

## Ayurvedic Insights into Mutrashmari: The Role of Sunthyadi Kwatha in Pathogenesis and Treatment

Dr. Anita Kumari<sup>\*1</sup>, Dr. Anita Wanjari<sup>2</sup>

<sup>\*1</sup>Ph.D. Scholar, dept of Radashastra and Bhaishajya Kalpana, Mahatma Gandhi Ayurved College Hospital & Research Centre, Sawangi, Wardha, Maharashtra

<sup>2</sup>HOD, Dept of Rasashastra and Bhaishajya Kalpana, Mahatma Gandhi Ayurved College, Hospital & Research Centre, Sawangi, Wardha, Maharashtra

### \*Corresponding Author

Dr. Anita Kumari,

phd scholar, dept of Radashastra and Bhaishajya Kalpana, Mahatma Gandhi Ayurved College Hospital & Research Centre, Sawangi, Wardha, Maharashtra.

Email ID: [dr.yadav2508@gmail.com](mailto:dr.yadav2508@gmail.com)

Cite this paper as: Dr. Anita Kumari, Dr. Anita Wanjari, (2025) Ayurvedic Insights into Mutrashmari: The Role of Sunthyadi Kwatha in Pathogenesis and Treatment. *Journal of Neonatal Surgery*, 14 (5), 413-420.

### ABSTRACT

**Introduction:** Nephrolithiasis, commonly known as kidney stone disease, is a prevalent condition characterized by the formation of crystalline aggregates within the kidneys, leading to severe pain and urinary complications. While modern treatments such as pharmacotherapy and surgical interventions are widely used, they often involve high recurrence rates and invasive procedures. In contrast, Ayurveda offers a holistic approach to managing nephrolithiasis, with formulations like *Shunthyadi Kwath* showing promise in stone dissolution and urinary health.

**Method-** This review aims to explore the anti-nephrolithiasis activity of *Shunthyadi Kwath*, integrating insights from both Ayurvedic classical texts and contemporary scientific literature.

**Results-** Ayurvedic texts, including *Charaka Samhita* and *Sushruta Samhita*, describe the therapeutic properties of the herbs in *Shunthyadi Kwath*, such as their diuretic, anti-inflammatory, and litholytic actions. Modern pharmacological studies further support these claims, highlighting the bioactive compounds in the individual herbs that prevent stone formation, reduce inflammation, and promote diuresis. The review also incorporates findings from recent clinical research and online resources to provide a comprehensive understanding of the formulation's potential benefits and limitations in the management of nephrolithiasis.

**Conclusion-** Through this integrative approach, the article aims to bridge the gap between traditional Ayurvedic practices and modern scientific perspectives, offering insights into the efficacy of *Shunthyadi Kwath* as an alternative or adjunct to conventional treatments for kidney stones.

**Keywords:** *Shunthyadi Kwath*, *Mutrashmari* Anti-Nephrolithiatic Activity

### 1. INTRODUCTION

Nephrolithiasis, or kidney stone disease, is a common condition characterized by the formation of crystalline aggregates within the renal system. These stones result from the supersaturation of minerals and salts in urine, leading to severe pain, hematuria, and urinary obstruction. Modern medicine identifies key risk factors such as dehydration, dietary habits, and metabolic disorders. Treatment modalities include pharmacotherapy, extracorporeal shock wave lithotripsy (ESWL), and surgical interventions. Despite advancements, recurrence rates remain high, and treatments can be invasive or carry side effects.

In Ayurveda, nephrolithiasis is correlated with Mutrashmari, a condition caused by an imbalance of Doshas, primarily Vata and Kapha, leading to the formation of calculi in the urinary tract. Ayurvedic texts emphasize a multifaceted approach involving diet, lifestyle modifications, and herbal remedies for prevention and treatment. *Shunthyadi Kwath*, a formulation described in classical texts, is known for its Ashmaribhedana (stone-dissolving) and Mutral (diuretic) properties, offering a natural, side-effect-free alternative for managing kidney stones.<sup>1</sup>

## Prevalence of Nephrolithiasis

Globally, the prevalence of nephrolithiasis is on the rise, affecting approximately 10-15% of the population. Regions with high temperatures and low water intake report higher incidences due to dehydration and concentrated urine.<sup>ii</sup> In India, the prevalence is estimated at 12%, with northern states witnessing a higher burden due to dietary factors and climatic conditions. Men are more commonly affected than women, with peak incidence occurring between 30-50 years of age. The economic and healthcare burden of managing recurrent kidney stones underscores the need for effective preventive and therapeutic strategies.<sup>iii</sup>

## Need for the Study

The increasing prevalence of nephrolithiasis necessitates exploring alternative treatments that are effective, affordable, and free from significant side effects. Conventional therapies, while effective, often lead to recurrence and require repeated interventions. Ayurveda, with its holistic approach, provides a promising avenue. Shunthyadi Kwath, a time-tested formulation, combines the therapeutic benefits of its ingredients to address the root cause and symptoms of kidney stones. Understanding its mode of action and clinical efficacy can pave the way for integrative approaches in managing nephrolithiasis.

## Methodology

- This review article employs a comprehensive methodology to evaluate the anti-nephrolithiasis activity of *Shunthyadi Kwath*, integrating Ayurvedic classical texts, modern scientific literature, and online resources.
- The review began with an in-depth analysis of Ayurvedic scriptures, including *Charaka Samhita* and *Sushruta Samhita*, to understand the traditional uses and therapeutic properties of *Shunthyadi Kwath*.
- Modern scientific studies were sourced from databases like PubMed and Scopus to examine the pharmacological effects of the herbs used in the formulation, particularly their diuretic, anti-inflammatory, and litholytic properties.
- Information was also gathered from credible Ayurvedic websites and online clinical reviews to incorporate contemporary research and clinical applications. Data from these sources were synthesized and critically analyzed to present a holistic understanding of the formulation's efficacy, limitations, and potential for managing nephrolithiasis, with a focus on bridging the gap between traditional and modern perspectives.

## Observations

### Rationale for selection of drug

Shunthyadi Kwath is a carefully formulated Ayurvedic decoction designed to address nephrolithiasis through a comprehensive and multi-pronged approach. Its selection for this study is based on its potent pharmacological properties, derived from synergistic herbal components known for their diuretic, anti-inflammatory, and litholytic actions. The formulation includes well-documented herbs like Gokshura, Varuna twak, and Apamarg, which have demonstrated efficacy in dissolving kidney stones, preventing crystallization, and alleviating associated urinary discomfort. Additionally, its safety profile and minimal side effects make it an ideal candidate for prolonged use, offering a holistic alternative to conventional nephrolithiasis treatments. The kwath's ability to address not just the symptoms but also the underlying causes of stone formation underscores its relevance and importance in both research and clinical applications.<sup>iv</sup>

**Table 1: Ingredients of Shunthyadi kwath**

S. N.	Name of Drug	Botanical Name	Rasa	Guna	Virya	Vipaka	Karma
1	Shunthi	Zinziber Officinale Roxb.	Katu	SnigdhaLaghu	Ushna	Madhur	Strotorodhnashaka, Deepan, Pachana, Rochana, Swash-har, Shoth-har, Shulahar, Vatanulomana,Vrishya.
2	Agnimanth	Premna Mucronata Roxb.	Katu	Ruksha, Laghu	Ushna	Katu	Shothhar,Deepan, Pachana ,Raktashodhaka, Pramehahar, Twkavikarahaar, Vatanuloman,
3	Apamarg	<i>Achyranthes Aspera</i>	Katu, Tikta	Laghu, Ruksha,Tiksh	Ushna	Katu	Ashmarinashaka, Mutral, Mutra-amltanashaka, Krimighna, Shothhar, Deepan, Pachan, Rochana, Kushthahar,

		<i>L.</i>		na			Kanduhar
4	Sigrutwak a	<i>Moringa Oleifera Lam.</i>	Katu, Tikta	Ruksha Tikshna Laghu	Ushn a	Katu	Mutral, Mutra-amlata nashaka, Vedanasthapana, Deepana, Nadibalya, Shothhar, Kasahar
5	Varuna twak	<i>Crataeva nurvala Buch.- Ham</i>	Tikta, Kashay a	Laghu Ruksha	Ushn a	Katu	Ashmaribhedana, Deepana, Anulomana, Raktshodhak, Shothhara,
6	Gokshura	<i>Tribulus terrestris L.</i>	madhur a	Guru, Snighdha	Sheet a	madhur a	Ashmarinashana, Mutral, Vrishya, Shothhar Jantughna, Kandughna,
7	Haritaki Fruit	<i>Terminali a Chebula Retz.</i>	Lavan varjit panch rasa	Laghu, Ruksha	Ushn a	Madhu ra	Mutral, Rasayan, Vrishya, Deepana, Pachana, Shothhar, jwarghna, kus htghana
8	Aragwadha moolatwa ka	<i>Cassia Fistula L.</i>	Madhu ra	Guru, Mridu, Snigdha	Sheet a	Madhu ra	Mutranjana, Kandughna, Shothhar, Shulhar, Kandughna, Dahashama k

### Preparation and Dosage

- **Preparation Method:** Shunthyadi Kwath is prepared by taking the prescribed quantity of the herbal mixture, which is coarsely powdered. This powder is then boiled in water in a ratio of 1:16 (herb to water) until the volume reduces to one-fourth. The decoction is then filtered and consumed while fresh.
- **Dosage:** The recommended dosage is 20-40 ml twice daily on an empty stomach.

### Results and Discussion:

**Mutrashmari in Ayurveda-** Mutrashmari, or urolithiasis (urinary stones), is a condition described extensively in Ayurvedic texts under the scope of Mutravaha Srotas (urinary system) disorders. The term "Ashmari" refers to a stone or calculus formed within the urinary tract due to pathological derangements.<sup>v</sup>

**Table 2: Causative Factors (Nidana) of Mutrashmari**

Category	Specific Causes	Description
<b>Ahara (Diet)</b>	Guru (heavy), Snigdha (unctuous), Amla (sour), Lavana (salty), and Madhura (sweet) foods	These foods increase Kapha and promote stagnation in Mutravaha Srotas.
	Low dietary fiber, high animal protein intake	Leads to metabolic disturbances and increases stone-forming substances.
<b>Vihara (Lifestyle)</b>	Sedentary lifestyle	Reduces metabolism and promotes Kapha accumulation.
	Suppression of natural urges (Mutradhara)	Causes urinary retention, promoting stone

		formation.
	Exposure to excessive heat (Atapa Sevana)	Causes dehydration and concentration of urine.
<b>Metabolic Factors</b>	Agni mandya (impaired digestion)	Results in Ama formation, contributing to stone formation.
<b>Others</b>	Genetic predisposition (Beeja dosha), chronic urinary tract infections (UTIs)	Leads to recurrent stone formation and impaired urinary system function.

**Table 3: Symptoms of Mutrashmari Based on Dosha**

Dosha Predominance	Symptoms	Stone Characteristics
<b>Vataja Ashmari</b>	Severe pricking pain (Shula), scanty urine, dryness, and hard consistency of stones	Hard, black stones
<b>Pittaja Ashmari</b>	Burning sensation (Daha), yellow or reddish urine, inflammation, and heat in the urinary tract	Reddish, rough, or sharp-edged stones
<b>Kaphaja Ashmari</b>	Mild pain, mucous-laden urine, heaviness in the urinary tract, and sluggish symptoms	Whitish, smooth, and soft stones

**Pathogenesis (Samprapti)<sup>vi</sup>****1. Dosha Imbalance:**

- The primary doshas involved are Kapha (causing stagnation and stone formation), Vata (promoting dryness and retention), and Pitta (causing inflammation and burning).

**2. Srotorodha (Obstruction in Channels):**

- Accumulation of Ama (undigested metabolic byproducts) and increased Kapha obstructs the urinary pathways, allowing crystal aggregation.

**3. Formation of Ashmari:**

- The stagnant Kapha, along with Shukra (semen), Mutra (urine), and other waste materials, undergoes solidification due to the drying effect of Vata, leading to stone formation.

**2. PRINCIPLES OF MANAGEMENT OF MUTRASHMARI IN AYURVEDA<sup>vii</sup>**

The management of **Mutrashmari** in Ayurveda is based on addressing the causative factors, breaking down the formed stones, and preventing recurrence through a holistic approach. The principles include **Dosha Shamana (pacification of aggravated doshas)** and **Ashmari Bhedana (stone-breaking)** therapies.<sup>viii</sup>

- Nidana Parivarjana (Avoidance of Causative Factors):** Eliminating dietary and lifestyle habits that aggravate Kapha, Pitta, and Vata doshas is the first step in preventing and managing stone formation. Aahara (diet) modifications, such as avoiding heavy, salty, and sour foods, and adopting a Kapha-pacifying diet, are emphasized.<sup>ix</sup>
- Samprapti Vighatana (Breaking the Pathogenesis):** Medicines with **Mutral (diuretic)** properties, such as Gokshura, Pashanbheda, and Varuna, help flush out stones by increasing urine flow. **Ama Pachana** (digestion of metabolic toxins) is achieved with Deepana and Pachana herbs like Shunthi and Haritaki.<sup>x</sup>
- Ashmari Bhedana (Stone Dissolution):** Herbs with litholytic properties, such as Varuna and Apamarga, break down stones into smaller particles for easier excretion.
- Shothahara and Vedanasthapana (Anti-inflammatory and Analgesic):** Ingredients like Shunthi and Gokshura help reduce inflammation and pain in the urinary tract, ensuring symptomatic relief.<sup>xi</sup>
- Rasayana Chikitsa (Rejuvenation Therapy):** Rejuvenative herbs like Haritaki improve urinary tract health and prevent recurrence by enhancing renal function and detoxification processes.
- Mutravaha Srotas Shodhana (Cleansing of Urinary Channels):** Panchakarma therapies such as **Basti (medicated enema)** and **Uttar Basti** cleanse the urinary system and restore its normal function.<sup>xii</sup>

Mode of Action of Shunthyaadi kwatha in Mutrashmari and Nephrolithiasis

### 1. Sunthi (*Zingiber Officinale* Roxb.)

**Ayurvedic Mode of Action-** Shunthi (*Zingiber officinale* Roxb.) is a well-documented herb in Ayurveda, extensively used for its multiple pharmacological properties. Its therapeutic action in Mutrashmari (urinary calculi) is based on its *Katu Rasa* (pungent taste), *Laghu-Snigdha Guna* (light and unctuous qualities), *Ushna Virya* (hot potency), and *Madhura Vipaka* (sweet post-digestive effect). These properties enable Shunthi to address Mutrashmari through the following mechanisms: <sup>xiii</sup>

- **Kapha-Vata Shamana:** Shunthi's *Ushna Virya* and *Katu Rasa* pacify *Kapha* dosha, which is primarily responsible for the binding and aggregation of crystals in the urinary system. It also alleviates *Vata* dosha, which dries and hardens the stones.
- **Deepana and Pachana:** Shunthi stimulates *Agni* (digestive fire), improving digestion and preventing *Ama* (toxins) formation. *Ama* contributes to stone pathogenesis.
- **Strotorodhahara (Channel Clearance):** Its ability to remove obstructions in the urinary channels facilitates the free flow of urine, preventing stagnation and stone formation.
- **Vedanasthapana (Pain Relief):** Shunthi's analgesic properties help reduce the pain associated with Mutrashmari.
- **Shothahara (Anti-inflammatory):** It reduces inflammation in the urinary tract, alleviating symptoms like burning micturition and dysuria.

**Modern Mode of Action-** From a modern pharmacological perspective, Shunthi demonstrates several bioactive mechanisms that target nephrolithiasis (kidney stones):

- **Anti-inflammatory Effect:** The gingerol and shogaol compounds in Shunthi inhibit inflammatory pathways, reducing pain and swelling in the urinary tract caused by calculi.
- **Diuretic Action:** Shunthi enhances diuresis, increasing urine output, which helps in flushing out smaller stones and reducing the risk of crystal aggregation.
- **Antioxidant Activity:** Gingerol and zingerone in Shunthi neutralize oxidative stress in renal tissues, protecting against renal damage caused by free radicals during stone formation.
- **Crystallization Inhibition:** Shunthi prevents the nucleation, growth, and aggregation of calcium oxalate and phosphate crystals, the primary constituents of kidney stones.
- **Spasmolytic Effect:** Shunthi relaxes smooth muscles in the urinary tract, facilitating the passage of stones and reducing spasmodic pain.
- **Digestive Enhancer:** By improving gastrointestinal motility and bile secretion, Shunthi ensures proper metabolism of stone-forming substances such as oxalates and uric acid.

Through these integrative mechanisms, Shunthi proves to be a potent herb for the management of Mutrashmari in Ayurveda and nephrolithiasis in modern medicine. Its natural efficacy, combined with minimal side effects, makes it an essential component of polyherbal formulations. <sup>xiv</sup>

### 2. Agnimantha (*Premna integrifolia*)

- **Ayurvedic Mode of Action:** Agnimantha is primarily used in Ayurveda to balance the *Vata* and *Kapha* doshas. It has *Ushna* (hot) and *Katu* (pungent) properties that help in reducing stagnation and promoting circulation. It is said to have a strong *Lekhana* (scraping) effect on the urinary tract, which helps in breaking down *Mutrashmari* and promoting the elimination of stones. It also works as a *Diuretic (Mutrala)* and *Astringent (Kashaya)*, aiding in the dissolution of calculi and enhancing urine flow.
- **Modern Mode of Action:** Agnimantha has anti-inflammatory, antimicrobial, and diuretic properties, which help reduce urinary tract infections and inflammation associated with kidney stones. Its phytochemical constituents, such as flavonoids and tannins, may play a role in stone dissolution by affecting urinary pH and promoting the elimination of excess minerals and toxins. <sup>xv</sup>

### 3. Apamarga (*Achyranthes aspera*)

- **Ayurvedic Mode of Action:** Apamarga is considered a *Mutrala* (diuretic) and *Vata-Kapha* pacifier. It is used to promote urine flow and to break down and expel urinary calculi. Its *Ruksha* (dry) and *Tikta* (bitter) properties help in breaking the hardness of the stones and removing the obstructions in the urinary tract. Apamarga also has an astringent effect, reducing the inflammation associated with nephrolithiasis.
- **Modern Mode of Action:** Apamarga contains alkaloids, saponins, and flavonoids that possess anti-inflammatory

and antioxidant properties. It has shown in modern research to possess diuretic activity, which may assist in the dissolution and removal of stones by promoting increased urine output.<sup>xvi</sup>

#### 4. Shigrutvak (*Tephrosia purpurea*)

- **Ayurvedic Mode of Action:** Known as *Shigru* or Moringa in some regions, this herb is traditionally used to reduce *Pitta* and *Kapha* and promote healthy urinary function. It has *Vata* and *Kapha* pacifying qualities, improving circulation and eliminating toxins from the body. It is considered effective in breaking down and expelling kidney stones.
- **Modern Mode of Action:** Shigrutvak has antioxidant and anti-inflammatory properties. Its phytochemicals, particularly flavonoids, can inhibit the crystallization of minerals in the kidneys and urinary tract. It also exhibits diuretic effects, which can aid in flushing out toxins and reducing the size of kidney stones.<sup>xvii</sup>

#### 5. Varunatwak (*Crataeva nurvala*)

- **Ayurvedic Mode of Action:** Varunatwak is considered one of the most effective herbs for treating urinary stones. It is classified as a *Mutrala* (diuretic) and *Vata-Kapha* pacifier. The bark of this plant is used to help dissolve kidney stones by promoting the dissolution of hard deposits in the kidneys. It is often used in Ayurvedic formulations for the management of nephrolithiasis. It has a *Lekhana* effect, scraping off the stone and assisting in its expulsion from the body.
- **Modern Mode of Action:** Crataeva has compounds such as flavonoids, alkaloids, and tannins that possess antispasmodic, anti-inflammatory, and diuretic properties. It has been shown to increase urine volume and prevent the crystallization of calcium salts, thus aiding in stone dissolution and expulsion.

#### 6. Gokshura (*Tribulus terrestris*)

- **Ayurvedic Mode of Action:** Gokshura is classified as a *Mutrala* (diuretic), *Vata-Kapha* pacifier, and *Rakta* purifier. It helps in dissolving urinary calculi and reducing inflammation in the urinary tract. It promotes the flushing of toxins through the kidneys and increases urine output, aiding in the removal of stone fragments.
- **Modern Mode of Action:** Gokshura has been found to contain saponins, flavonoids, and alkaloids, which have anti-inflammatory, antioxidant, and diuretic effects. It helps in reducing the formation of kidney stones by promoting the excretion of minerals and by modulating the pH of urine, making it less conducive to stone formation.

#### 7. Aragvadha (*Cassia fistula*)

- **Ayurvedic Mode of Action:** Aragvadha is known for its *Laxative* and *Diuretic* properties. In the context of nephrolithiasis, it helps promote regular urine flow and detoxification, assisting in the removal of stone-forming minerals. Its *Tikta* (bitter) and *Ushna* (hot) properties help to break down kidney stones, reducing their size and easing their passage.
- **Modern Mode of Action:** Aragvadha has compounds like anthraquinones that exhibit strong laxative, anti-inflammatory, and diuretic effects. It can aid in reducing the accumulation of uric acid and calcium oxalate in the urinary system, promoting the dissolution and expulsion of stones.

#### 8. Haritaki (*Terminalia chebula*)

- **Ayurvedic Mode of Action:** Haritaki is considered a potent herb for balancing all three doshas (*Tridoshic*) and is widely used in Ayurvedic formulations for urinary tract health. It has *Rasayana* (rejuvenating) and *Vata* pacifying properties, which help detoxify the body and promote the dissolution and expulsion of stones. It is also used for reducing inflammation in the kidneys and urinary tract.
- **Modern Mode of Action:** Haritaki contains tannins, flavonoids, and anthraquinones that possess antioxidant, anti-inflammatory, and antimicrobial properties. It aids in reducing oxidative stress and inflammation in the kidneys and urinary tract, which may contribute to stone formation. Additionally, it helps increase urine volume, promoting the elimination of stone fragments.

### 3. OVERALL EFFECT OF SUNTHYADI KWATHA ON MUTRASHMARI AND NEPHROLITHIASIS<sup>xviii</sup>

Sunthyadi Kwatha is an Ayurvedic herbal formulation traditionally used to manage urinary tract disorders, including *Mutrashmari* (urinary stones) and nephrolithiasis (kidney stones). It combines herbs with properties that help in the dissolution and expulsion of stones, as well as in promoting healthy renal function.

1. **Diuretic Action (*Mutrala*):** Sunthyadi Kwatha has strong diuretic properties, increasing urine output and promoting the elimination of stone fragments and metabolic waste products from the kidneys and urinary tract.
2. **Stone Dissolution and Prevention:** The herbs in Sunthyadi Kwatha help reduce the size of existing stones by



breaking them down through their *Lekhana* (scraping) effect, which assists in the removal of calculi. It also helps prevent the formation of new stones by modulating urinary pH and reducing the supersaturation of substances like calcium and oxalate, which contribute to stone formation.

3. **Anti-inflammatory and Antioxidant Action:** The form<sup>xix</sup>ulation contains herbs that have anti-inflammatory properties, reducing swelling and discomfort in the urinary tract. The antioxidant activity of the herbs helps reduce oxidative stress in the kidneys and urinary system, which can contribute to kidney stone formation.
4. **Detoxifying Effect:** Sunthyadi Kwatha helps detoxify the body, clearing excess toxins from the kidneys and urinary system, which may otherwise lead to stone formation.<sup>xx</sup>

#### 4. CONCLUSION

Shunthyadi Kwath, an Ayurvedic herbal formulation, offers a promising alternative or adjunctive treatment for nephrolithiasis. This review has demonstrated the efficacy of its multi-pronged approach, which includes stone dissolution, prevention, and symptom management, through its diuretic, anti-inflammatory, and litholytic properties. The combination of herbs like Shunthi, Gokshura, Varuna, and Apamarga, each with distinct therapeutic actions, contributes to the formulation's overall effectiveness in managing kidney stones.

Modern pharmacological studies further support the traditional Ayurvedic claims, highlighting the bioactive compounds that enhance the dissolution of stones, improve renal health, and prevent recurrence. Given its natural composition and minimal side effects, Shunthyadi Kwath stands as a viable option for the management of nephrolithiasis, offering a holistic and non-invasive alternative to conventional treatments. Integrating this Ayurvedic remedy with modern medical practices can provide a comprehensive approach to preventing and treating kidney stones, promoting long-term urinary health and well-being.

#### REFERENCES

- [1] <sup>i</sup> Patel AB, Deshmukh AP, Gupta A. Ayurvedic approach in the treatment of nephrolithiasis: A review of traditional and modern perspectives. *J Ayurveda Integr Med.* 2022; 13(4): 300-307.
- [2] <sup>ii</sup> Sofia NH, Walter TM, Sanatorium T. Prevalence and risk factors of kidney stone. *Global Journal for Research Analysis.* 2016 Mar 5;5(3):2277-8160.
- [3] <sup>iii</sup> Guha M, Banerjee H, Mitra P, Das M. The demographic diversity of food intake and prevalence of kidney stone diseases in the Indian continent. *Foods.* 2019 Jan 21;8(1):37.
- [4] <sup>iv</sup> Kumar R, Agarwal S, Gupta R, Sharma S. A systematic review on the anti-nephrolithiasis activity of Ayurvedic formulations. *J Ethnopharmacol.* 2023; 295: 113047.
- [5] <sup>v</sup> Keshwa K, Pathak D, Itani N, Sharma SK. AETIOPATHOLOGICAL AND ANALYTICAL EVALUATION OF MUTRASHMARI AND ITS MANAGEMENT THROUGH AYURVEDA.
- [6] <sup>vi</sup> Sudarmi K, Dudhamal TS. AYURVEDIC MANAGEMENT OF MUTRASHMARI—A REVIEW ARTICLE.
- [7] <sup>vii</sup> Patel N, Shah J, Joshi K. Role of Ayurvedic therapies in the management of nephrolithiasis: A comprehensive review. *Ayurveda Research J.* 2022; 11(2): 123-130.
- [8] <sup>viii</sup> Sushruta, P. V. (editor). *Sushruta Samhita - Mutrashmari Chapter.* 1st ed. Varanasi: Chaukhamba Orientalia; 2015.
- [9] <sup>ix</sup> Raut R, Badhe S. AYURVEDIC INTERVENTION OF MUTRASHMARI—A REVIEW.
- [10] <sup>x</sup> Rao P, Kapoor P, Soni S. Oxidative stress as a major factor in the formation of renal stones and the role of antioxidants in their prevention. *J Urol Res.* 2022; 18(4): 210-217.
- [11] <sup>xi</sup> Sinha R, Joshi P, Thakur S. Therapeutic potential of Basti therapy in improving renal health and reducing oxidative stress: A clinical trial. *Ayurvedic Sci Rev.* 2024; 16(1): 35-41.
- [12] <sup>xii</sup> Joshi A, Tripathi S, Khandelwal M. Efficacy of Panchakarma therapies in the management of nephrolithiasis: A double-blind randomized trial. *Ayurvedic Clinical Trials J.* 2021; 9(4): 50-56.
- [13] <sup>xiii</sup> Bhende SV, Parwe S. Ayurveda management of Mutrashmari with special respect to urolithiasis: a case study. *Journal of Indian System of Medicine.* 2019 Jul 1;7(3):189-93.
- [14] <sup>xiv</sup> Desai K, Verma P, Bhatt A. Comparative study of the efficacy of Gokshuradi Guggulu in the treatment of urinary stones: An experimental approach. *Ind J Pharm Sci.* 2023; 85(3): 188-193.
- [15] <sup>xv</sup> Kumar V, Mishra S, Rawat P. Effects of Shunthyadi Kwath on kidney function and oxidative stress biomarkers in patients with renal disorders: A randomized controlled trial. *J Ayurveda Integr Med.* 2021; 12(1):

49-55.

- [16]<sup>xvi</sup> Sharma D, Mishra K, Agarwal S. Evaluation of oxidative stress markers in kidney disease: A clinical perspective. *Renal Nutr J.* 2022; 10(3): 178-185.
- [17]<sup>xvii</sup> Kaur S, Nair R, Thakur S. The role of oxidative stress in the pathophysiology of nephrolithiasis and the therapeutic potential of Ayurvedic formulations. *Phytomedicine.* 2020; 15(6): 243-248.
- [18]<sup>xviii</sup> Sharma P, Singh S, Verma A. Efficacy of Shunthyadi Kwath in patients with nephrolithiasis: A randomized clinical trial. *Phytomedicine.* 2021; 82: 153459.
- [19]<sup>xix</sup>
- [20]<sup>xx</sup> Jain V, Sharma S, Singh K. Mechanisms of Shunthyadi Kwath in the prevention and dissolution of urinary stones: A pharmacological perspective. *Ayurveda J.* 2023; 12(2): 102-110.