ISSN: 2249- 5746
International Journal of Ayurvedic and Herbal Medicine 14:6 (2024) 4617-4629
Journal homepage: http://www.interscience.org.uk
10.47191/ijahm/v14i6.04
Impact Factor: 8.003

Comprehensive Documentation and Critiques on Pashanabhedadi Kwatha: Exploring its Potential in Chronic Kidney Disease (CKD)

Dr. Rashmita Tiga[1], Prof. (Dr.) Pragya P. Mallik[2], Dr. Snehamayee Mishra[3], Dr. Bharatilata Acharya[4]
[1]MD Scholar,P.G Department of Kayachikitsa ,Gopabandhu Ayurveda Mahavidyalaya, Puri, Odisha.
[2]Professor & HOD, P.G Department of Kayachikitsa, Gopabandhu Ayurveda Mahavidyalaya, Puri, Odisha.
[3]HOD, P.G Department of Kayachikitsa, National College of Ayurveda, Barwala, Hisar, Haryana.
[4]Assistant Professor, P.G Department of Kayachikitsa, Gopabandhu Ayurveda Mahavidyalaya, Puri, Odisha.

ABSTRACT: In *Ayurveda*, the treatment of Chronic Kidney Disease (CKD) is approached through a holistic lens, where the focus lies not just on alleviating symptoms but also on restoring balance to the body's intricate systems. *Pashanabhedadi Kwatha*, a revered polyherbal formulation, exemplifies this Ayurvedic approach by combining a unique blend of herbs (such as *Pashanabheda, Yastimadhu, Vasa, Gokshura, Eranda, Aragwadha phala majja, Pippali, Ela, Shilajit, Souvarchala lavana*, and *Mishri*), each chosen for its specific role in supporting kidney health, also known for their diuretic, anti-inflammatory, and detoxifying properties. When combined, they work synergistically to enhance renal function, regulate fluid balance, and reduce inflammation, which are crucial factors in managing CKD. In *Ayurveda*, kidney dysfunction is often attributed to imbalances in the *doshas,* accumulation of *ama* and disturbances in *agni* and *srotas*. *Pashanabhedadi Kwatha* is formulated to address these imbalances, with its herbs targeting specific physiological processes that support renal and metabolic health. The present study aims to evaluate the effects of *Pashanabhedadi Kwatha* on CKD through the lens of *Ayurvedic* principles like *Rasa Panchaka*, and to explore its influence on *doshic* imbalances, *ama, agni, srotas*, and the specific phytochemical constituents responsible for its therapeutic benefits. By reviewing both classical and modern literature, this study seeks to shed light on the potential mechanisms behind its beneficial effects in CKD and offer insights into its clinical applications.

KEYWORDS: *Ayurveda,* Chronic Kidney Disease, *Pashanabhedadi Kwatha, Rasa Panchaka.*

INTRODUCTION

Chronic Kidney Disease (CKD) is a progressive disorder characterized by the gradual decline in kidney function, which, if left untreated, can eventually lead to end-stage renal disease. The rising prevalence of CKD has become a significant global health challenge, with risk factors such as Diabetes, Hypertension, and poor lifestyle choices contributing to its development. Conventional medicine focuses primarily on slowing the progression of kidney damage, managing symptoms, and preventing complications through medications, dietary changes, and dialysis. However, a growing number of individuals are seeking complementary therapies to enhance kidney function, improve overall well-being, and manage symptoms in a more holistic and integrative manner. These alternative treatments aim not only to control the disease but also to restore balance within the body, providing a more comprehensive and personalized approach to CKD management.

Pashanabhedadi Kwatha[1], a traditional Ayurvedic polyherbal formulation, offers a potential alternative or adjunctive treatment comprising a blend of medicinal herbs and has been used to address kidney-related

ailments, including kidney stones and urinary tract disorders. Its therapeutic properties are believed to enhance kidney function, reduce inflammation, promote detoxification, and regulate fluid balance, all of which are crucial for individuals with CKD.

AIM AND OBJECTIVES

1. To review *Pashanabhedadi Kwatha* on the basis of *Rasa Panchaka*, analyzing its components and their implications on Chronic Kidney Disease.
2. To study the probable mode of action of *Pashanabhedadi Kwatha*, emphasizing on its effects on *doshic* imbalances, *ama, agni, srotas*, and phytochemical constituents.

MATERIALS AND METHODS

References related to *Pashanabhedadi Kwatha* were searched and relevant literature was reviewed from Samhitas, modern literature, and journal articles. Additionally, commentaries from contemporary scholars were reviewed to gather comprehensive insights into the subject.

REVIEW OF LITERATURE

***Nirukti* (Etymology) of *Pashanabhedadi Kwatha*:**

1. *Pashanabheda*:

Derived from two Sanskrit words:

Pashana meaning 'stone'. *Bheda* meaning to 'break or split'.

Thus, *Pashanabheda* refers to a substance that has the ability to break or dissolve stones, primarily in the context of kidney stones or urinary calculi.

2. *Adi:*

Adi means 'and others' or 'beginning with'.

It indicates that *Pashanabheda* is the primary herb, but other herbs are also included in the formulation.

3. *Kwatha*:

Kwatha refers to a 'decoction', which is a traditional Ayurvedic method of preparing herbal medicines by boiling the herbs in water to extract their active ingredients.

PASHANABHEDADI KWATHA:

पाषाणभिद् मधुकवासकगोक्षुराणां
गन्धर्वहस्तकृतमालकपिप्पलीनाम्
क्वाथः किल त्रुटिशिलाजतुसूर्यभक्ता
चूर्णान्वितः सपदि हन्ति हि मूत्रकृच्छ्रम् ।

(Ref – *B.R. Mutrakricchra Rogadhikara* ,34/25)

Table no. 1: Ingredients

Sl no.	Drugs name	Useful part	Proportion
1.	*Pashanabheda*	Root	1 part
2.	*Yastimadhu*	Root	1 part
3.	*Vasa*	Leaves	1 part
4.	*Gokshura*	Root	1 part
5.	*Eranda*	Root	1 part

6.	*Aragwadha*	Fruit pulp	1 part
7.	*Pippali*	Root	1 part
8.	*Shilajatu*	Exudate	1 part
9.	*Ela*	Seed	1 part
10.	*Souvarchala lavana*	-	1 part
11.	*Sita*	-	1 part

Table no. 2: *Rasa Panchaka* of *Pashanabhedadi Kwatha*

Sl no.	***Drugs***	***Rasa***	***Guna***	***Virya***	***Vipaka***	***Dosha - Karma***
1	***Pashanabheda***[2] **(**Bergenia ligulata)	*Kashaya, Tikta*	*Laghu, Snigdha, Tikshna*	*Sheeta*	*Katu*	*Tridoshaghna, Mutravirechaniya, Shothahara, Ashmaribhedana, Basti sodhaka*
2	***Yastimadhu***[3] (Glycyrrhiza glabra)	*Madhura*	*Guru, Snigdha*	*Sheeta*	*Madhura*	*Vatapittaghna, Mutrala, Mutravirajaniya, Sothahara, Rasayana*
3	***Vasa***[4] (Adhatoda vasica)	*Tikta, Kashaya*	*Ruksha, Laghu*	*Sheeta*	*Katu*	*Kaphapittaghna, Mutrajanana, Shothahara, Swasahara,Hridya*
4	***Gokshura***[5] (Tribulus terrestris)	*Madhura*	*Guru, Snigdha*	*Sheeta*	*Madhura*	*Vatapittaghna, Mutrala,Hridya Ashmarinashana, Shothahara, Basti sodhaka*
5	***Eranda***[6] (Ricinus communis)	*Madhura, (**Anurasa** -Katu, Kashaya)*	*Snigdha, Tikshna, Sukshma*	*Ushna*	*Madhura*	*Kaphavataghna, Mutravisodhana, Shothahara,Hridya Vedanasthapana, Angamarda-prasamana*
6	***Aragwadha***[7] (Cassia fistula)	*Madhura*	*Guru, Mridu, Snigdha*	*Sheeta*	*Madhura*	*Vatapittaghna, Mutrajanana, Rakta sodhak, Shothahara,Hridya*
7	***Pippali***[8] (Piper longum)	*Katu (**Adra-** Madhura)*	*Laghu, Snigdha, Tikshna (**Adra-** Guru)*	*Anushna (Adra-Sita)*	*Madhura*	*Vatakaphaghna, Mutrala,Vrisya, Deepana,Balya Rasayana, Swasahara*

8	***Shilajatu***[9] (Asphaltum Punjabinum)	*Anamla, Kashaya*	*Laghu, Ruksha*	*Anushna*	*Katu*	*Tridoshaghna Mutrakricchrahara, Rasayana, Chedi, Yogavahi*
9	***Ela***[10] (Elletaria cardamomum)	*Katu, Madhura*	*Laghu, Ruksha*	*Sheeta*	*Madhura*	*Tridoshaghna, Mutrajanana,Hridya Deepana,Pachana, Anulomana*
10	***Souvarchala lavana***[11]	*Katu, Lavana*	*Laghu, Vishada, Sukshma, Snigdha*	*Ushna*	*Lavana*	*Tridoshaghna, Deepana,Pachana, Vibandhanasaka, Udgara sodhaka*
	Sita	*Madhura*	*Guru, Snigdha, Sara*	*Sheeta*	*Madhura*	*Vatapittaghna, Mutrala,Dahahara, Shramahara*

Dosage of Administration: Approximately 100 ml in divided doses twice daily before food.
In classical texts, recommended dosage of Kwatha is mentioned as 2pala (98ml).

Table no. 3: Chemical constituents, Pharmacological action and Research studies conducted in the Drugs.

Sl no.	Drugs	Chemical constituents	Pharmacological action	Research studies
1	***Pashanabheda***	Bergenin, afzelechin, leucocyanidin, gallic acid, tannic acid, methyl gallate , (+)-catechin, (+)-catechin -7-O-ß-Dglucopyranoside, 11-O-galloyl bergenin, a lactone- Paashaanolactone . It also contains sterols viz., sitoindoside I, ß- sitosterol and ß-sitosterol-Dglucoside, glucose (5.6 %), tannin (14.2-16.3 %), Calcium oxalate, mucilage and wax.	Anti-urolithic, Diuretic, Cardioprotective, Hepatoprotective, Anti-inflammatory	Alcoholic extract (500 mg/kg body weight) of roots of B. ligulata was found to be effective in increasing urinary electrolyte concentration of Na+, K+ and Cl- which indicates its significant diuretic activity. Methanolic extract of B. ligulata and bergenin exhibited marked dissolution of urinary calculi both in kidney and urine constituents[12,13].
2	***Yastimadhu***	Glycyrrhizin, glycyrrhizic acid, glycyrrhetic acid, liquiritin, isoliquiritin, liquiritic acid, neoisoliquiritin, liquiritogenin, isoliquiritogenin, glabrine, glabranine, licuraside,	Anti-diabetic, Anti-inflammatory, Anti-bacterial, Antitussive and expectorant activity	Root extract of Glycyrrhiza glabra was found to have anti-lipidemic and antihyperglycemic activity at low doses. It is reported that glycyrrhetinic acid in liquorice extract gives anti-inflammatory effect similar

		licochalcones a & b, glabridin, hispaglabridin A & B, glabrolide, asparagine, sugars, resin and starch.		to glucocorticoids and mineralocorticoids[14].
3	***Vasa***	Vasicine (peganine), vasicinine, deoxyvasicine, vasicinone, B-sitosterol, Kaempferol, quercitin, 3-sophoroside, luteolin, tritriacontane, adhatodic acid, Carotene, vasakin, vasicinol 1q-hydroxyvasicine, vit-C, B glucoside-galactose, vasicol, vasicinol, vasicinolone, adhatodine, arachidic acid, be-henic acid, linoleic acid, oleic acid, adhavasinone, anisotine, vasicolone, vasicolinone, alkaloids and essential oil.	Anti-diabetic, Thrombolytic, Cardioprotective, Anti-inflammatory	Several studies suggested that A. vasica also has a potent anti-diabetic property (46). It has an antihyperglycemic effect in the Streptozotocinproduced hyperglycemic model in rats (100, 200, 400 mg/kg/day). The anti-inflammatory effect of carrageenan and formalin was assessed in rat paws using an ethanolic extract of vasaka (200-400 mg/kg/per oral)[15].
4	***Gokshura***	Fruits - Chlorogenin, diosgenin, gitogenin, rutin, rhamnose Fruits and leaves - Flavanoid component like kaempferol, Kaempferol-3-glucoside, Kaempferol-3-rutinoside and a new acylated Kaempferol-3-glucoside (tribuloside, its constitution was established as kaempferol-3-B-D-(6"-P-coumaroyl)- glucoside. Roots - Campesterol, B-sitosterol and stigmasterol, neotigogenin Three saponins have been identified in leaves and two in roots. Aerial parts -Astragalin ,dioscin, diosgenin, hecogenin, ruscogenin, furostanol glycoside,	Anti-urolithic, Diuretic, Anti-diabetic, Cardioprotective, Anti-inflammatory	The aqueous extract of TT, in oral dose of 5 g/kg, elicited a positive diuresis, which was slightly more than that of furosemide. Methanolic and aqueous extracts of TT are shown to possess significant anti-hypertensive activity by direct arterial smooth muscle relaxation and membrane hyperpolarization in spontaneously hypertensive rats. TT was found to inhibit stone formation in various models of urolithiasis using sodium glycolate and ethylene glycol[16].

		spirosterol saponin, terrestrosides A-F saponins C and G. Seeds - Harmine Herbs - Harman		
5	***Eranda***	Seeds & Leaves - Ricinine (toxic alkaloid), 1-methyl-3-cyano-4methoxy-2-pyridone Seed coat - Lupeol, lipids, phosphatides etc. Seed oil - Arachidic, ricinoluc, palmitic, strearic etc., acids; hexa decanoic, hydrocyanic & uric acids; squalene and tocopherols.	Hepatoprotective, Anti-inflammatory, Anti-asthmatic, Bone regenerative, Analgesic,Anti-bacterial	A study was conducted to test the antidiabetic activity of ethanolic extract of R. communis roots and have been found to be effective against hypoglycemic rats. In one of the studies, the anti-inflammatory action of R. communis extract was tested by using the hexane, acetone, and methanol fractions. The methanolic extract showed significant anti-inflammatory activity which may be due to flavonoids present in it[17].
6	***Aragwadha***	Stem bark - Lupeol, β-sitosterol and hexacosanol Fruits pulp - 1,8-dihydroxy-3-anthraquinone derivative Fruit tissue - Rich source of potassium, calcium, iron, and manganese Flowers - Kaempferol, leukopelargonidin tetramer, rhein, fistulin, triterpenes Leaves - Anthraquinones like rhein, chrysophanol, physcion, Heptacosanyl-5-hydroxypentadec-2-enoate and octacosan-5, 8-diol. Seeds – Galactomannan, linoleic, oleic, stearic and palmitic acids and caprylic and myristic acids 5-(2-hydroxyphenoxymethyl) furfural, (2‘S)-7-hydroxy-5-hydroxymethyl-2-(2‘-hydroxypropyl) chromone, benzy-2 - hydroxy -3, 6-dimethoxy benzoate, and benzyl 2β-O-D-glucopyranosyl-3,6-dimethoxy benzoate, together with other	Hepatoprotective, Anti-diabetic, Anti-inflammatory, Anti-pyretic,	Methanolic extract of bark and leaves at 500 mg/kg dose showed significant anti-hyperglycemic and anti-lipidemic activity than 250 mg/kg in the STZ-nicotinamide-induced DM rats. A study based on aqueous extract of C. fistula was performed and results exhibited dose-dependent reduction in total bilirubin, alkaline phosphatase, serum glutamic oxaloacetic transaminase (SGOT), serum glutamic pyruvic transaminase (SGPT), aspartate transaminase, alanine aminotransferase and increase in total protein levels and extract-treated groups show mild hepatatocytic damage compared to the CCl4 treated group[18].

		compounds, 5-hydroxymethylfurfural, (2‘S)-7-hydroxy-2-(2‘-hydroxypropyl)-5-methylchromone, and two oxyanthraquinones, chrysophanol and chrysophanein.		
7	***Pippali***	Resin, Volatile oil, starch, gum, fatty oil, inorganic matter, Essential oil. Mono and sesquiterpenes, caryophyllene (mainly), Piperine, Piperlongumine, Piperlonguminine, Pipernonaline, Piperundecalidine, Pipercide, Sesamin, B-sitosterol four aristolactams (cepharanone B. aristolactum All. Piperlactum A and piperolactam B) five 4-5 dioxoaporphines, an alkaloid charicine.	Anti-diabetic Hypocholesterolemic, Anti-inflammatory, Analgesic,Anti-asthmatic	The fruit decoction showed anti-inflammatory activity against carrageenin induced rat paw edema. Oral administration of dried fruits has shown significant anti-hyperglycemic, antilipidperoxidative and antioxidant effects in diabetic rats comparable to that of the standard reference drug glibenclamide. Methyl piperine significantly inhibited the elevation of total serum cholesterol, and the total cholesterol to HDL cholesterol ratio, in rats fed with a high cholesterol diet[19].
8	***Shilajatu***	Fulvic acid, humic acid, amino acid, albuminoids, resin, benzoic acid, dibenzo-alpha-pyrones, hippuric acid, fatty acid, gums, trace elements (Se, Sr, Rb), minerals (Fe, Zn, Mg), carbohydrate.	Diuretic, Cardioprotective, Anti-inflammatory, Analgesic	According to an animal study, the daily treatment of 100 mg/kg of Shilajit has been shown to reduce the hyperglycaemic reaction to streptozotocin starting on day 14 of continuous and consistent dosing, In an animal experiment including the injection of 85 mg/kg-1 of isoproterenol to cause myocardial damage, it was shown that shilajatu preserved the maximum ±dp/dt, decreased the concentration of serum cardiac troponin and reduced the level of heart damage[20].

9	***Ela***	Bornneol, Camphene, p-cymene, geraniol, Heptane, D- Limonene, Linalool, Menthone, Methylheptenone, Myrcene, Nerol, Nerylacetete, a- & B-Pinenes, saibenene, a- & B-terpeneols, N- alkanes, Ascaridole, Camphor, Citral, Citronellal, Farnesol, Sitosterol, Thijene.	Diuretic, Cardioprotective, Hypocholesterolemic, Anti-inflammatory	Crude extract (1, 3, and 10 mg/kg) from fruit was evaluated for diuretic activity in Sprague–Dawley rats,Results revealed that extract at 1, 3, and 10 mg/kg increased the urinary volume to 4.13, 5.05, and 5.54 ml, respectively, indicating diuretic effect and also enhanced Na+ and K+ excretion. The ethanolic extract was evaluated for hepato-protective effect against high carbohydrate high fat (HCHF) diet-induced obese Male Wistar rats. It observed that HCHF diet feeding in rats developed glucose intolerance, increased peritoneal fat deposition, dyslipidemia, increased fat deposition, and inflammation in the liver compared to control rats[21].
10	***Souvarchala[22] lavana***	Sodium Chloride - 97.8% w/w Sodium Sulphide - 0.918% Iron 0.030% w/w Insoluble matter - 0.07% w/w.	Digestive, Laxative	
11	***Sita***	Water content, Albumin, Gavenin, Fat, Calcium oxalate.	Laxative, Anti-inflammatory, Anthelmintic	Sugar dissolved in water is said to have a diuretic effect. When injected into veins of animals, it is said to be powerfully diuretic[23].

Table no. 4: Study of *Rasa*

Rasa	**No. of drugs**	**Percentage**
Madhura	6/11	54.54
Amla	0/11	00.00
Lavana	1/11	09.09
Katu	2/11	18.18
Tikta	2/11	18.18
Kashaya	3/11	27.27

Table no. 5: Study of *Guna*

Guna	**No. of drugs**	**Percentage**
Guru	4/11	36.36
Laghu	5/11	45.45
Ruksha	2/11	18.18
Snigdha	8/11	72.72

Tikshna	3/11	27.27
Mridu	1/11	09.09
Sukshma	2/11	18.18
Vishada	1/11	09.09
Sara	1/11	09.09

Table no. 6: Study of *Virya*

Virya	**No. of drugs**	**Percentage**
Ushna	2/11	18.18
Sheeta	7/11	63.63
Anushna	2/11	18.18

Table no. 7: Study of *Vipaka*

Vipaka	**No. of drugs**	**Percentage**
Madhura	7/11	63.63
Amla	0/11	00.00
Katu	3/11	27.27

Table no. 8: Study of *Doshaghnata*

Doshaghnata	**No. of drugs**	**Percentage**
Vatahara	0/11	00.00
Pittahara	0/11	00.00
Kaphahara	0/11	00.00
Vata Pittahara	4/11	36.36
Pitta Kaphahara	1/11	09.09
Vata Kaphahara	2/11	18.18
Tridoshahara	4/11	36.36

DISCUSSION

MODE OF ACTION OF *PASHANABHEDADI KWATHA*:

According to *Rasa panchaka*:

From the *Rasa panchaka* analysis, it has been observed that in *Pashanabhedadi Kwatha,* there is predominance of *Madhura* (54.54%), *Kashaya* (27.27%), *Katu* (18.18%)*, Tikta* (18.18%) rasa in slight majority , *Snigdha* (72.72%)*, Laghu* (45.45%)*, Tikshna* (27.27%)*, Ruksha* (18.18%) and *Sukshma* (18.18%) *guna*, *Madhura* (63.63%) and *Katu* (27.27%) *Vipaka*, *Ushna* (18.18%) and *Sheeta* (63.63%) *Virya, Vata-kaphahara* (18.18%), *Vata-pittahara* (36.36%) and *Tridoshahara* (36.36%) properties.

- *Madhura rasa* has a *tridosha shamana* effect, but primarily pacifies *Vata* and *Pitta*. It is *dhatu vardhaka*, promoting tissue regeneration and healing, which is important for rejuvenating kidney cells in CKD.
- *Katu rasa* helps in *kapha-vata shamana*, clearing *srotarodha* (blockages) and promoting detoxification by enhancing kidney function.
- *Tikta* and *Kashaya rasas* are *Kapha-pittahara* in nature and promote *Ama pachana* , which is vital for clearing *ama* (toxins) from the system that accumulates in CKD, leading to the blockage of *srotas*.

- *Snigdha guna* helps to reduce *Vata dosha*, which is aggravated in CKD, causing dryness and depletion of kidney tissues. This property aids in restoring the lost lubricity and preventing further damage to the kidney tissues.
- *Laghu guna* helps in improving *Agni* (digestive fire), stimulating metabolism, and enhancing the bioavailability of nutrients that support kidney function.
- *Tikshna guna* promotes deeper penetration of the herbs, thus aiding in breaking down ama and promoting the elimination of waste products via the kidneys.
- *Ruksha* and *Sukshma gunas* aid in reducing excess *kapha* and facilitating the removal of metabolic waste and toxins.
- *Visada* and *Sara Guna* promote *sodhana,* and helps in maintaining proper kidney function by facilitating the flow of *mutra* (urine).
- *Katu Vipaka* helps to clear obstruction in the *Mutravaha srotas* and enhances the elimination of toxins, preventing further kidney damage.
- *Sheeta virya* helps to pacify *Pitta dosha*, which is often elevated in CKD, resulting in inflammation. It provides a cooling effect, reducing inflammation and heat associated with kidney malfunction.
- *Ushna virya* aids in the reduction of *Kapha* accumulation in the kidneys, promoting proper filtration and cleansing, thus preventing obstruction in urinary pathways.

Probable action on Dosha:

Pashanabhedadi Kwatha targets *Vata* and *Pitta* imbalances, which are major contributors to CKD pathology. *Vata* causes degeneration of kidney tissues, while *Pitta* contributes to inflammation. By balancing these *doshas*, the *kwatha* helps to reduce the progression of CKD. Its *Tridoshahara* property ensures the overall equilibrium of all three *doshas*, vital for maintaining renal health.

The *Vata-Kaphahara* action addresses the common combination of dry (*Vata*) and obstructive (*Kapha*) conditions seen in CKD, such as renal fibrosis and blockage of *srotas.*

Probable action on *Ama, Agni, Srotas*:

Pashanabhedadi Kwatha stimulates Agni through its *Laghu, Tikshna*, and *Katu guna*, enhancing digestion and metabolism, preventing the formation of *ama*, which is a key factor in the pathogenesis of CKD. By strengthening *Agni, Pashanabhedadi Kwatha* prevents further toxic accumulation and ensures proper digestion and elimination of waste products via urine.

The disease mainly exhibits *Sanga* and *vimarga gamana* type of *srota dushti*. *Mutravaha srotas* are affected in CKD due to the obstruction caused by *ama.* The action of *Pashanabhedadi Kwatha* on kapha and Vata through its *Katu, Tikta*, and *Kashaya rasas*, along with its *Sukshma guna*, helps clear these channels. This facilitates the unimpeded flow of urine, preventing blockages, and improving renal filtration.

Probable action on Phytochemical constituents:

Glycyrrhizin, Glycyrrhizic Acid, Kaempferol compounds of *Pashanabhedadi Kwatha* exhibit potent anti-inflammatory and antioxidant properties, which helps to reduce oxidative stress and inflammation in CKD. Flavonoids (such as Kaempferol, Luteolin) contribute to reducing inflammation and protecting renal tissues from damage. Vasicine,Vasicinol aid in diuresis, promoting the excretion of excess fluids, which is beneficial in managing fluid balance in CKD. Saponins and Triterpenes compounds aids potential in enhancing renal function and protecting against kidney damage. Potassium, Calcium, Iron, Manganese essential minerals found in fruit tissues and other parts of the plant helps in maintaining electrolyte balance and overall kidney health. Beta-sitosterol, Campesterol improve renal blood flow and function, supporting better kidney performance. Resins, essential oils helps in detoxifying the body, reducing the accumulation of harmful

substances in the kidneys. Benzoic acid, Fulvic acid helps in reducing fibrosis and scarring of renal tissues, which is a common issue in CKD.

Probable mode of action in modern point of view:

Pashanabhedadi Kwatha possess antiurolithic and diuretic properties that helps in the prevention and expulsion of kidney stones, while its antioxaluria effect aids in reducing oxalate levels in the urine. The antioxidant, anti-inflammatory, and analgesic properties protect kidney tissues from oxidative stress and inflammation, thereby slowing the progression of CKD. Additionally, its cardioprotective, hepatoprotective, and immunomodulatory effects support overall organ function, reducing the risk of complications. The antiviral, antibacterial, and antimicrobial activities help prevent infections, a common issue in CKD patients. Its antidiabetic and anti-hypercholesterolemic properties may also benefit individuals with CKD, as diabetes and hypercholesterolemia are common comorbidities. Furthermore, its adaptogenic and anti-aging properties enhance resilience against chronic stress, while its antispasmodic, anxiolytic, and sedative effects promote comfort and mental well-being.

This formulation is particularly effective in addressing *Vata dosha*, which is pivotal in the *samprapti* (pathogenesis) of *CKD*. The deranged functioning of *Vata* leads to the vitiation of other *doshas*, resulting in the formation of *Ama* and *Srota Avarodha*. The vitiated *doshas* travel through the *sukshma siras* and *dhamanis*, lodging in the *basti*. Further vitiation of *Vata* then leads to *Vimarga Gamana*, culminating in *CKD. Pashanabheda*, with its *Mutrala* and *Lekhana* properties, aids in breaking down stones and clearing the urinary tract, thus relieving *Srotarodha. Yastimadhu*, with its *Madhura* and *Sheeta* properties, acts as a *Vranaropana* agent, soothing the renal tissues and reducing inflammation. *Vasa*, being *Sheetala* and *Kaphapitta-shamaka*, alleviates inflammation and restores balance in the urinary system. *Gokshura,* with its *Mutrala* and *Vatanulomana* properties, aids in the proper flow of urine while pacifying aggravated *Vata. Eranda* acts as a *Vatanashaka* and *Mutrala,* providing relief from pain and promoting the elimination of excess fluids. *Aragwadha phala majja* is a potent *Sodhana* and *Lekhana* drug, that helps in detoxification and elimination of *Ama*, which is essential in the prevention of further kidney damage. *Pippali* enhances *Agnideepana*, correcting *Agnimandya* and reducing the accumulation of *Ama. Ela* is a *Vatanulomana* drug that helps to regulate *Vata* and maintain the smooth flow of urine. *Shilajit* is a powerful *Rasayana* that strengthens renal tissues, improves kidney function, enhances protein and nucleic acid metabolism that acts as a catalyst for the energy providing reactions and promotes overall vitality. Lastly, *Souvarchala lavana* has *Agnideepana* and *Vatanulomana* properties, helping to balance *Vata* and improve digestion, further supporting the breakdown and elimination of toxic metabolites. Thus *Pashanabhedadi Kwatha*, with its *Deepana* and *Pachana* properties, corrects *Agnimandya* and alleviates *Ama*. Its *Lekhana* and *Sodhana* properties cleanse the *srotas*, ensuring proper movement of *Vata*. Additionally, its *Mutrala* and *Vatanulomana* effects help expel accumulated *mutra* with greater force. Consequently, this formulation effectively disrupts the *Dosha-Dushya Sammurchana* of *Vrikka vikara*.

Probable action in other *Vyadhis:*

- ***Mutravaha Srotas vikara:***

a. *Mutraghata* (Urinary Retention): *Pashanabhedadi Kwatha* is effective in managing retention of urine due to its diuretic properties, helping to clear obstruction in the urinary tract.
b. *Mutrakricchra* (Dysuria): It relieves painful urination by clearing Ama (toxins) from the urinary tract.
c. *Ashmari* (Urinary Calculi): It is commonly prescribed for the dissolution and expulsion of kidney stones due to its litholytic action.

- **UTIs (Urinary Tract Infections):** Its antimicrobial and anti-inflammatory properties make it effective in combating infections of the urinary tract.

- ***Shotha* (Edema):** The diuretic effect of *Pashanabhedadi Kwatha* aids in reducing water retention, commonly seen in conditions of generalized edema, heart failure, or nephrotic syndrome.
- ***Amavata* (Rheumatoid Arthritis):** In patients where *Vata* and *Ama* are prominent, *Pashanabhedadi Kwatha* can help reduce inflammation and alleviate joint pain by expelling toxins and balancing Vata.
- ***Prameha* (Diabetes):** In diabetic patients, especially with renal complications, it helps to manage urine abnormalities and prevent further kidney damage by promoting proper urinary function.

CONCLUSION

Pashanabhedadi Kwatha is a multifaceted formulation with significant clinical utility in conditions related to the urinary system, kidney health, and detoxification. It primarily acts on *Kapha* and *Vata* doshas, making it effective in managing diseases involving fluid retention, urinary obstruction, and inflammation. Additionally, its therapeutic usages as a diuretic, nephroprotective, and anti-lithiatic agent render it a valuable medication in Ayurvedic treatment protocols for kidney and urinary disorders. *Pashanabhedadi Kwatha* works through various mechanisms to manage the pathophysiology of CKD. Its antioxidant, anti-inflammatory, diuretic, nephroprotective, anti-lithiatic, and detoxifying actions contribute to the slowing down of CKD progression, management of symptoms, and protection of renal tissues from further damage. By balancing the doshas and addressing key aspects of CKD, it offers a holistic approach in managing Chronic kidney disease in Ayurveda.

REFERENCES

1. Mishra Siddhi Nandan,Bhaisajya Ratnavali of Kaviraj Govind Das Sen,Ch-34/25, Chaukhamba Surbharti Prakashan,Varanasi.
2. *Pashanabheda:* D.G.V by Dr. J.L.N Shastry Vol-2, Pg no:754-75*; D.G.V* by Prof. P.V Sharma Vol-2, Pg no: 650-652.
3. *Yastimadhu:* D.G.V by Dr. J.L.N Shastry Vol-2, Pg no:152-156*; D.G.V* by Prof. P.V Sharma Vol-2, Pg no: 253-256, API Vol-1, Pg no:215-217.
4. *Vasa:* D.G.V by Dr. J.L.N Shastry Vol-2, Pg no:407-410*; D.G.V* by Prof. P.V Sharma Vol-2, Pg no: 241-244, API Vol-1, Pg no:207-208.
5. *Gokshura:* D.G.V by Dr. J.L.N Shastry Vol-2, Pg no:98-102*; D.G.V* by Prof. P.V Sharma Vol-2, Pg no: 632-634, API Vol-1, Pg no:64-66.
6. *Eranda:* D.G.V by Dr. J.L.N Shastry Vol-2, Pg no:483-487*; D.G.V* by Prof. P.V Sharma Vol-2, Pg no: 58-62, API Vol-1, Pg no:58-60.
7. *Aragwadha:* D.G.V by Dr. J.L.N Shastry Vol-2, Pg no:200-204*; D.G.V* by Prof. P.V Sharma Vol-2, Pg no: 170-173, API Vol-1,Pg no:12-14.
8. *Pippali:* D.G.V by Dr. J.L.N Shastry Vol-2, Pg no:452-458*; D.G.V* by Prof. P.V Sharma Vol-2, Pg no: 275-279, API Vol-4.
9. *Shilajit:* Shastri Kashinath Pt.,Chaturvedi Gorakha Natha, Chaukhamba Bharati Academy,Varanasi,Vidyotini Hindi Commentary, Charak Samhita Chikitsa Sthana Ch-1.3.
10. *Ela:* D.G.V by Dr. J.L.N Shastry Vol-2, Pg no:527-530*; D.G.V* by Prof. P.V Sharma Vol-2, Pg no:*719*-721.
11. *Souvarchala lavana:* D.G.V by Dr. J.L.N Shastry Vol-3, Pg no:79*; D.G.V* by Prof. P.V Sharma Vol-3, Pg no: 650-652.
12. Chitranjan Das et al. A Literary Review and Therapeutic Action of Pashanbheda, JAIMS,Vol-7, July 2022.
13. Gurav & Gurav, IJPSR, 2014; Vol. 5(5): 1630-1642.

14. Damle Monica, International Journal of Herbal Medicine 2014; 2(2): 132-136.
15. Ambreen Shoaib / An ethnobotanical review of Adhatoda vasica, 2021, 67(4): 248-263.
16. Chhatre S, Nesari T, Somani G, Kanchan D, Sathaye S. Phytopharmacological overview of Tribulus terrestris. Phcog Rev 2014;8:45-51.
17. Asian Pacific Journal of Tropical Medicine 11(3):p 177-185, March 2018.
18. Rahmani AH. Cassia fistula Linn: Potential candidate in the health management. Phcog Res 2015;7:217-24.
19. IJPSRR, Volume 5, Issue 1, November – December 2010.
20. R. Kiran et al., Review; Chemical Characteristics and Therapeutic Potential of Asphaltum Punjabianum (Shilajit),2019.
21. Kumar and Kumar, IJPSR, 2021; Vol. 12(8): 4122-4131.
22. Mestry et al., World Journal of Pharmaceutical Research, 2024.
23. Richet and M. Martin, Med. Record. XXI, 394.