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Ayurvedic Formulations and Lifestyle Modifications in Stage V CKD: A Clinical Evaluation

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Abstract

Chronic kidney disease (CKD) is a progressive condition characterized by a gradual decline in renal function, often remaining asymptomatic until advanced stages. It poses a significant health and economic burden. In *Ayurveda*, CKD is viewed as a disorder of the *Mutravaha Srotas*, primarily involving *Vata* and *Kapha* vitiation, leading to *Srotorodha* (channel obstruction) and *Dhatu Kshaya* (tissue depletion). Classical references describe comparable conditions under terms such as *Mutraghata*, *Mutrakshaya*, and *Vrikk Roga*. The *Ayurvedic* approach emphasizes *Shodhana* (detoxification), *Shamana* (*dosha* balancing), and *Rasayana* (rejuvenation) therapies, supported by dietary and lifestyle modifications. This case report evaluates the *Ayurvedic* management of a 61-year-old male with Stage V CKD. Presenting symptoms included lower limb swelling, nausea, frothy urination, general weakness, and vertigo. Treatment comprised *Ayurvedic* formulations along with dietary adjustments and lifestyle interventions. Post-treatment, notable clinical improvements were observed: frothy urine became clear, lower limb swelling reduced from grade 3 to grade 1, weakness resolved, and vertigo decreased from 4/10 to 1/10. Laboratory parameters showed an increase in RBC count ($3.34 \times 10^6/\mu\text{L}$ to $3.61 \times 10^6/\mu\text{L}$) and hemoglobin (9.8 g/dL to 10.2 g/dL), with stable WBC counts and a significant reduction in serum creatinine (6.59 mg/dL to 3.80 mg/dL). The findings suggest that *Ayurvedic* interventions may offer symptomatic relief and improved laboratory outcomes in advanced CKD. While results are promising, further large-scale clinical studies are needed to validate efficacy, ensure safety, and develop standardized protocols for integrating *Ayurvedic* therapies into CKD management.

Keywords: Ayurveda, Chronic Kidney Disease, Creatinine, Mutravaha Srotas, Panchakarma, Vrikk vikar.

Introduction

Chronic kidney disease (CKD) is a long-term condition where the kidneys gradually lose their ability to filter waste and maintain fluid and electrolyte balance. It's usually diagnosed when the glomerular filtration rate (GFR) drops below 60 mL/min/1.73m² and persists for at least three months [1]. Affecting about 10–15% of the global population, CKD has become a major public health concern due to its high rates of illness, death, and the financial burden it places on healthcare systems [2, 3]. The most common causes are diabetes and high blood pressure, accounting for nearly two-thirds of all cases [4]. Because the disease often develops silently, symptoms usually appear only in later stages, making early detection through screening crucial, especially for high-risk groups [5]. As CKD progresses, it can lead to complications such as cardiovascular disease, anemia, bone and mineral imbalances,

and fluid retention, eventually resulting in end-stage renal disease (ESRD) [6]. Managing CKD involves controlling blood pressure and blood sugar, adjusting diet and lifestyle, and treating complications. Medications like ACE inhibitors and ARBs are commonly used to protect kidney function [7]. In *Ayurveda*, CKD is approached quite differently. It's primarily seen as a disorder of the *Mutravaha Srotas* (urinary channels), linked to imbalances in the *Vata* and *Kapha* *Doshas*, which lead to *Srotorodha* (blockage of the body's subtle channels) and eventually impair kidney function [8–10]. Ancient texts describe similar conditions under names like *Mutraghata*, *Mutrakshaya*, and *Vrikk Roga* [8, 11]. The *Ayurvedic* framework for understanding CKD includes multiple components known as *Samprapti Ghatak*, these are the building blocks of disease progression. *Vata* and *Kapha* *Doshas* are usually the main *Doshas*, but *Pitta* can also be

involved depending on the symptoms. Tissues like *Rasa*, *Rakta*, *Meda*, and the *Mutravaha Srotas* are gradually affected, and over time, even deeper tissues like *Shukra* and *Majja Dhatu* may become involved. Impaired digestive fire (*Mandagni*) often leads to toxin buildup (*Ama*), which blocks microchannels and disrupts cellular function. Over time, this leads to tissue depletion (*Dhatu Kshaya*) and worsening kidney damage. Based on this understanding, *Ayurvedic* treatments aim not just to relieve symptoms but to cleanse the system (*Shodhana*), balance the *Doshas* (*Shamana*), and rejuvenate the kidneys (*Rasayana*) through herbal remedies, detox therapies, and tailored lifestyle interventions [8, 12–17].

Panchakarma therapies, especially *Basti* (therapeutic enemas), are often used to cleanse and restore kidney function [14, 15]. Other treatments like *Awagah Sweda*, *Nadi Sweda*, and *Shirodhara* help detoxify the body and support systemic balance [14]. *Ayurvedic* management also emphasizes lifestyle practices such as yoga, pranayama, and personalized diets, all aimed at reducing the body's metabolic load and improving circulation [16]. *Rasayana* therapies focus on rejuvenation by enhancing vitality (*Ojovardhak*) and clearing toxins (*Amapachana*), supporting the kidneys in the long run [17]. While many case studies and small-scale research efforts show promising results, like improved creatinine and urea levels, larger clinical trials are still lacking, limiting the strength of current evidence [18]. There are also safety concerns related to certain herbs and mineral-based formulations, so regular lab monitoring is essential [16]. That said, the *Ayurvedic* model offers a valuable alternative, especially for patients with limited access to costly treatments like dialysis. Combining *Ayurvedic* and modern approaches may help delay CKD progression and improve patient outcomes, but further research and standardization are crucial to validate this integrative model [19].

Objective

To evaluate the *Ayurvedic* management of Stage V CKD in a 61-year-old male.

Materials and Methods

1. Case Report

A 61-year-old male, known case of CKD stage V visited Jeena Sikho Lifecare Limited Hospital, Ajmer, India on March 29, 2024. He had a known history of CKD since 2

years and hypertension for 8 years. He came with the symptoms like lower limb swelling, nausea, frothy urination, general weakness and vertigo. There was no relevant family history and addiction. The *Ashta-vidh Pariksha* (Eight-fold examination) on the first visit is mentioned in Table 1. The laboratory investigation reports during the treatment period is mentioned in Table 2. The serum creatinine level during the treatment period is mentioned in Table 3. The vitals during the visits are mentioned in Table 4.

Table 1: The Ashta-Vidh Pariksha (examination) on the visits

Parameter	29-03-2024
Naadi (Pulse)	Kaphaj Pittaj
Mala (Stool)	Avikrit (Normal)
Mutra (Urine)	Safena (Frothy)
Jiwha (Tongue)	Saam (Coated)
Shabda (Voice)	Spashta (Normal)
Sparsha (Touch)	Anushna sheet (Normal)
Drik (Eye)	Avikrit (Normal)
Akriti (Physique)	Madhyam

Table 2: The laboratory investigation reports during the treatment

Parameter	29-03-2024	27-04-2024
WBC	9.41 x 10 ³ /UL	9.42 x 10 ³ /UL
RBC	3.34 x 10 ⁶ /UL	3.61 x 10 ⁶ /UL
HGB	9.8 g/dL	10.2 g/dL

Table 3: The serum creatinine during the treatment period

Parameter	26-03-2024	27-04-2024
Serum Creatinine	6.59 mg/dL	3.80 mg/dL

Table 4: The vitals during the visits

Date	Weight	Blood Pressure (mmHg)	Pulse/min
29-03-2024	60 Kg	140/70 mmHg	162
30-04-2024	58 Kg	140/70 mmHg	88
30-05-2024	56 Kg	130/80 mmHg	83
30-06-2024	56 Kg	110/60 mmHg	90

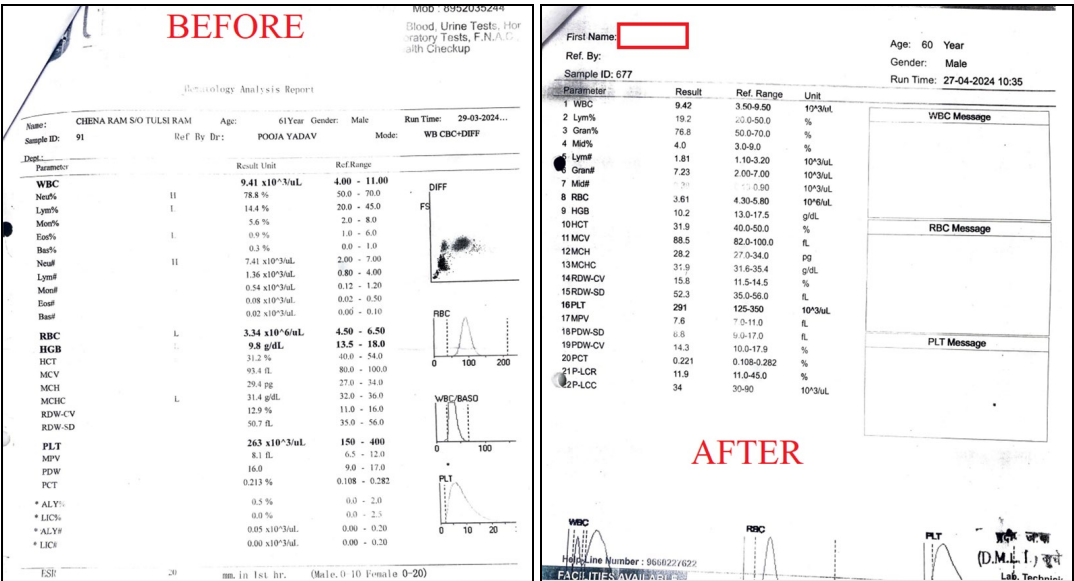


Fig 1: The laboratory investigation reports during the treatment

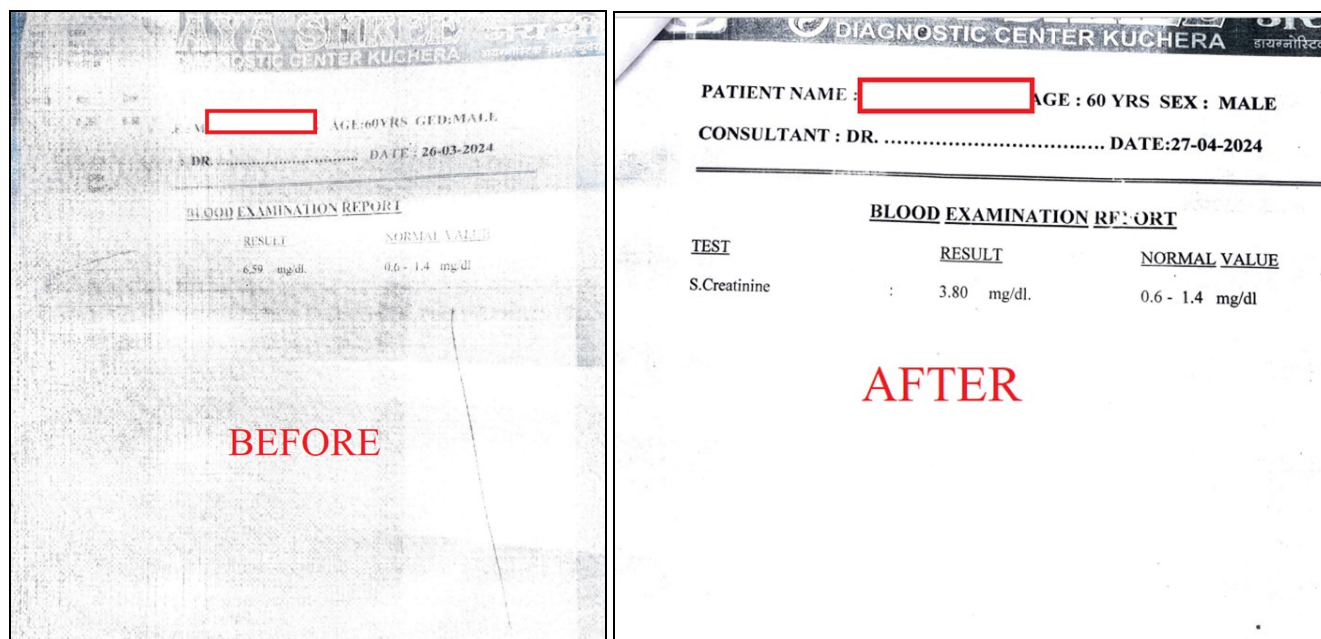


Fig 2: The serum creatinine before and after treatment

2. Treatment Plan for the Patient at Jeena Sikho Lifecare Limited Hospital (Fig 3):

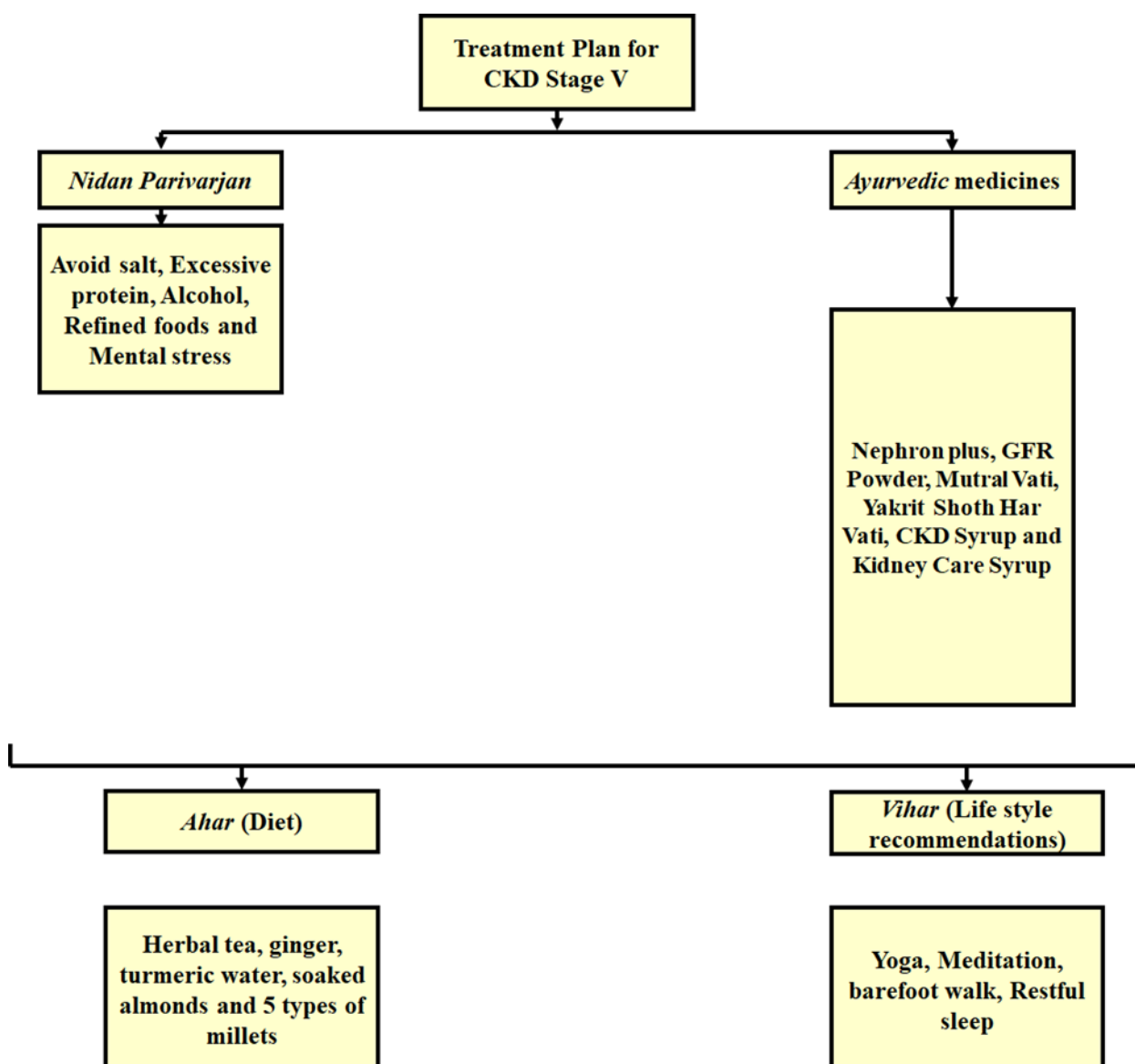


Fig 3

1. Diet Plan:

The patient was advised to follow a Disciplined and Intelligent Person's (DIP) diet along with an *Ayurvedic* dietary regimen to complement the *Ayurvedic* management of CKD [20].

Table 5: The dietary approach for CKD

Category	Details
Pathya	Foxtail millet, Barnyard millet, Little millet, Kodo millet, Browntop millet, steamed bottle gourd, steamed ridge gourd, steamed pumpkin, steamed cucumber, papaya, pomegranate, ginger tea, tulsi tea, green tea (without milk and sugar), turmeric, fresh ginger, soaked almonds (4-5 per day), steamed cucumber salad, steamed radish (mild), steamed carrot (if potassium is normal), fermented millet shake, boiled reduced water, millet khichdi, vegetable soup, low-sodium home-cooked food, coriander water, jeera water, coconut water (if potassium is normal).
Apathya	Excessive Salt (especially table salt, pickles, papad, salted snacks), Refined Foods (white bread, maida, bakery items), Wheat and Wheat Products, Dairy Products (milk, paneer, curd, cheese), Caffeine-containing Beverages (tea, coffee, energy drinks), Carbonated and Packaged Drinks, Alcohol, Deep-fried and Oily Foods, High-protein Animal Foods (red meat, eggs, fish), Processed and Preserved Foods (canned items, instant noodles, ready-to-eat meals), Excessive Pulses/Legumes, Pickles and Chutneys with High Salt Content, Junk Food and Fast Food Items, Excess Sour and Fermented Foods and Potassium-Rich Foods like banana, potato, tomato, spinach.
Hydration	Consume 1 litre of alkaline water 3-4 times a day. Incorporate herbal tea, living water, and turmeric-infused water into your routine. Boil 2 litres of water and reduce it to 1 litre for daily consumption.
Millet Intake	Include five types of millet: Foxtail, Barnyard, Little, Kodo, and Browntop. Use steel cookware for millet preparation and cook with mustard oil.
Fasting	One day of fasting is recommended.

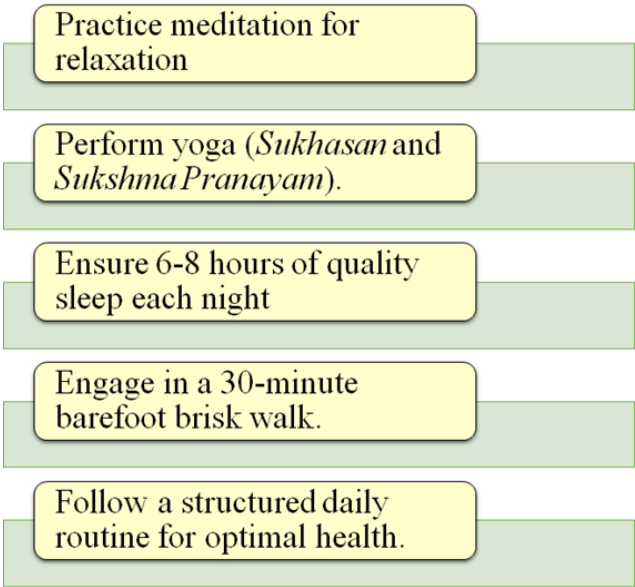


Fig 4: Lifestyle Recommendations:



Fig 5: Meal Timing and Structure:
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3. Medicinal Interventions

i). **Ayurvedic Interventions:** The *Ayurvedic* regimen employed in this case were Nephron plus, GFR Powder, Mutral Vati, Yakrit Shoth Har Vati, CKD Syrup and Kidney Care Syrup. The medicines administered during the treatment period is mentioned in Table 6.

ii). **Allopathic Interventions:** The previously prescribed necessary allopathic medicines were clinidipine 10 mg BD and Torsemide 20 mg BD which were discontinued after starting *Ayurvedic* medicines.

Table 6: Medications taken during the treatment period

Medicine Name	Ingredients	Therapeutic effects	Dosage with Anupana
Nephron plus	<i>Hazrool yahood bhasma powder, Chandraprabha, Pashanbheda, Mulak Kshar powder, Yavakshar powder, Amalaki Rasayana powder, Trivikrum Rasa powder, Navasara powder, Nimbu Stava powder (Citrus limon), Gokshur (Tribulus terrestris), Durbhamool (Chlorophytum borivilianum), Shila pushpa (Dolichos biflorus), Black Salt powder, and Hing powder (Ferula asafoetida)</i>	<i>Raktashodhak (Blood purifier), Mutral (Diuretic), Vishagna (Detoxifier), Agnideepan (Digestive stimulant), Shoth har (Anti-inflammatory), Rasayana (Rejuvenator), Vatanulomana (Vata regulator)</i>	1 TAB BD (Adhobhakta with kosha jala - After meal with lukewarm water)
GFR Powder	<i>Punarnava (Boerhavia diffusa), Gokshur (Tribulus terrestris), Kaasni (Cichorium intybus), Bhoomi Amla (Phyllanthus niruri), Badi Hard (Terminalia chebula), Makoy (Solanum nigrum) and Apamarg (Achyranthes aspera)</i>	<i>Mutral (Diuretic), Shoth har (Anti-inflammatory), Virechana (Purgation), Raktaprasadana (Blood purifier), Vatanulomana (Vata regulator), Mutravirechana (Urinary purgation), Rasayana (Rejuvenator), Amapachan (Toxin digestant), Kledahara (Moisture remover), Vrikkadoshahara (Kidney toxin eliminator)</i>	Half a teaspoon BD (Adhobhakta with kosha jala)
Mutral Vati	<i>Kajjali, Loh bhasma, Vanga bhasma, Abhrak bhasma, Yavakshara (Hordeum vulgare), Gokshur (Tribulus terrestris), Haritaki (Terminalia chebula), Vibhitaki (Terminalia bellirica), Vasa (Justicia adhatoda, Synonym: Adhatoda vasica)</i>	<i>Mutral (Diuretic), Raktashodhak (Blood purifier), Shoth har (Anti-inflammatory), Rasayana (Rejuvenator)</i>	1 TAB BD (Adhobhakta with kosha jala)
Yakrit Shoth Har Vati	<i>Punarnava (Boerhavia diffusa), Kalimirch (Piper nigrum), Pippali (Piper longum), Vayavidanga (Embelia ribes), Devdaru (Cedrus deodara), Kutha, Haldi (Picrorhiza kurroa), Chitrak (Plumbago zeylanica), Harad (Terminalia chebula), Bahera (Terminalia chebula, Terminalia bellirica), Amla (Embelia officinalis), Danti (Baliospermum montanum), Chavya (Piper chaba), Indra Jon (Taraxacum officinale), Pippla Mool (Piper longum), Motha, Kalajira (Nigella sativa), Kayphal (Myrica esculenta), Kutaki (Picrorhiza kurroa), Nisoth (Operculina turpethum), Saunth (Zingiber officinale), Kaddu Singh (Cucumis sativus), Ajwain (Trachyspermum ammi), Mandur Bhasma (Ferrum)</i>	<i>Raktashodhak (Blood purifier), Deepan (Appetizer), Pachan (Digestant), Shoth har (Anti-inflammatory), Vata-kapha shamaka (Dosha-balancer), Rasayana (Rejuvenator), Ojovardhaka (Immunity enhancer)</i>	1 TAB BD (Adhobhakta with kosha jala)
CKD Syrup	<i>Kasani (Cichorium intybus), Gokshur (Tribulus terrestris), Shatavari (Asparagus racemosus), Giloy (Tinospora cordifolia), Sorbitol, and Shuddh Shilajit (Asphaltum punjabianum)</i>	<i>Raktashodhak (Blood purifier), Virechana (Purgative), Mutral (Diuretic), Agnideepan (Digestive stimulant), Rasayana (Rejuvenator), Shoth har (Anti-inflammatory), Pitta Shaman (Pitta pacifier), Kaphashodhana (Kapha eliminator), Srotoshodhana (Channel cleanser)</i>	7.5 ml BD (Adhobhakta with sama matra kosha jala - After meal with equal amount of lukewarm water)
Kidney Care Syrup	<i>Punarnavarishta, Chandanasava, Ushirasava and Gokshuradi Kadha</i>	<i>Vata-Pitta Shaman (Pacifier of Vata and Pitta doshas), Raktashodhak (Blood purifier), Shoth har (Anti-inflammatory), Mutra Vardhaka (Promoter of urine flow), Srotoshodhak (Channel purifier)</i>	7.5 ml BD (Adhobhakta with sama matra kosha jala)

Result

Following the *Ayurvedic* treatment, the patient showed marked improvement in symptoms, highlighting the effectiveness of the interventions in managing CKD. The noticeable reduction in lower limb swelling, nausea, frothy

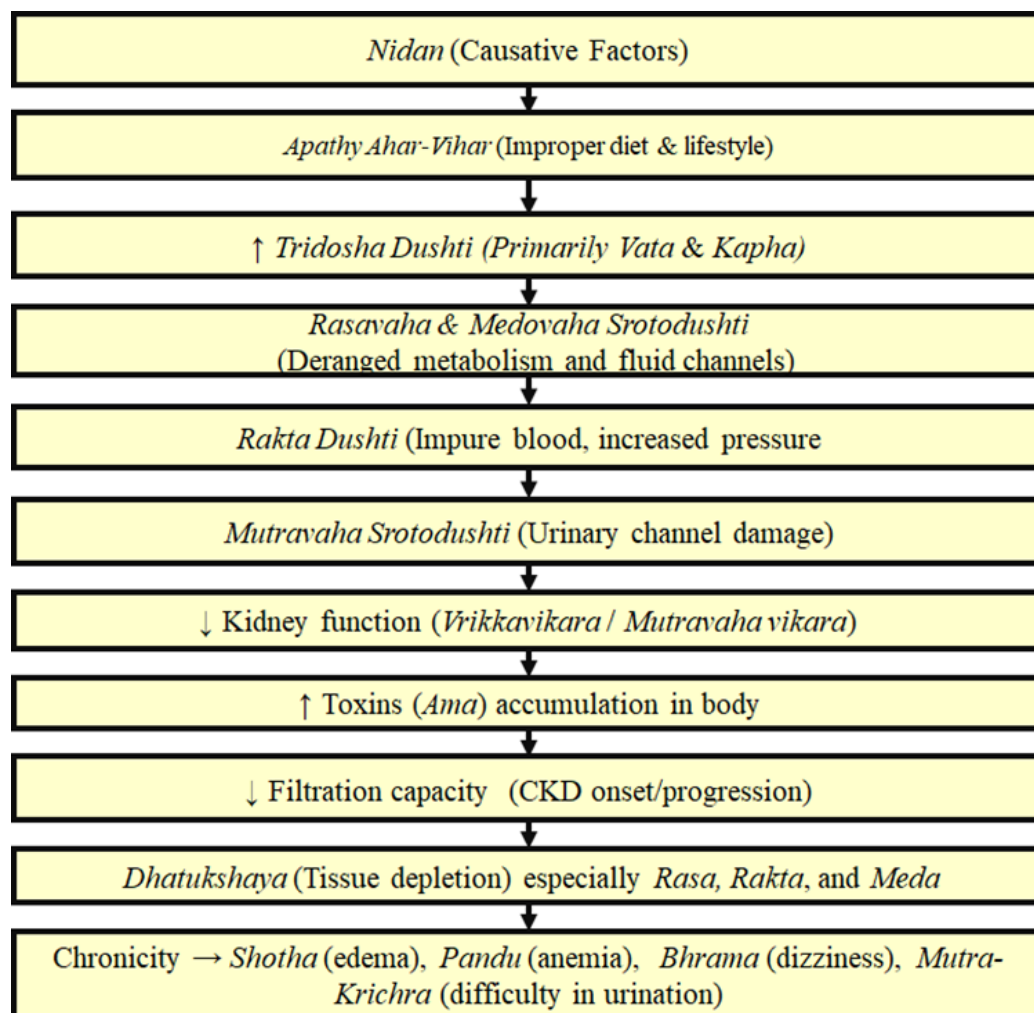
urine, general weakness and vertigo further reflects the positive therapeutic response to the *Ayurvedic* regimen. The conditions before and after treatment are mentioned in Table 7.

Table 7: The conditions during the admission and discharge

Conditions	Before Treatment	After Treatment
Urine	Frothy	Clear
Lower limb swelling	3°	1°
Weakness ^[21]	Moderate	Relief
Vertigo ^[22]	4/10	1/10

Discussion

This case report highlights the *Ayurvedic* medications administered to a 61-year-old male diagnosed with CKD stage V. The patient exhibited symptoms including lower limb swelling, nausea, frothy urine, general weakness and vertigo. The *Samprapti* (pathogenesis) for this case is illustrated in Fig 6 ^[23].

**Fig 6:** The *Samprapti* for this study

1. The *Samprapti* and *Nidan Parivarjana*

In *Ayurveda*, Stage V CKD is regarded as a progressively worsening condition, primarily driven by vitiation of *Vata* and often accompanied by imbalance of all three *Doshas* (*Tridosha*), with a significant impact on the *Mutravaha Srotas* (urinary channels) ^[24]. The pathological process begins due to various causative factors (*Nidan*) such as *Raktavata* (hypertension), unhealthy dietary and lifestyle habits (*Ahita Ahar-Vihar*), *Dhatukshaya* (degeneration of body tissues), and *Beejadosh* (hereditary susceptibility) ^[25]. These factors lead to a *Vata*-predominant *Tridoshic* disturbance that affects vital body tissues—*Rasa* (plasma), *Rakta* (blood), *Mamsa* (muscle), *Meda* (fat), *Shukra* (reproductive tissue), and *Mutra* (urine) ^[26].

Ayurvedic literature notes that the disease originates in the *Pakwashaya* (large intestine), from where it progressively impacts the urinary system, giving rise to characteristic symptoms ^[27]. As it follows the *Abhyantar Rogamarg* (internal disease pathway) and is typically chronic, progressive, and often *Yapya* (manageable but not curable) or

Asadhya (incurable), early and targeted intervention is essential ^[28].

To slow CKD progression, *Nidan Parivarjana*, eliminating causative and aggravating factors, is crucial. This includes avoiding excessive intake of sweets, salty or heavy foods, incompatible food combinations (*Viruddhahar*), suppression of natural urges (*Vega Dharan*), overexertion, alcohol, smoking, and exposure to nephrotoxic agents ^[29-32]. Preventive strategies also involve reducing mental stress, maintaining regular sleep, protecting from cold exposure, ensuring proper hydration, and avoiding prolonged inactivity ^[33, 34]. Managing underlying conditions such as *Raktavata* with *Ayurvedic* therapies and lifestyle regulation is equally important to delay disease progression and preserve kidney function ^[35].

2. The Effects of *Ayurvedic* Medicines

The therapeutic potential of these *Ayurvedic* medicines can be understood more deeply through the *Ras Panchaka* (*Rasa* – taste, *Guna* – qualities, *Virya* – potency, *Vipaka* – post-

digestive effect, and *Prabhava* – specific action) of their ingredients, which collectively target renal and systemic imbalances. Nephron Plus, containing *Gokshur* [36], *Pashanbhedha* [37], *Amalaki* [38], and *Hing* [39], integrates predominantly *Madhura* and *Tikta Rasa* with *Laghu-Ruksha Guna*, *Sheeta Virya* in diuretics like *Gokshur*, and *Ushna Virya* in digestive stimulants like *Hing*, promoting *Vata* regulation, detoxification, and urinary channel clearance. GFR Powder, enriched with *Punarnava* [40], *Kaasni* [41], *Bhoomi Amla* [42], and *Haritaki* [43], combines *Tikta-Kashaya-Madhura Rasa*, *Laghu-Ruksha Guna*, and mostly *Sheeta Virya*, producing *Mutral*, *Shoth-hara*, and *Rasayana* effects while reducing inflammatory fluid retention. *Mutral Vati*, with *Gokshur*, *Haritaki*, and *Vasa*, harnesses *Kashaya-Madhura-Tikta Rasa* and *Ushna Virya* properties for enhanced diuresis, blood purification, and tissue rejuvenation. *Yakrit Shoth Har Vati*, containing *Pippali* [44], *Kalimirch*, *Kutaki* [45], and *Mandur Bhasma* [46], offers *Katu-Tikta-Kashaya Rasa*, *Laghu-Ruksha-Tikshna Guna*, predominantly *Ushna Virya*, and *Madhura Vipaka*, stimulating digestion, clearing channels, and balancing *Vata-Kapha*. CKD Syrup, with *Kasani*, *Gokshur*, *Shatavari*, and *Giloy*, blends *Tikta-Madhura Rasa*, *Snigdha-Laghu Guna*, *Sheeta Virya*, and *Madhura Vipaka* to pacify *Pitta-Kapha*, nourish tissues, and act as a mild diuretic and *Rasayana*. Kidney Care Syrup, prepared from *Punarnavarishta*, *Chandanasava*, *Ushirasava*, and *Gokshuradi Kadha*, emphasizes *Madhura-Tikta-Kashaya Rasa*, *Sheeta Virya*, and *Snigdha-Laghu Guna* to soothe *Vata-Pitta*, promote urine flow, purify blood, and maintain *Srotas* patency.

3. The Effects of *Ahar-vihar*

In *Ayurveda*, *Ahar* (diet) and *Vihar* (lifestyle) play a crucial role in both the prevention and management of CKD by addressing the root causes and halting disease progression. An improper diet and lifestyle (*Apathya Ahar-Vihar*) disturb the *Tridosha*, predominantly *Vata* and *Kapha*, leading to *Rasavaha*, *Medovaha*, and *Mutravaha Srotodushti* impairment of metabolic, fluid, and urinary channels. This imbalance contributes to *Rakta Dushti* (impure blood, high pressure), toxin (*Ama*) accumulation, and *Dhatukshaya* (tissue depletion) affecting vital tissues like *Rasa*, *Rakta*, and *Meda*. Corrective dietary practices, such as limiting salt [47], excessive protein [48], refined foods, and alcohol [49], alongside incorporating herbal tea, turmeric-ginger water, soaked almonds, and millet-based meals [50], help reduce inflammation, detoxify the system, and improve metabolism. Likewise, lifestyle measures, yoga [51], meditation, barefoot walking, and restful sleep [52], enhance circulation, reduce stress, and balance *Doshas*. Together, a disciplined *Ahar-Vihar* regimen supports kidney function, slows filtration loss, reduces edema, and mitigates CKD symptoms, making it an integral part of holistic renal care.

Future Research Perspectives

This study examined a 61-year-old male patient with CKD. While the results were encouraging, the single-case design restricts the ability to generalize the findings. To establish the efficacy, safety, and reliability of the integrated *Ayurvedic* interventions used in this case, larger-scale randomized controlled trials are essential. Such research would play a key role in formulating standardized clinical protocols and evidence-based guidelines, thereby supporting the wider adoption of *Ayurvedic* therapies within mainstream medical practice.

Conclusion

The key takeaways from this case study on managing CKD through *Ayurvedic* interventions are as follows:

Symptoms: Following the *Ayurvedic* treatment regimen, the patient demonstrated marked improvement in clinical parameters. Urine, which was previously frothy, became clear. Lower limb swelling reduced from grade 3 to grade 1. The patient reported complete relief from moderate weakness. Vertigo severity, measured on a 10-point scale, decreased significantly from 4/10 to 1/10, indicating substantial symptomatic improvement.

Investigations: Laboratory investigations revealed notable improvements following the treatment period. The patient's RBC count increased from $3.34 \times 10^6/\mu\text{L}$ on 29-03-2024 to $3.61 \times 10^6/\mu\text{L}$ on 30-04-2024, while hemoglobin levels improved from 9.8 g/dL to 10.2 g/dL over the same period, indicating better hematological status. WBC counts remained stable ($9.41 \times 10^3/\mu\text{L}$ to $9.42 \times 10^3/\mu\text{L}$). Renal function showed significant enhancement, with serum creatinine levels decreasing from 6.59 mg/dL on 26-03-2024 to 3.80 mg/dL on 27-04-2024, suggesting improved kidney performance.

The study concludes that *Ayurvedic* interventions for CKD resulted in positive outcomes, including symptom relief and improvement in laboratory parameters.

References

1. Kidney Disease: Improving Global Outcomes (KDIGO) CKD Work Group. KDIGO 2012 Clinical Practice Guideline for the Evaluation and Management of Chronic Kidney Disease. *Kidney Int Suppl* (2011). 2013; 3(1):1-150.
2. GBD Chronic Kidney Disease Collaboration. Global, regional, and national burden of chronic kidney disease, 1990-2017: a systematic analysis for the Global Burden of Disease Study 2017. *Lancet*. 2020; 395(10225):709-733.
3. National Kidney Foundation. K/DOQI clinical practice guidelines for chronic kidney disease: evaluation, classification, and stratification. *Am J Kidney Dis*. 2002; 39(2 Suppl 1):S1-266.
4. United States Renal Data System. USRDS Annual Data Report: Epidemiology of kidney disease in the United States. Bethesda (MD): National Institutes of Health, National Institute of Diabetes and Digestive and Kidney Diseases; 2021.
5. Chronic Kidney Disease Prognosis Consortium. Association of estimated glomerular filtration rate and albuminuria with all-cause and cardiovascular mortality in general population cohorts: a collaborative meta-analysis. *Lancet*. 2010; 375(9731):2073-2081.
6. Webster AC, Nagler EV, Morton RL, Masson P. Chronic kidney disease. *Lancet*. 2017; 389(10075):1238-1252.
7. Taal MW, Brenner BM, Rector FC, editors. Brenner and Rector's The Kidney. 10th ed. Philadelphia: Elsevier; 2019.
8. Srivastava AK, Negi M, Vandana A, Painuly P. A case study on ayurvedic management of chronic kidney disease. *Int J Adv Res (Indore)*. 2024. doi: 10.21474/ijar01/18443.
9. Singla LD, Kaundal M. Role of Ayurvedic herbs in managing Urinary System Diseases: A Review. *J Ayurveda Integr Med Sci*. 2024. doi: 10.21760/jaims.9.5.22.
10. Upadhyay S, Pandey Y. Review of published case reports on diagnostic and therapeutic approach of chronic kidney

- disease through Ayurveda: A scoping review. *J Res Ayurvedic Sci.* 2024. doi: 10.4103/jras.jras_70_24.
11. Rahaman S, Sarkar NC, Taher MA, Pandey A, Bank S, Banerjee A, Biswas T. Standard ayurvedic management for chronic kidney disease. *Sci Cult (Calcutta).* 2024. doi: 10.36094/sc.v89.2024.standard_ayurvedic_management_for_chronic.rahaman.203.
 12. Semwal A, Johri S, Rajpoot A. Exploring the efficacy of Ayurvedic interventions in managing Chronic Kidney Disease: A Pilot Study. *J Ayurveda Integr Med Sci.* 2024. doi: 10.21760/jaims.9.2.6.
 13. Aggarwal A, Sokiya G, Sharma G. Management of Chronic Kidney Disease - An Ayurveda Case Study. *J Ayurveda Integr Med Sci.* 2023. doi: 10.21760/jaims.8.7.46.
 14. Rai M, Wajpeyi SM. Management of Chronic Kidney Disease through Ayurvedic Shodhana and Shamana Chikitsa: A Case Report. *J Clin Diagn Res.* 2024. doi: 10.7860/jcdr/2024/74317.20374.
 15. Ji A, Chaudhary GR, Singh S, Singh M, Richa NA. Ayurvedic management of stage IV chronic kidney disease. *Int J Unani Integr Med.* 2024; 8(3b):300. doi: 10.33545/2616454x.2024.v8.i3b.300.
 16. Panda AK. Prevention and reduce the complications of chronic kidney diseases: A holistic health care approach. *J Prev Med Holist Health.* 2024. doi: 10.18231/j.jpmmh.2024.009.
 17. Ji AM, Chaudhary GR, Singh M, Richa R. Integrating Ayurveda in Chronic Kidney Disease Management. *Ayushdhara.* 2024. doi: 10.47070/ayushdhara.v11i5.1765.
 18. Ji AM, Chaudhary GR, Richa R, Singh S, Singh M, Priyank P. Integrating ayurvedic panchakarma in the management of chronic kidney disease: a clinical case report. *Int J Adv Res (Indore).* 2024. doi: 10.21474/ijar01/20085.
 19. Borkar P, Yadav V, Tiwari R, Samarth RM. A systematic review of potential candidates of herbal medicine in treatment of chronic kidney disease. *Phytomed Plus.* 2022. doi: 10.1016/j.phyplu.2022.100361.
 20. Acharya M, Chaudhary G, Singh M, Richa. A case study for integrating Ayurvedic Panchakarma therapies for management of chronic kidney disease. *Ayushdhara.* 2025; 11(6):208-223. Available from: <https://ayushdhara.in/index.php/ayushdhara/article/view/1818>.
 21. Naqvi U, Margetis K, Sherman AL. Muscle strength grading. [Updated 2025 Apr 27]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK436008/>
 22. Rahlfs VW, Zimmermann H. The Mean Vertigo Score (MVS) Outcome Scale and Its Use in Clinical Research for Quantifying Vestibular Disorders. *Front Neurol.* 2021; 12:601749. doi: 10.3389/fneur.2021.601749. PMID: 34025547; PMCID: PMC8131667.
 23. Mishra S, Dash R, Sapna, Kumar S. Chronic kidney disease in light of Ayurveda: A literary review on Vataj Pandu. *Int J Ayurveda Pharma Res.* 2024; 12(4):65-68. doi: 10.47070/ijapr.v12i4.3193.
 24. Chate SB, Ranade A. Ayurvedic pathogenesis of chronic kidney disease: A critical review. *Int J Creat Res Thoughts.* 2024; 12(11).
 25. Tiwari H, Dang P, Badyal S, Dhawan P. Chronic kidney disease (CKD) pathogenesis in Ayurveda parlance: A review. *Int Ayurvedic Med J.* 2024; 8:138-145. doi: 10.46607/iamj06p8022024.
 26. Rahul N, Yadava R, Raj AS, Jyothi PSA. Pragmatic Ayurveda approach towards end-stage renal disease. *J Ayurveda Case Rep.* 2025; 8(2):113-118. doi: 10.4103/jacr.jacr_116_23.
 27. Bhat SD, Ashok BK, Acharya R. Critical analysis of herbs acting on Mutravaha srotas. *Ayu.* 2010; 31(2):167-169. doi: 10.4103/0974-8520.72379.
 28. Khedikar S, Bhoyar Y. Study the correlation of Vrikkaupatti in Ayurveda with special reference to chronic renal failure, *International Journal of Medical Science and Innovative Research (IJMSIR).* 2018; 3(5):72-78.
 29. Cn A, Scholar P. Critical analysis of the concept of Rogamarga. *Ayushdhara.* 2023; 10(Suppl 1):72. doi: 10.47070/ayushdhara.v10iSuppl1.1132.
 30. Das A, Kande A, Nayak NR. A review article on the impact of Viruddha Ahara Vihaar on Pandu w.s.r to dietary and lifestyle factors. *J Ayurveda Int Med Sci.* 2025; 10(3):130-139.
 31. D'Alessandro C, Rossi A, Innocenti M, Ricchiuti G, Bozzoli L, Sbragia G, et al. Dietary protein restriction for renal patients: Don't forget protein-free foods. *J Ren Nutr.* 2013; 23(5):367-371.
 32. Bhardwaj H, Saini S, Sharma P, Shukla A, Kashish. Virudha Ahara—The Ayurvedic insight into incompatible food combinations. *J Ayurveda Int Med Sci.* 2025; 10(4):184-189.
 33. Míguez-Burbano MJ, Wyatt C, Lewis JE, Rodríguez A, Duncan R. Ignoring the obvious missing piece of chronic kidney disease in HIV: Cigarette smoking. *J Assoc Nurses AIDS Care.* 2010; 21(1):16-24. doi: 10.1016/j.jana.2009.07.005.
 34. Maung SC, El Sara A, Chapman C, Cohen D, Cukor D. Sleep disorders and chronic kidney disease. *World J Nephrol.* 2016; 5(3):224-232. doi: 10.5527/wjn.v5.i3.224.
 35. Lin X, Lv J, Zhang S, Ma X, Zhang X, Wang C, et al. Healthy lifestyle behaviors attenuate the effect of poor sleep patterns on chronic kidney disease risk: A prospective study from the UK Biobank. *Nutrients.* 2024; 16(23):4238. doi: 10.3390/nu16234238.
 36. Ramteke RS, Thakar AB, Trivedi AH, Patil PD. Clinical efficacy of Gokshura-Punarnava Basti in the management of microalbuminuria in diabetes mellitus. *Ayu.* 2012; 33(4):537-541. doi: 10.4103/0974-8520.110535. PMID: 23723672; PMCID: PMC3665195.
 37. Das C, Kumari B, Singh MP, Singh S. A literary review and therapeutic action of Pashanbhedha (Bergenia ligulata Wall) described by Shamhita in Ashmari Roga. *J Ayurveda Int Med Sci.* 2022; 7(6):105-114. Available from: <https://jaims.in/jaims/article/view/1861>.
 38. Rahman M, Ferdous KU, Roy S, Nitul I, Mamun F, Hossain H, et al. Polyphenolic compounds of amla prevent oxidative stress and fibrosis in the kidney and heart of 2K1C rats. *Food Sci Nutr.* 2020. doi: 10.1002/fsn3.1640.
 39. Bagheri SM, Mohammadsadeghi H, Dashti-R MH, Mousavian SM, Aghaei ZA. Effect of Ferula assa-foetida oleo-gum-resin on renal function in normal Wistar rats. *Indian J Nephrol.* 2016; 26(6):419-422. doi: 10.4103/0971-4065.171245. PMID: 27942173; PMCID: PMC5131380.
 40. Santhosh S, Pazhani GP, Arathi MS, Manickam S. Nephroprotective role of Boerhavia diffusa in renal

- disorders: A review. *Res J Pharm Technol.* 2023; 16(2):962-968. doi: 10.52711/0974-360X.2023.00161.
41. Kalam M, Majeed B, Yaqoob A, Ghani R, Rahman S. Kasni (*Cichorium intybus* L.): A review on medicinal utility in perspective of Unani medicine. *Indian J Unani Med.* 2021, 13. doi: 10.53390/ijum.v13i2.5.
 42. Mishra PK, Bhaskar M, Pandey K. An Ayurvedic drug review of Bhoo-Aamalaki (*Phyllanthus niruri*). 2022; 25:54-61.
 43. Babar T, Gokhale V. Haritaki—An Ayurvedic literature review. *Int J Sci Res.* 2021, 10:22.
 44. Pathak M, Vyas H, Vyas MK. A clinical trial of Pippali (*Piper longum* Linn.) with special reference to Abheshaja. *Ayu.* 2010; 31(4):442-446. doi: 10.4103/0974-8520.82038. PMID: 22048536; PMCID: PMC3202257.
 45. Singh B. Katuki (*Picrorhiza kurroa*) — A promising Ayurvedic herb. *Biomed J Sci Tech Res.* 2021;36. doi: 10.26717/BJSTR.2021.36.005805.
 46. Devarshi P, Kanase A, Kanase R, Mane S, Patil S, Varute AT. Effect of mandur bhasma on lipolytic activities of liver, kidney and adipose tissue of albino rat during CCl₄ induced hepatic injury. *J Biosci.* 1986; 10(2):227-234.
 47. McMahon EJ, Campbell KL, Bauer JD, Mudge DW, Kelly JT. Altered dietary salt intake for people with chronic kidney disease. *Cochrane Database Syst Rev.* 2021; 6(6):CD010070. doi: 10.1002/14651858.CD010070.pub3. PMID: 34164803; PMCID: PMC8222708.
 48. Ko GJ, Rhee CM, Kalantar-Zadeh K, Joshi S. The effects of high-protein diets on kidney health and longevity. *J Am Soc Nephrol.* 2020; 31(8):1667-1679. doi: 10.1681/ASN.2020010028. PMID: 32669325; PMCID: PMC7460905.
 49. Fan Z, Yun J, Yu S, Yang Q, Song L. Alcohol consumption can be a "double-edged sword" for chronic kidney disease patients. *Med Sci Monit.* 2019 Sep 20; 25:7059-7072. doi: 10.12659/MSM.916121. PMID: 31538630; PMCID: PMC6767945.
 50. Siroha A, Punia Bangar S. Millet-based food products: An overview. *Curr Food Sci Technol Rep.* 2024;2. doi: 10.1007/s43555-024-00031-x.
 51. Metri K, Bhargav H, Chowdhury P, Nagendra H. Role of yoga in chronic kidney disease: A hypothetical review. *J Nephrol Ther.* 2014;4. doi: 10.4172/2161-0959.1000167.
 52. Maung SC, El Sara A, Chapman C, Cohen D, Cukor D. Sleep disorders and chronic kidney disease. *World J Nephrol.* 2016; 5(3):224-232. doi: 10.5527/wjn.v5.i3.224. PMID: 27152260; PMCID: PMC4848147.