatri</i>	Phyllanthus niruri(Hook.f.non.Linn.)	Euphorbiaceae	Fruit	hyllanthin, phyllantidine, hypophyllanthin, niranthin, nirtetralin, phylteralin ²¹
8.	<i>Vishala</i>	Trichosanthes palmata(Roxb.)	Cucurbitaceae	Fruit	methyl palmitate, palmitic acid, suberic acid, α -spinasterol, stigmast-7-en-3-beta-ol, α -spinasterol 3-o-beta-D-glucopyranoside, stigmast-7-en-3-beta-ol-3-O-beta-D-glucopyranoside, glyceryl 1-palmitate, glyceryl 1-stearate, bryonolic acid, cucurbitacin B, isocucurbitacin B, 3-epi-isocucurbitacin B, 23,24-dihydrocucurbitacin D, isocucurbitacin D and D-glucose ²²

9.	<i>Kulatha</i>	<i>Dolichos biflorus</i> (Linn.)	Leguminosae	Seed	steroids, tannins, proteins, amino-acids, flavonoids, terpenoids, mucilage, volatileoil, saponin and carbohydrates ²³
10.	<i>Dugdha</i>	Milk	-	-	Lactose,protein,Vitamins,Minerals

Table 4 Ayurvedic Pharmacology of the Ingredients of *Phashanbhinna Rasa*

Sl.no	Drug name	Rasa	Guna	Virya	Vipaka	Karma
1.	<i>Sudha Parad</i> ²⁴	<i>Sada Rasa</i>	<i>Snigdha,sara</i>	<i>Ushna</i>	<i>Madhura</i>	<i>Yoga-vahi,Rasayana,Balya,Vri-sya,Tridoshaghna</i>
2.	<i>Sudha Gandhak</i> ²⁵	<i>Kashaya,madhura,katu,Tikta</i>	<i>Ushna,Snigdha,Sara</i>	<i>Ushna</i>	<i>Katu</i>	<i>Vrishya, Deepa-na,pachana,Rasayana,S hoshan,Pleehgna,Balya, Aamdoshanasak</i>
3.	<i>Sudha Shilajatu</i> ²⁶	<i>Tikta,katu</i>	<i>Sara</i>	<i>ushna</i>	<i>katu</i>	<i>Jwara,pandu,sopho nasana,prameha,Agnima ndhya,medo roga nasak,yakma sa-man,shoola nasak,Gulma-pliha nasana,udara shoo-la,Hridaya shoola nasak,Sarba twak roga nasak</i>
4.	<i>Sweta Punar- nava</i> ²⁷	<i>Katu, Kashaya</i>	<i>Laghu,Rukshya</i>	<i>Ushna</i>	<i>Katu</i>	<i>Mutrala(Diuretics)</i>
5.	<i>Vasa</i> ²⁸	<i>Tikta,Kashaya</i>	<i>Laghu,Rukshya</i>	<i>Sita</i>	<i>Katu</i>	<i>Mutra- ja- nana,Mutrakurchhra,Mu tradaha</i>
6.	<i>Sweta Apa- rajita</i> ²⁹	<i>Katu,Tikta,Kashaya</i>	<i>Laghu,Rukshya</i>	<i>Sita</i>	<i>Katu</i>	<i>Bhedana,mutrala,Bedan a sthapana</i>
7.	<i>Bhudhatri</i> ³⁰	<i>Madhura,Tikta,kash aya</i>	<i>Laghu,Ruksha</i>	<i>Sita</i>	<i>Madhura</i>	<i>Mutranjana, Dahasa- maka</i>
8.	<i>Vishala</i> ³¹	<i>Tikta</i>	<i>Laghu, Ruksa,Tiksna</i>	<i>Ushna</i>	<i>Katu</i>	<i>Krimighna, Vamaka, Visahara, Recana, Slesmaha- ra,Kamala,swasa,kasa,k ustha,Gulma,Udara Ro- ga</i>
9.	<i>Kulatha</i> ³²	<i>Kashaya</i>	<i>Laghu,Rukshya,Tikshn a</i>	<i>Ushna</i>	<i>Amla</i>	<i>Mutrala,Ashmarighna</i>
10.	<i>Dugdha</i> ³³	<i>Madhura</i>	<i>Mru- du,Snigdha,Vahala,Sla ksh- na,Pichhila,Guru,Man da,Prashnna</i>	<i>sita</i>	<i>Madhura</i>	<i>Oja vardhana,Jivaniya,Rasa yana</i>

METHOD OF PREPARATION

The preparation of *Pashanbhinna Rasa* commenced by grinding *Shuddha Parada* (purified mercury) and *Shuddha Gandhaka* (purified sulfur) until a Kajjali consistency devoid of shiny particles was achieved. Subsequently, *Shuddha Shilajatu* was introduced into the *Kajjali* mixture, followed by levigation (*Bhavana*) with water to ensure thorough integration.

Following the initial preparation, three additional *Bhavanas* were performed, each with *Sweta Punarnava*, *Vasa*, and *Sweta Aparajita*, for one day each. These *Bhavanas* aimed to enhance the formulation's medicinal properties and synergistic effects.

After completing the *Bhavana* procedures, the mixture was shaped into pellets (*Chakrikas*) and dried under shade. Subsequently, the dried pellets were encapsulated in a *Sharava Samputa* and subjected to *Putra*, with *Mandagni*, for 3 hours. Upon self-cooling, the product was collected and powdered.

To further enrich the formulation, powders of *Bhumi Amalaki* and *Vishala* fruits were incorporated and thoroughly mixed. Finally, the prepared *Pashanbhinna Rasa* was stored in a glass jar for subsequent use, adhering to traditional practices and preserving its potency and integrity.

DISCUSSION

The formulation of *Pashanbhinna Rasa* presents a compelling synergy of *Ayurvedic* ingredients, each contributing unique therapeutic properties to treat urolithiasis effectively. In *Ayurveda*, *Parada* (mercury) is a potent substance used in various *Ayurvedic* formulations to treat *Ashmari*; *Parada* is often processed and purified through a series to elaborate multiple therapeutic properties. *Parada* is considered to be *Yogvahi*. When combined with another ingredient, it shows *Rasayana* (Rejuvenation) properties, which rejuvenates body tissues and enhances overall vitality. It also helps detoxify the body and remove accumulated toxins, which might contribute to the formation of stones. It also has the *Lekhana* (Scraping) property, which aids in the breakdown and dissolution of stones.

Gandhaka(sulfur) is another crucial element in *Ayurvedic* medicine, often combined with mercury in various formulations. *Gandhak* shows antimicrobial properties, which help prevent and treat infections that may occur due to kidney stones. *Gandhaka* aids in *Pachan*(digestion) and metabolism, ensuring the body does not produce excess waste that could form stones. It has a *Mutrala* (Diuretic) property that promotes urination, helping to flush out small stones and preventing the formation of new ones.

The compounds formed by the combination of *Parada* and *Gandhaka* are believed to penetrate and dissolve kidney stones, reducing them to a size that can be easily excreted. They also provide analgesic effects, reducing the pain associated with kidney stones and helping prevent the recurrence of new stones.

Shilajit, a mineral-rich substance renowned for its rejuvenating properties, aids in eliminating toxins, potentially preventing the formation of kidney stones. Moreover, its anti-inflammatory and analgesic characteristics relieve the discomfort associated with urolithiasis.

Aparajita and *Vasa*, acclaimed for their diuretic attributes, work synergistically to increase urine production, facilitating the expulsion of stones and inhibiting their recurrence. *Punarnava* further amplifies this diuretic effect while reducing inflammation in the urinary tract, easing the passage of stones. *Bhumi Amalaki's* lithotriptic properties play a pivotal role in breaking down stones into smaller fragments, easing their passage through the urinary tract. *Vishala*, with its cooling and anti-inflammatory properties, complements this action by soothing the urinary tract and alleviating associated pain and inflammation. Finally, *Kulatha* contributes to increased urine output, further aiding in the prevention of stone formation. Together, these ingredients in *Pashanbhinna Rasa* form a potent therapeutic formulation that addresses various aspects of urolithiasis, offering relief and preventing recurrence through a holistic approach deeply rooted in *Ayurvedic* principles.

CONCLUSION

In conclusion, *Pashanbhinna Rasa* manifests *Ayurveda's* holistic approach to addressing the multifacet-

ed challenges of urolithiasis. Through a meticulous combination of *Ayurvedic* ingredients, including *Parada, Gandhaka, Shilajit, Aparajita, Vasa, Punarnava, Bhumi Amalaki, Vishala, and Kulatha*, this formulation offers a comprehensive solution for the management and prevention of kidney stones. By enhancing urine production, promoting stone dissolution, reducing inflammation, and providing pain relief, *Pashannabhinna Rasa* addresses the various aspects of urolithiasis while attempting to prevent recurrence. Rooted in *Ayurvedic* principles and supported by centuries of traditional wisdom, *Pashanbhinna Rasa* represents a potent therapeutic option that embodies Ayurveda's holistic and integrative approach to promoting health and wellness.

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