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Case Study

INTEGRATING AYURVEDA IN CHRONIC KIDNEY DISEASE MANAGEMENT

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ABSTRACT

Chronic Kidney Disease (CKD) is increasingly common, affecting diverse age groups, including young adults. Conventional treatments like dialysis and renal transplantation are often prohibitively expensive in India, reducing access and quality of life for many patients who are ineligible for these treatments. This highlights the need for alternative therapies that support better health and manage CKD's progression. CKD involves irreversible kidney damage, frequently driven by hypertension and type 2 diabetes, both of which progress quietly until symptoms like pedal edema, appetite loss, nausea, urination issues, frothy urine, and fatigue arise. Diagnostic measures for CKD include kidney function tests, showing elevated serum urea and creatinine, and DTPA renal scans, which provide detailed insights into renal function and disease progression. Ayurvedic interventions, such as *Trivrit Avleha*, *Chander Vati*, *Asthipurak Vati*, *Sanjeevani Vati*, and *Sarvatobhadra Ras*, have shown promise in enhancing renal health, with improvements in DTPA scan results observed before and after treatment. A case report involving a 63-year-old male patient with CKD and new-onset hypertension illustrates this: after three months of Ayurvedic treatment at Jeena Sikho Lifecare Limited Hospital, Derabassi, the patient experienced relief from constipation, calf pain, bilateral flank pain, and flank swelling. This case demonstrates the potential of Ayurvedic therapies in CKD management, providing a holistic approach that can improve patient outcomes and alleviate CKD symptoms effectively.

INTRODUCTION

Chronic kidney disease (CKD) is a progressive condition that gradually impairs kidney function over time.[1] Early symptoms are often vague, like feeling unwell or having a poor appetite, making early detection challenging.[2] Screening is vital, especially for high-risk groups, such as those with hypertension, diabetes, or a family history of kidney issues.[3] CKD's prevalence is rising worldwide, with about 7.85 million cases in India and 37 million in the U.S., contributing to a significant global health burden with 1.2 million deaths in 2019.[4] Early detection and intervention are essential to slow CKD's progression and improve quality of life.[5]

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CKD also impacts quality of life significantly and is often linked with conditions like hypertension.[6] Standard treatments focus on managing symptoms and slowing progression, while Ayurveda offers a holistic approach by addressing the root imbalances contributing to CKD.[7] This case report demonstrates how Ayurvedic interventions, including personalized therapies, were effective in managing a CKD patient with new-onset hypertension.[8] Ayurveda's rebalancing approach provides a valuable complement to traditional care, supporting a more integrative healthcare path for CKD management.[9]

Case Report

A 63-year-old male with CKD-V since 2023 presented at Jeena Sikho Lifecare Limited Hospital, Derabassi, on March 5, 2024, with symptoms of constipation, calf muscle pain, bilateral flank pain, fatigue, weakness, appetite loss, disturbed sleep, and tenderness in a left-side swelling. His condition began with bilateral renal calculi causing hydronephrosis. His medical history includes high-grade Transitional Cell

Carcinoma (TCC) treated by TURBT in 2013 and a left nephrectomy in 2023, leaving him with one functioning kidney. Recently diagnosed with hypertension, he underwent a detailed Ayurvedic assessment, including history, physical exam, and diagnostic tests. The findings were observed during the initial examination of the patient on the first days mentioned in Table 1. Investigations conducted on the March 5, 2024, are detailed in Table 2 and Table 4.

Table 1: Examination Findings

Parameter	Findings	Parameter	Findings
Temperature	98.6°F	*Jivha*	*Saam*
Blood Pressure	166/100 mmHg	*Shabda*	*Spashta*
Pulse Rate	90/min	*Sparsha*	*Anushna*
Weight	86 kg	*Akruti*	*Madhyam*
Oxygen Saturation	98%	*Drik*	*Prakrut*
Nadi	*Vataj Pittaj (Tivra Gati)*	*Kshudha*	*Alpa*
Mala	*Malavashthamba*	*Agni*	*Mandya*
Mutra	*Alpa Shukla*	*Nidra*	*Khandit*

Table 2: Investigations on the Day of Admission

Parameter	Findings
Haemoglobin	11.8 gm%
Lipid Profile	
- Total Cholesterol	135.66 mg/dL
- HDL	35.11 mg/dL
- LDL	67.47 mg/dL
- VLDL	33.08 mg/dL
- Cholesterol/HDL Ratio	3.86 (within normal range)
- Triglycerides	165.39 mg/dL (elevated)
Rapid Tests	Non-reactive for HIV, HBsAg, and HCV
Inorganic Phosphorus	4.86 mg/dL
Calcium	8.76 mg/dL
eGFR	15 ml/min/1.73m^2

During his inpatient stay, the patient received Ayurvedic treatments like *Avagaha Sweda*, *Shiropichu*, and *Shiroabhyanga* with *Brahmi* oil, along with *Gokshuradi Siddha Sneha Basti* and *Guduchyadi Kashaya Basti* on alternate days.[10] He also had a *Lepam* of *Dashmool*, *Trikatu*, and *Shunthi* applied to his left flank. Concurrently, he continued with sodium bicarbonate and a calcium channel blocker. After ten days, he experienced relief from constipation, calf pain, and swelling, with only mild residual flank pain.[11]

On March 26, 2024, fifteen days post-discharge, the patient returned with left flank swelling, fever, and urinary tract infection symptoms, including reduced urine output and white discharge. Examination showed hemoglobin at 12.8gm%, turbid urine with faint protein, and 20-25 pus cells per high-power field. Additional Ayurvedic treatments were prescribed, with a follow-up advised in 15 days or sooner if necessary.[12]

Table 3: Vitals Observed During Follow-Up Visits

Date	Weight in Kg	Temperature in F	Pulse per min	Blood Pressure
05/03/2024	86	96.5	90	166/100 mm of Hg
26/03/2024	80	100.1	96	110/70 mm of Hg
16/04/2024	79	97.4	82	130/90 mm of Hg
14/05/2024	77	98.2	86	140/80 mm of Hg
15/06/2024	77	97.6	88	130/90 mm of Hg

On April 16, 2024, the patient returned for a follow-up, reporting improved urinary output, clear urine, and no fever symptoms, though he experienced a burning sensation in his soles for the past 2-3 days. Other health indicators, such as bowel movements, appetite, and sleep, were normal, with no swelling or shortness of breath.[13] His hemoglobin was at 12.1gm%, with further details on findings and Ayurvedic medications noted in Tables 3 and 5.[14]

By the next follow-up on May 13, 2024, the patient showed continued improvement, with reduced swelling and decreased burning in his soles, although he developed a mild cough with sputum and slight abdominal distension.[15] His eGFR measured 19.5ml/min/1.73m^2, with stable vital signs as recorded in Tables 3 and 4. On June 18, 2024, the patient reported full relief from pain and burning soles, with clear bowel movements and no new complaints. His vital signs, including a BSL of 81 mg/dl, BUN of 19mg/dl, and a BUN/Creatinine ratio of 5.22, were within normal ranges, reflecting positive health progress.[16]

Table 4: Investigation Reports during Follow-Up Visits

Investigations	Sr. Urea mg/dL	Sr. Creatinine mg/dL	Sr. Uric Acid mg/dL	Na^+ mmol/L	K^+ mmol/L	Cl^- mmol/L
05/03/24	71.43	4.28	5.54	144.2	4.53	105.2
09/03/24	57.16	4.13	6.61	143.9	4.67	105.1
13/03/24	59.65	4.10	7.22	143.2	5.18	105.3
26/03/24	55.2	2.50	7.0	137.5	4.2	103.2
6/04/24	53.3	4.47	9.02			
13/05/24	32.5	3.24	7.25			
15/06/24	41.0	3.67	6.13	137	4.05	99.5

Table 5: Treatment Administered During Follow-Up Visits

05/03/2024	14/03/2024	30/03/2024	16/04/2024	14/05/2024	18/06/2024
Trivrit Avaleha: half a teaspoon HS with lukewarm water	DS Powder half teaspoon HS with lukewarm water	CKD Syrup 15ml TDS after meal mixed with equal amount of lukewarm water	*Charam Rog Har Vati* 2 Tab BD after meal with lukewarm water	*Chander Vati*: 2 tablets BD after meal with lukewarm water	*Chander Vati:* 2 tablets BD after meal with lukewarm water
GFR Powder: Half a teaspoon BD after meal with lukewarm water	GFR Powder: Half a teaspoon BD after meal with lukewarm water	Sanjeevani Capsules 1 Cap. BD after meal with lukewarm water	GFR Powder: Half a teaspoon BD after meal with lukewarm water	GFR Powder: Half a teaspoon BD after meal with lukewarm water	GFR Powder: Half a teaspoon BD after meal with lukewarm water
Chander Vati: 2 tablets BD after meal with lukewarm water	*Chander Vati*: 2 tablets BD after meal with lukewarm water		*Chander Vati*: 2 tablets BD after meal with lukewarm water	*Charam Rog har vati* 2 Tablets BD after meal with lukewarm water	URI Plus 2 Tab BD after meal with lukewarm water
Asthipurk Vati: 2 tablets BD after meal with lukewarm water	*Asthipurk Vati*: 2 tablets BD after meal with lukewarm water		*Sarvatobhadra Ras* 1 Tab BD after meal with lukewarm water	Hemotone Syp 20ml BD after meal mixed with equal amount of lukewarm water	Kidney Care Syp 20ml BD after meal mixed with equal amount of lukewarm water
Divya Shakti					

Powder: Half teaspoon HS with lukewarm water					

The patient adhered to a meticulously designed Disciplined and Intelligent Person (DIP) Diet to complement the Ayurvedic treatments for Chronic Kidney Disease (CKD).

Treatment Plan

Diet Plan[4]: The diet regimen provided by Jeena Sikho Lifecare Limited, Hospital, Derabassi, includes the following essential guidelines:

a. Avoidance of Certain Foods

- Refrain from consuming wheat, processed foods, refined items, dairy, animal products, coffee, and tea.
- Avoid eating after 8 PM.

b. Hydration

- Drink alkaline water 3-4 times daily.
- Incorporate herbal tea, living water, and turmeric-infused water into your daily routine.
- Limit water intake to small sips whenever the patient feels thirsty, ensuring that only a limited amount is consumed at each instance.

c. Millet Intake

- Include five millets in your diet: Foxtail, Barnyard, Little, Kodo, and Browntop.
- Use only steel cookware when preparing millets.

d. Meal Timing and Structure (DIP Diet)[17]

1. Breakfast (9:00-10:00 AM): The patient was provided with Plate 1, which included a variety of fruits.

2. Lunch (12:30 PM - 2:00 PM): The patient was served Plate 1 and Plate 2. Plate 1 contained a steamed vegetable salad or steamed sprouts, while Plate 2 consisted of a cooked millet-based diet.

3. Dinner (6:15-7:30 PM): The patient was served the same as lunch, with both Plate 1 and Plate 2. However, dinner was scheduled for an earlier time.

e. Fasting

- It is recommended fast for once in a week or once in 3-4 days.

f. Special Instructions

- Offer gratitude to the divine before eating or drinking.
- Sit in *Vajrasana* (a yoga posture) after every meal.

g. Diet Types

- The diet includes solid, semi-solid, and smoothie options without added salt.
- Suggested foods include herbal tea, red juice, a variety of fruits, fermented millet shakes, steamed sprouts, soaked almonds, and salads.

II. Lifestyle Recommendations

a) Practice sun gazing daily for at least 30 minutes.
b) Engage in yoga (*Sukh asana and Suksham Pranayama*) from 6:00 AM to 7:00 AM.
c) Incorporate meditation for relaxation.
d) Walk briskly for 30 minutes barefoot.
e) Ensure 6-8 hours of quality sleep each night.
f) Follow a structured daily routine (*Dincharya*).

***Panchakarma* Procedures Administered to Patients**

1. *Avagaha Sweda*

- **Procedure**: The patient sits in a tub of 42°C warm water infused with medicinal herbs for 30–60 minutes.[18]
- **Physiology**: Warm water induces vasodilation, increasing blood flow and promoting sweating to eliminate toxins; herbal properties are absorbed through the skin.[19]
- **Mode of Action**: The heat activates the sympathetic nervous system, releasing hormones that boost metabolism, fat breakdown, and toxin elimination (urea, creatinine, ammonia). Described by *Acharya Charaka* as *Sagni Sweda*, it mobilizes and liquefies *Doshas* lodged in the body's microchannels (*Srotas*).[20]

2. *Gokshuradi Siddha Sneha Matra Basti*

- **Procedure**: Warm *Gokshuradi Siddha Sneha* oil is administered rectally in a 90ml dose, with retention for enhanced absorption.[21]
- **Physiology**: The oil penetrates the rectal mucosa, lubricating the intestines to aid digestion and promote bowel movements.[22]
- **Mode of Action**: This *Matra Basti* balances *Vata dosha*, facilitating elimination of gas, stool, and urine. The oil, after entering the large intestine (*Pakwashaya*), spreads systemically to pacify *Vata dosha*. *Gokshura*, a diuretic, strengthens the body and balances all three *Doshas* (*Tridosha*), exerting both local and systemic effects through the body's vascular network.[23]

***Panchakarma* Procedures Administered to Patients**

3. *Guduchyadi Kashaya Niruha Basti*

- **Procedure**: A 300ml warm decoction of *Guduchyadi* herbs is administered rectally and retained for a specified duration.[24]

- **Physiology**: This *Niruha Basti* targets and controls *Vata dosha* at its root site in the large intestine (*Pakwashaya*), helping to regulate *Vata* throughout the body, thus addressing all *Vata* disorders.[25]
- **Mode of Action**: As per *Acharya Sushruta*, the *Virya* (potency) of *Basti* spreads through the body via the *Srotas* (channels), following the *Kedarikulya Nyaya* principle for systemic effect. *Guduchi* balances all three *Doshas*, supports immunity, and offers anti-inflammatory and anti-diabetic properties, enhancing overall health.[26]

4. *Shiro Abhyanga* (Head Massage)

- **Procedure**: Warm medicated oil is massaged on the scalp and neck for 20–30 minutes.[27]
- **Physiology**: Stimulates blood flow and enhances lymphatic drainage in the head and neck, aiding detoxification.[28]
- **Mode of Action**: Increases lymph flow with tryptophan, stimulating melatonin and serotonin release for relaxation, improved sleep, mood regulation, anxiety relief, and enhanced metabolism.[29]

5. *Shiro Pichu* with *Brahmi Oil*

- **Procedure**: A warm *Brahmi* oil-soaked cotton pad is placed on the forehead and retained for 30–60 minutes.[30]
- **Physiology**: *Brahmi* oil penetrates the skin, nourishing tissues and calming the mind.
- **Mode of Action**: Alleviates headaches, migraines, and mental fatigue by enhancing blood flow and oxygen supply through vasodilation. Brahmi's sedative properties reduce stress, improve mood, and relax muscles, providing therapeutic and psychological benefits.[31]

6. *Lepam* using *Dashmool*, *Trikatu*, and *Shunthi*

- **Procedure**: A paste made from *Dashmool*, *Trikatu*, and *Shunthi* is applied to affected areas, left on for a specific time, then rinsed off.
- **Physiology**: This topical application allows direct absorption of herbal properties, bypassing liver metabolism.
- **Mode of Action**: The herbs induce localized sweating, aiding in the removal of metabolic wastes (urea, creatinine, uric acid), reducing edema, and relieving pain. *Dashmool* provides anti-inflammatory, antioxidant, and analgesic benefits; *Trikatu* balances *Vata* and *Kapha doshas* and offers anti-inflammatory effects; *Shunthi* serves as an anti-inflammatory and analgesic agent.[32]

Medicinal Interventions

The Ayurvedic treatment regimen included *Trivrit Avaleha*, GFR Powder, *Chander Vati*, *Asthipurk Vati*, *Divya Shakti Powder*, *Sarvatobhadra Ras*, *Kidney Care Syrup*, and *URI Plus Drops*, in conjunction with the *Panchakarma* therapies. Ayurvedic medicines, ingredients, dosage, duration, and their therapeutic effects are presented in Table 6.

DTPA Renogram	**07/03/2024**	**18/06/2024**
Left Kidney	Not Visualized in Size as Nephrectomy Done	
Right Kidney	Normal in Size	Normal in Size
	Visualization of the perfusion Phase as poor and delayed.	Visualization of perfusion Phase as sub-normal.
	Relative Perfusion is poor and delayed.	Relative Perfusion is sub-normal.
	The concentration of the uptake phase is poor and delayed.	The concentration of the uptake phase is sub-normal.
	Severely compromised Cortical Function	Compromised Cortical Function
	There is Obstruction to Outflow At PUJ.	There is non-obstructed drainage seen
Global GFR	10.0 ml/min/1.96 sq m BSA	20.0 ml/min/ 1.82 sq m BSA

The patient shows symptomatic improvement, with details in Table 8. Reports indicate a reduction in urea and creatinine levels (Table 4) and an enhanced GFR, improved perfusion, and drainage patterns on the DTPA scan (Table 7). Routine follow-ups, along with adherence to a proper diet and lifestyle, are advised.

Table 8: Symptoms Observed Before and After Treatment with Scores

Score 0 to 10; 0 being the lowest point and 10 being the highest point

Before Treatment (on 05/03/2024)	**After Treatment (on 18/06/2023)**
Pain in Calf muscles (3 /10)	Relief from Calf muscles pain (0/10)
Bilateral flank pain (6/10)	Relief from Pain (0/10)

Left lateral swelling with tenderness (8/10)	Swelling regressed (0/10)
Weakness (8/10)	Weakness (2/10)
Constipation(7/10)	Constipation (0/10)
Appetite (2/10)	Appetite improved (8/10)
Sleep (3/10)	Sound Sleep (8/10)

RESULT

Efficacy of Ayurvedic Interventions: The patient's symptoms and diagnostic parameters showed considerable improvement after three months of Ayurvedic treatment, suggesting that such interventions can play a valuable role in managing CKD. The improvement in e-GFR and reduction in swelling and pain support the potential benefits of these traditional therapies in enhancing kidney function and overall well-being.

While the results are promising, this case report is based on a single patient, and the findings should be interpreted with caution. Larger studies and randomized controlled trials are needed to confirm the efficacy and safety of Ayurvedic treatments for CKD and to establish standardized protocols for their use in clinical practice.

DISCUSSION

In this context, the integration of Ayurvedic medicine into the management of CKD presents a promising alternative. This case report details the application of various Ayurvedic treatments in a 63-year-old male patient with CKD and newly diagnosed hypertension. The patient presented with symptoms including constipation, bilateral flank pain, and left lateral swelling, compounded by a complex medical history that included a solitary functioning right kidney post-nephrectomy and a history of high-grade Transitional Cell Carcinoma (TCC).

The Ayurvedic treatment involved several *Panchakarma* procedures

***Panchakarma* Therapies**

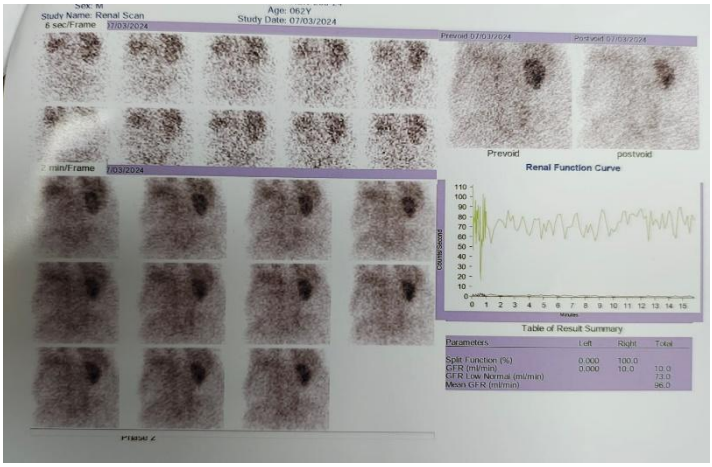
- *Avagaha Sweda*: Warm herbal-infused bath at 42°C to induce sweating and improve blood flow for toxin elimination.
- *Gokshuradi Siddha Sneha Matra Basti*: Rectal administration of 90ml warm oil to balance *Vata dosha* and aid digestion.
- *Guduchyadi Kashaya Niruha Basti*: 300ml herbal decoction enema to alleviate *Vata* imbalance systemically.
- *Shiro Abhyanga*: Head massage with medicated oil to enhance blood circulation and relaxation.
- *Shiro Pichu* with *Brahmi* Oil: Cotton pad soaked in Brahmi oil placed on forehead to reduce stress and mental fatigue.
- *Lepam* with *Dashmool*, *Trikatu*, and *Shunthi*: Herbal paste applied for pain relief, anti-inflammatory, and antioxidant effects.

Ayurvedic Medicines

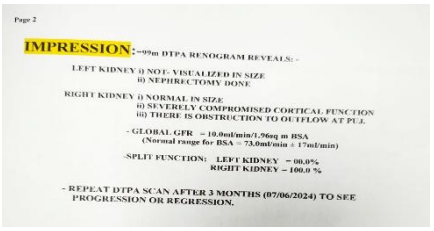
- *Chander Vati*: Balances *Pitta dosha*, relieves UTI symptoms, and has diuretic properties.
- *GFR Powder*: Reduces renal inflammation and supports detoxification.
- *Asthi Purak Vati*: Aids tissue regeneration, reduces oxidative stress, and provides cardiovascular support.
- *Trivrit Avaleh*: Promotes detoxification, reduces inflammation, and supports kidney health.
- *Divya Shakti Powder*: Enhances digestion, metabolism, and toxin elimination.
- CKD Syrup: Acts as a diuretic; Shatavari and Giloy reduce inflammation and aid tissue repair.
- *Sarvatobhadra Vati*: Supports CKD management with anti-inflammatory and detoxifying effects.
- Kidney Care Syrup: Combines herbs to reduce inflammation, promote renal health, and support detoxification.
- URI Plus: Contains antioxidants and diuretic agents to improve urinary health and aid toxin removal.

Integrating Ayurvedic treatments provides a comprehensive approach to managing CKD, addressing both symptoms and underlying imbalances to support kidney health and enhance patient well-being. While further research is needed to confirm these findings and refine treatment methods, this case report highlights the potential of Ayurvedic interventions as a valuable option in CKD management, especially in resource-limited settings.[33]

Images-1



Images-2



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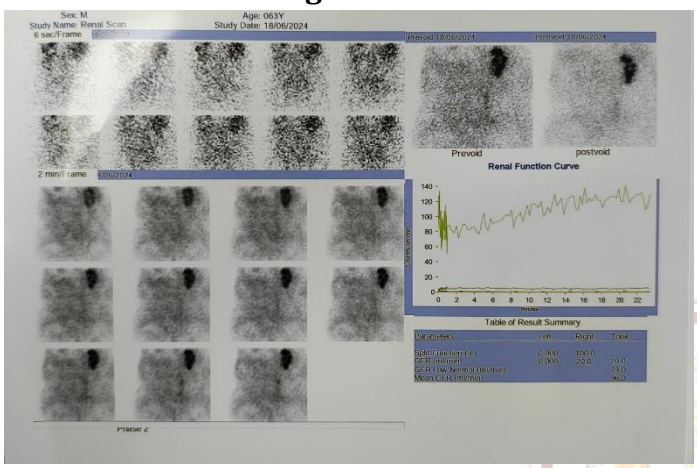

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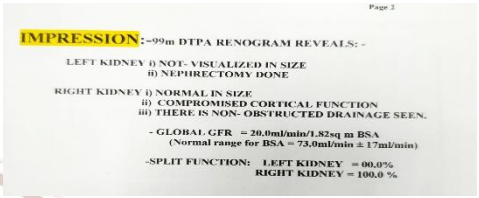

CONCLUSION

The case report on managing Chronic Kidney Disease (CKD) through integrated Ayurvedic and allopathic treatments highlights significant improvements in symptoms, vitals, and laboratory findings. Initially, the patient presented with decreased urine output, swelling, burning sensations, and UTI symptoms. After three months of Ayurvedic therapy, there was an increase in urinary output, clear urine, and relief from pain and burning sensations, with no new complaints during follow-ups. Vital signs showed improvement, with blood pressure decreasing from 166/100 mmHg to 130/90mmHg and weight reduction from 86kg to 77kg, indicating better cardiovascular health and lifestyle adjustments. Laboratory tests revealed a notable decrease in serum creatinine from 4.28 to 3.24mg/dL, serum urea from 71.43 to 32.5mg/dL, and an increase in GFR from 10.0 to 20.0ml/min, suggesting enhanced kidney function. DTPA renogram results further confirmed improvements in renal perfusion and cortical function, supporting the efficacy of the Ayurvedic approach. These results underscore the potential of Ayurvedic treatments in CKD management, though further studies are needed to validate findings and standardize treatment protocols.

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