



## EFFECT OF AYURVEDA TREATMENT MODALITY IN IMPROVING CHRONIC KIDNEY DISEASE: A CASE REPORT

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<https://doi.org/10.46607/iamj17p8062024>

(Published Online: September 2024)

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Article Received: 20/08/2024 - Peer Reviewed: 17/09/2024 - Accepted for Publication: 24/09/2024.



### ABSTRACT

Chronic kidney disease (CKD) is a progressive condition augmenting over years, entailing loss of kidney functions, affecting more than 10% of the general population worldwide. The solution of choice is either kidney transplantation or blood purification treatments such as hemodialysis (HD). Such medical procedures are expensive & arduous for the patients, adversely impacting their quality of life. Hence alternative treatment modalities are copiously perceived seeking restoration. In the present study, 50 year-old female patient approached the hospital OPD for consultation with complaints of weakness, constipation, reduced appetite, weight loss, breathlessness etc. Patient was advised *Ayurveda* treatment along with dietary restriction. After 2 months of treatment significant improvement was seen, there was a gradual decrease in Serum Creatinine levels from 6.05 mg/dl to 2.20 mg/dl, Blood Urea levels from 80mg/dl to 64mg/dl and Uric acid levels from 4.4mg/dl to 3.0 mg/dl. The case clearly reveals the noteworthiness of *Ayurveda* treatment modality in the management of CKD.

**Keywords:** Chronic kidney disease, Dialysis, Kidney transplant, *Mutravaha strotas vikar*

**Key message:** *Ayurveda* treatment modality is capable of reviving kidney functions.

## INTRODUCTION

CKD is defined as a persistent abnormality in kidney structure or function (eg, glomerular filtration rate [GFR]  $<60$  mL/min/1.73 m<sup>2</sup> or albuminuria  $\geq 30$  mg per 24 hours) for more than 3 months,<sup>[1]</sup> The Glomerular filtration rate (GFR) plays a crucial role in CKD and based on GFR levels CKD is classified into five stages i.e. Stage 1,2,3,4,5 respectively, depicting normal ( $>90$  mL/min), mild (60-89 mL/min), moderate (30-59 mL/min), severe (15-29 mL/min) and end stage CKD ( $<15$  mL/min).<sup>[2]</sup> Declining age, family history, history of diseases such as diabetes, hypertension (High Blood Pressure), polycystic kidney disease (PKD), autoimmune diseases, infections, Obstructive conditions, prolonged use of medications or exposure to toxic substances contribute as common risk factors for disease progression. The disorder is associated with a wide spectrum of presenting features such as breathlessness, nausea, loss of appetite, weight loss, proteinuria, gout, fatigue, anemia, weakened bones, itching, cognitive impairment and trouble concentrating, edema, fluid retention etc. Its presentation seems similar to *Mootravaha srotas vikar* (disorders of urinary system) mentioned in *Charak*, depicting clinical manifestations as voiding too much urine or complete cessation of urine, impaired urine composition, passage of thick urine associated with pain etc. The management adopted aims at enhancing the *Agni* (digestive fire), balancing *Tridoshas* (biological humours), *Srotoshodhan* (patency of circulatory channels) & *Rasayana* (rejuvenation) therapy.

### Case report

#### Patient information

A 50-year-old female patient, from Delhi, Hindu by religion, moderate built, came to the outpatient department (OPD) of *Ayurveda* hospital on 13Feb 2023 with complaints of nausea, vomiting for 15 days and complaints of weakness, constipation, reduced appetite, weight loss, breathlessness, frothy urine, swelling, gas formation in abdomen, bitterness in mouth for 2 months. Her ultrasonography findings (6.2.23) suggested both kidneys shrunken & mildly echogenic and hemoglobin levels were 7gm% and patient had taken blood transfusion twice.(Table:1)

#### Medical history of past illness

The patient had diabetes mellitus and hypertension for 5 years and was on allopathic treatment for the same. She was a known case of CKD since 2months, took allopathic treatment for the same. There was no history of bronchial asthma or tuberculosis or dialysis, or any other major medical or surgical history. Patient had history of blood transfusion twice and was on Inj. EPO.

#### Personal history

Non vegetarian, no history of addiction or anxiety was present.

Bowel: hard & constipated with mild bloating, Bladder: urine frequency was 5-6 times in a day, Sleep was adequate, and Appetite reduced.

#### Family history

No significant family history.

#### Clinical Findings

On general examination, the patient was moderately built. Blood pressure was 135/90 mmhg and pulse was 90/min. She had pallor and pedal edema was present. On the examination of bulbar conjunctiva, icterus was absent. Central cyanosis, digital clubbing, cervical and mandibular lymphadenopathy were absent. Tongue was coated. On systemic examination, no circulatory, respiratory or digestive abnormality was noticed. Per abdominal examination did not reveal anything significant.

#### Dashavidha pareeksha

*Prakriti* (body temperament) was *Vatapitta*; *Vikriti* was *Vikritisamsamveta*, *Satva* (psyche) was *Madhyama* (moderate), *Sara* (tissue excellence), *Samhanana* (organ compactness), *Aahara shakti* (food intake power), *Satmya* (suitability), *Pramana* (body measurement) were *Madhyama*. *Vyayama Shakti* (exercising power) was *Madhyama*.

#### Ashtavidha pareeksha

*Nadi Pariksha* (pulse examination) revealed *Vata-pittagati* with a pulse rate of 90/min. *Mala* (bowel) was hard and constipated, *Mutra* (urine) was *Phenil* (frothy) with frequency of 4-5 times in a day, *Shabda* (voice) was *Sadharana* (normal), *Jihva* (tongue) was *Saam* (unclean /coated), *Sparsha* (touch) was

*Anushnasheetata*, *Drik* (vision) was *Samanya* (normal) in terms of movement appearance, eye contact was made, *Akriti* (body build) was *Madhyama* (moderate).

### Diagnostic assessment

The diagnosis was made based on clinical manifestations such as nausea, vomiting, weakness, constipation, reduced appetite, weight loss, breathlessness, frothy urine, swelling. The ultrasonography examination on November 6, 2023, revealed both kidneys shrunken & mildly echogenic and the laboratory investigation, In accordance with these previous investigations and findings of the blood examination depicting raised Serum Creatinine levels (6.05 mg/dl), confirmed the diagnosis of CKD. From the *Ayurveda* perspective, the symptoms resembled the classical description of *Mutravaha srotas vikara*. Hence, the *Ayurveda* diagnosis was made as *Mutravaha srotas vikara*.

### Therapeutic Intervention

Before beginning the treatment, informed consent was obtained from the patient and the intervention plan was made based on the treatment of *Mutravaha srotas vikara*. After thorough examination of the patient, *Shaman* (pacification) therapy (Table: 2)(Table: 3) was started, along with dietary recommendations. Patient was advised to avoid fried, fatty, spicy, processed, canned food & beverages, salads, alcohol, vegetables such as cabbage, spinach, brinjal, peas, beans, tomatoes etc. and fruits such as orange, lemon, banana etc. Patient was advised light and easily digestible food, fruits like apple, guava, pear, vegetables like bottle gourd, sponge gourd, round gourd, pointed gourd etc. It was advised to boil the vegetables for 2-3 min and strain the water prior to its consumption.

### Follow up & Outcome

A significant improvement was seen after 8 weeks of treatment. There was a reduction in symptoms such as frothy urine and swelling in the body. A complete cure was seen in breathlessness, nausea, vomiting, constipation but reduced appetite and weakness persisted. Reduction in serum creatinine, uric acid, blood urea and BUN (Blood

Urea Nitrogen) and increase in Serum Proteins was noted after 2 months of treatment. Patient had follow-up after 1 month (15-5-23) in which she depicted overall improvement. No adverse events were reported during the entire course of treatment. (Table: 4)

## DISCUSSION

Conventional CKD treatment has its own drawbacks, they are expensive therefore not affordable by all, hence alternate remedies are perceived for curbing the disease progression and improving quality of life. There exists no direct reference of the disease condition in *Ayurveda classics*, nevertheless a detailed analysis of the *Lakshanas* (signs & symptoms), the state of *Doshas* (Biological humors), *Dhatus* (tissues), *Agni* (digestive fire), *Srotasas* (circulatory channels) etc. is capable of providing further guidance in understanding its *Samprapti* (pathogenesis) and formulating *Ayurveda* management for the same.<sup>[3]</sup>

Hence pathogenesis can be described as the kidney and bladder being the roots of the channels carrying urine, and the vitiated *Doshas*, while coming in contact with these channels, obstruct them, resulting in kidney disease.<sup>[4]</sup> Hence while treating CKD on *Ayurveda* principles, it is considered that impairment of renal function occurs owing to derangement of *Tridoshas*, with predominance of *Vata dosha* (biological humour), *Agnimandya* (weak digestive fire), *Srotosanga* (blockage of circulatory channels) and *Vimarga gamana* (leaving its own channel and enters in other channel). It is necessary to break the pathogenesis to get the desired results. Therefore, the treatment of CKD aims at the enhancing the *Agni*, balancing vitiated *Doshas*, diuresis and control of excessive salt and water retention, *Srotoshuddhi* and *Rasayana chikitsa*, which aims at creating an improved nutritional status by acting at the level of *Rasa*, *Agni* and *Srotasa*.<sup>[5]</sup> On the basis of above said concept the treatment of the present case was started. The patient depicted elevated Serum Creatinine, Uric Acid & Blood urea levels. These are waste products produced in the body and removed by the kidney.

<sup>[6]</sup> Owing to compromised kidney functions their levels were risen. Looking into signs and symptoms and blood parameters, the patient was prescribed *Renal Plus Ultra Kwatha churna*, *Tab Renal Plus*, *Arka Nephrowin* and *Tab Blossom* for 2 months. *Tab Renal Plus* contains *Gokshura (Tribulus terrestris L.)* as its main ingredient depicting *Kapha Vata Doshas* pacifying, diuretic and *Rasayana* action henceforth capable of decreasing serum creatinine levels.<sup>[7]</sup> The ingredients of *Renplus ultra kvatha churna* are *Trina panchamoola*, *Punarnava*, *Gokshru*, *Shatavari*, *Giloy* etc. *Trnpanchmoola kvatha* possess *Vata pitta shamaka*, *diuretic*, kidney stimulant, and hemopoetic properties. In vitro studies depict its free radical-scavenging activity, thereby justifying its potential in treating ailments in which free radicals are produced.<sup>[8]</sup> The disease involves *Vata* vitiation, prompting kidney degeneration and hence involving *Rasayana* drugs in treatment is utmost essential as they possess special tissue healing capabilities, thereby enhancing tissue qualities & minimizing the structural damage. *Punarnava* and *Shatavari* depict par excellence in the diseases of *Mutravaha srotas* by virtue of their *Rasayana* action. *Shatavari* adds on to the nutrient value & In vivo studies have clearly proved its serum creatinine lowering effects.<sup>[9]</sup> *Arka Nephrowin* was prepared from distillate of *Punarnava*, *Makoy* & *Kasni*. *Punarnava* has antifibrotic property reducing the formation of extracellular collagen deposition in the renal tubules.<sup>[10]</sup> *Makoy* depict hydroxyl radical scavenging potential, suggesting its probable mechanism of cytoprotection in kidney cell damage.<sup>[11]</sup> In vivo study depicts *Kasni* decreases serum uric acid levels by inhibiting the activity of xanthine oxidase (XOD), the enzyme that catalyses the generation of uric acid and by promoting uric acid excretion.<sup>[12]</sup> *Tab blossom* contains a unique combination of herbs such as *Draksha*, *Kharjur*<sup>[13]</sup> etc. thereby proficiently increasing the hemoglobin levels.

## CONCLUSION

The mentioned case study provides evidence that *Ayurveda* treatment modality is effective in management of CKD. Hence it is explicated that *Ayurveda*

treatment modality possess a treasure of kidney rejuvenating herbs which are proficient in redressing troubled kidney functions, relieving the signs & symptoms of CKD patient, halting the disease progression and imparting a better quality of life.

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**Source of Support: Nil**  
**Conflict of Interest: None Declared**

How to cite this URL: Poonam Dang et al: Effect of Ayurveda treatment modality in improving chronic kidney disease: A Case Report. *International Ayurvedic Medical Journal* {online} 2024 {cited September 2024} Available from: [http://www.iamj.in/posts/images/upload/606\\_612.pdf](http://www.iamj.in/posts/images/upload/606_612.pdf)

**Tables:**

**Table:1 Timeline**

S. No	Period	Clinical events
1	Dec 2022	Weakness, Weight loss, Constipation, Gas formation, frothy urine, swelling. Taken allopathic treatment and blood transfusion for low Hb levels.
2	Jan 2022	Taken blood transfusion second time for low Hb levels.
3	Feb 2023	Nausea, vomiting, breathlessness, bitterness in mouth along with previous symptoms.
4	6 Feb 2023	Ultrasonography findings suggested both kidneys shrunken & mildly echogenic and haemoglobin levels were 7gm%.
5	10 Feb 2023	Lab investigations: Sr. Creatinine -6.05mg/dl Blood Urea-80.3mg/dl BUN-37.52mg/dl Sr.Proteins-6.0gm/dl
6	13 Feb 2023	Consultation at OPD and Initiation of Ayurveda treatment.
7	17 April 2023	Symptomatic improvement (improvement in frothy urine, swelling in the body, constipation, breathlessness, nausea, vomiting) Improvement in Lab Investigations: Sr. Creatinine -2.20mg/dl Blood Urea-64.0mg/dl BUN-29.9mg/dl Sr.Proteins-6.8gm/dl
8	15 May 2023	Overall improvement seen (Patient feeling better)

**Table 2: Therapeutic Intervention with Duration**

Date	Purpose	Medicine	Dose , frequency	Duration
13-02-2024	<i>Deepan-Pachan</i> (appetizer & digestive medicine) <i>Tridoshahara</i> (balancing biological humours), <i>Srotoshodhan</i> & <i>Rasayana</i> .	<i>Renal Plus Ultra -Kwatha churna</i>	10 g BD,before meal	8 Weeks
		<i>Tab Renal Plus</i>	800mg TDS, after meal	8 Weeks
		<i>Arka Nephrowin</i>	20ml BD, after meal	8 Weeks
		<i>Tab Blossom</i>	250 mg BD, after meal	8 Weeks
17-04-2023	1st follow-up, same treatment continued for 4 weeks due to symptomatic relief & improvement in lab investigations.			
15-05-2023	2nd follow-up, same treatment continued for 4 weeks due to symptomatic improvement.			

**Table 3: Details of Therapeutic Intervention**

Name of medicine	Ingredients
<i>Renal Plus Ultra - Kwatha churna</i>	<i>Panchtrinmool kwath</i> (Ayurvedic Classical medicine) + <i>Punarnava</i> ( <i>Boerhaavia diffusa</i> Linn.) + <i>Jau</i> ( <i>Hordeum vulgare</i> Linn.) + <i>Pitpapra</i> ( <i>Fumaria indica</i> Hausskn.) + <i>Gokhru</i> ( <i>Tribulus terrestris</i> Linn.) + <i>Apamarga</i> ( <i>Achyranthes aspera</i> Linn.) + <i>Makoy</i> ( <i>Solanum nigrum</i> Linn.) + <i>Arni</i> ( <i>Premna integrifolia</i> Linn.) + <i>Amaltas</i> ( <i>Cassia fistula</i> Linn.) + <i>Kutki</i> ( <i>Picrorhiza kurroa</i> Royle ex Benth.) + <i>Pashanbhed</i> ( <i>Saxifraga ligulata</i> ) + <i>Varun</i> ( <i>Crataeva nurvala</i> Buch. ham.) + <i>Kulthi</i> ( <i>Dolichos biflorus</i> Linn.) + <i>Kasni</i> ( <i>Cichorium intybus</i> ) + <i>Pipal</i> ( <i>Ficus religiosa</i> Linn.) + <i>Dhamasa</i> ( <i>Fagonia Arabica</i> Linn.) + <i>Kas</i> ( <i>Saccharum spontaneum</i> Linn.) + <i>Oont Katara</i> ( <i>Echinops echinatus</i> Roxb.) + <i>Giloy</i> ( <i>Tinospora cordifolia</i> (Wild.) Miers.) + <i>Bala</i> ( <i>Sida cordifolia</i> Linn.) + <i>Shatawari</i> ( <i>Asparagus racemosus</i> Willd.) + <i>Vidari</i> ( <i>Pueraria tuberosis</i> DC.) + <i>Kateri chhoti</i> ( <i>Solanum surattense</i> Schrad & Wall) + <i>Neem</i> ( <i>Azadirachta indica</i> ) + <i>Kateri badhi</i> ( <i>Solanum indicum</i> Linn.)
<i>Tab Renal Plus</i>	<i>Gokhru</i> ( <i>Tribulus terrestris</i> Linn.) + <i>Bimbi</i> ( <i>Coccinia indica</i> W & A.) + <i>Shuddha Guggul</i> ( <i>Commiphora mukul</i> (Arn.) Bhandari) + <i>Giloy</i> ( <i>Tinospora cordifolia</i> (Wild.) Miers.) + <i>Motha</i> ( <i>Cyperus rotundus</i> Linn.) + <i>Triphala</i> (Classical Ayu Preparation) + <i>Trikatu</i> (Classical Ayu Preparation)
<i>Arka Nephrowin</i>	<i>Punarnava</i> ( <i>Boerhaavia diffusa</i> Linn.)+ <i>Kasni</i> ( <i>Cichorium intybus</i> Linn.)+ <i>Kakmachi</i> ( <i>Solanum nigrum</i> Linn.)+ <i>Water</i>
<i>Tab Blossom</i>	<i>Draksha</i> ( <i>Vitis vinifera</i> Linn.)+ <i>Khajur</i> ( <i>Phoenix sylvestris</i> Roxb.)+ <i>Punarnava</i> ( <i>Boerhaavia diffusa</i> Linn.)+ <i>Bhringraj</i> ( <i>Eclipta alba</i> Hassk.)+ <i>Vidang</i> ( <i>Embelia ribes</i> Burn.f.)+ <i>Haridra</i> ( <i>Curcuma longa</i> Linn.)+ <i>Guduchi</i> ( <i>Tinospora cordifolia</i> (Wild.) Miers.)+ <i>Kutki</i> ( <i>Picrorhiza kurroa</i> Royle ex Benth.)

**Table 4: Follow up & Outcome**

Date	Investigation	Finding
10-02-2023	Kidney Function Test	<ol style="list-style-type: none"> <li>1. Blood Urea Nitrogen (BUN) :37.523 mg/dl</li> <li>2. Blood Urea :80.3 mg/dl</li> <li>3. Creatinine: 6.05 mg/dl</li> <li>4. Uric Acid :4.4 mg/dl</li> <li>5. Sodium: 138 mmol/L</li> <li>6. Potassium: 3.9 mmol/L</li> <li>7. Calcium :8.0 mg/dl</li> <li>8. Inorganic Phosphorus: 4.25 mg/dl</li> <li>9. Chloride: 101 mmol/L</li> <li>10. Total Protein: 6.0 gm/dl</li> <li>11. Albumin: 3.92 gm/dl</li> <li>12. Globulin: 2.08 gm/dl</li> <li>13. A/G Ratio: 1.885</li> <li>14. G G T :14.3 U/L</li> </ol>
17-04-2023	Kidney Function Test	<ol style="list-style-type: none"> <li>1. Blood Urea: 64.0 mg%</li> <li>2. Serum Creatinine: 2.20 mg/dl</li> <li>3. Serum Uric Acid:3.00 mg/dl</li> <li>4. Blood Urea Nitrogen (BUN): 29.9 mg/dl</li> <li>5. Total Protein: 6.8 g/dl</li> <li>6. Albumin :3.7 g/dl</li> <li>7. Globulin :3.1 g/dl</li> <li>8. A/G Ratio: 1.2</li> <li>9. Serum Sodium :133.0 mEq/L</li> <li>10. Serum Potassium :4.0 mEq/L</li> </ol>
	Urine Examination	<ol style="list-style-type: none"> <li>1. Crystals :NIL</li> <li>2. Bacteria: NIL</li> <li>3. Others Yeast Cells: Present</li> </ol>