Research Article

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Evaluating the Efficacy of Ayurvedic Treatments in Stage V Chronic Kidney Disease: A Case Report

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ABSTRACT

Chronic kidney disease (CKD) is a progressive condition characterized by a gradual loss of kidney function over time, often leading to end-stage renal disease if not managed effectively. Stage V CKD, also known as end-stage renal disease, typically requires dialysis or kidney transplantation. However, there is growing interest in exploring alternative and complementary therapies, such as Ayurveda, for the management of CKD.

This case study focuses on a 32-year-old male diagnosed with Stage V CKD, who presented with symptoms including vertigo, muscle cramps, itching, and weakness. Over the course of treatment, these symptoms significantly improved. The patient's key laboratory parameters, such as serum creatinine, urea, and serum uric acid, also showed marked improvement, trending toward normal levels at the time of discharge. The treatment regimen included Ayurvedic oral medications like Tab. Asthipurak, Tab. Chander Vati, Renal Support syrup, and GFR powder, complemented by Panchakarma procedures such as Awgaha Swedan, Matra Basti, Kashaya Basti, and Shiroabhyanga.

The results of this case indicate that Ayurvedic interventions can lead to significant improvements in both biochemical markers and clinical symptoms in patients with Stage V CKD. These findings suggest that Ayurveda may offer a promising complementary or alternative approach to conventional CKD treatment, highlighting the need for further research in this area.

INTRODUCTION

Chronic kidney disease (CKD) is increasingly becoming a major global concern among non-communicable diseases. It reduces life expectancy, diminishes the number of productive years an individual can enjoy, and substantially raises healthcare costs, thereby placing a significant financial burden on society. Consequently, both individuals and communities suffer adverse effects[1]. Diseases of Basti are considered in Madhyamrogmarg[2], the treatment of which is difficult compared to other rogmarg.

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CKD is defined by impaired kidney function lasting longer than three months. It is characterized by a glomerular filtration rate (GFR) of less than 60 mL/min per 1.73 m^2 and elevated biomarkers, such as albuminuria, abnormalities in urine sediment, electrolyte imbalances, histological changes, structural abnormalities, and a history of kidney transplants (Kidney Disease: Improving Global Outcomes [KDIGO] 2013 Clinical Practice Guideline)[3]. In explaining Mutrakshay, various symptoms are listed, including difficulty in micturition, discoloration of urine, and thirst with a shrunken face[4].

Case Report

A 32-year-old male with a recent history of hypertension over the past 4–5 months was diagnosed with Stage V Chronic Kidney Disease (CKD). On 5th May 2024, he presented to Jeena Sikho Lifecare Ltd. Hospital, Derabassi, with symptoms including vertigo, muscle cramps, itching, and generalized weakness. On admission, his weight was 49 kg.

The initial laboratory findings are presented in Table 1.

Parameter	Findings on 5/5/24 (BEFORE TREATMENT)	Findings on 11/5/24 (POST TREATMENT)
Blood Pressure	120/80 mmHg	120/80 mmHg
Pulse Rate	120/min	84/min
Weight	49 kg	49 kg
Nadi	Vataj Pittaj	Vataj Kaphaj
Mala	Avikruta	Avikruta
Mutra	Avikruta	Avikruta
Jivha	Saam (Coated)	Niram
Shabda	Spashta	Spashta
Sparsha	Anushna	Avikruta
Akruti	Madhyam	Madhyam
Drik	Avikruta	Avikruta
Kshudha	Madhyam	Madhyam
Agni	Mandya	Madhyam
Nidra	Abhadhita	Abhadhita

The patient was taking an allopathic treatment regimen that included alpha-ketoglutarate to enhance muscle protein synthesis, febuxostat (a xanthine oxidase inhibitor) to manage elevated uric acid levels, a calcium channel blocker for hypertension, a proton pump inhibitor for hyperacidity, and additional supplements such as calcium and probiotics.

Clinically, there was no significant family history or personal medical history linked to his current condition. His symptoms, including muscle cramps, weakness, and itching, suggested the possibility of uremia. A comprehensive physical examination, along with laboratory tests, confirmed the diagnosis of Stage V CKD, necessitating prompt medical intervention.

Treatment Plan

I. Diet Plan:

The diet regimen provided by Jeena Sikho Lifecare Ltd. Hospital, Derabassi, includes the following essential guidelines:

a. Avoidance of Certain Foods:

Refrain from consuming wheat, processed foods, refined items, dairy and 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:

Breakfast (9:00-10:00 AM): The patient was provided with Plate 1, which included a variety of fruits.
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.
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 to fast once a week or once every 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 sungazing daily for at least 30 minutes.
b. Engage in yoga from 6:00 AM to 7:00 AM (*Sukhasana + Sukhasana Pranayama****).***
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****).***

III. Panchakarma Procedures

Awgaha Swedan
Procedure:
The patient sits in a tub filled with warm water infused with medicinal herbs.
The water temperature is maintained at 42 degrees to induce sweating.
The duration of the treatment typically lasts for 30-60 minutes.
Physiology:
The warm water causes vasodilation, increasing blood flow to the skin.
Sweating helps in the expulsion of metabolic wastes and toxins.
Enhances the absorption of herbal properties through the skin.

Mode of Action:

When a patient sits in a tub filled with hot water at a temperature of 42°C, the body's temperature rises, leading to vasodilation. This dilation of blood vessels enhances sympathetic nervous system activity, which triggers the release and activation of epinephrine, norepinephrine, and hormones from the thyroid gland. As a result, the metabolic rate and lipolysis (fat breakdown) increase, leading to a higher demand for oxygen. This process also promotes the release of metabolic wastes, such as urea, creatinine, ammonia, and uric acid. The elevated body temperature induces sweating, which aids in the expulsion of these toxins through the skin. Here is the formatted content for the journal article while preserving the original details:

स्नग्धिस्य सूक्ष्मेष्वयनेषु लीनं
स्वेदस्तु दोषं नयति द्रवत्वम्।
[Cha..Siddhi Sthana 1/8][5]

Awagaha Sweda

As described by Acharya Charak, Awagaha Sweda is a type of *Sagni Sweda* ***therapy that helps to liquefy and mobilize the*** *Doshas* ***lodged within the microchannels of the body.***

2. Gokshuradi Siddha Sneha Matra Basti

Procedure:
A medicated oil (Dose: 90 ml) (Gokshuradi Siddha) is warmed.
The patient is positioned comfortably, and the oil is administered through the rectum.
The procedure may involve retention of the oil for a specified duration.
Physiology:
The oil penetrates the rectal mucosa, enhancing absorption.
It lubricates the intestines and promotes bowel movements.

Mode of Action:

Matra basti normalizes Vata, leading to proper elimination of flatus, feces, urine, etc., and causes better physiological functioning of Vata dosha. Basti dravya spreads all over the body, pacifying the aggravated Vata dosha. Basti works on the whole body after entering Pakvashaya (large intestine) or Guda (anus). Guda (anus) is said to be the root of the body (Sharira Mula), having Sira (veins) and Dhamani (arteries), which spread all over the body[6]. It exerts local as well as systemic effects.

3. Gokshuradi Kashaya Niruha Basti

Procedure:
A decoction (300 ml) of *Gokshuradi* herbs is prepared and strained.
The warm decoction is administered through the rectum.
The patient may retain the decoction for a specific time.

Physiology:

Niruha Basti, on entering *Pakvashya*, terminates morbid *Vata dosha* at its roots. When *Vata* is controlled in *Pakvashya*, which is the center for the administration of *Vata*, the other subtypes of *Vata* located in different parts of the body will also be automatically controlled. For example, just as the flowers, fruits, leaves, and branches of a tree get destroyed when the root of the tree is cut off, in the same way, when *Vata dosha* is controlled in *Pakvashya*, it cures all *Vata* disorders by balancing *Vata dosha* existing all over the body.

Mode of Action:

Acharya Sushruta states that the *Virya* of the *Basti* drug reaches all over the body through *Strotas*, in the same way as water poured at the root of a plant reaches up to the leaves. When *Basti* is administered in *Pakvashya*, its *Virya* is taken up by *Samana Vayu* with the help of *Apana Vayu*. Then it reaches other types of *Vayu* as well. The transport

of *Basti dravya* follows *Kedarikulya Nyaya*, which spreads it throughout the body via different types of *Vata*.
In *Gokshura Siddha Sneha* and *Kashaya Basti*, *Gokshura* is diuretic, balances *Tridosha*, and promotes strength.

4. Shiroabhyanga (Head Massage)

Procedure:
Warm medicated oil (*Brahmi oil*) is gently massaged onto the scalp and neck.
The duration is usually around 20-30 minutes.
Physiology:
Stimulates blood flow to the scalp and promotes relaxation.
Enhances lymphatic drainage in the head and neck region.

Mode of Action:

Abhyanga enhances local lymphatic drainage, leading to an increase in lymphatic flow, which contains amino acids like tryptophan. Elevated tryptophan levels stimulate the pineal gland, resulting in the secretion of melatonin and serotonin. Melatonin induces sedation and a sense of well-being, while serotonin promotes sleep and helps regulate mood. Consequently, *Abhyanga* can relieve anxiety, improve sleep quality, alleviate depression, and enhance overall metabolism.

5. Patra Potli Swedan

Procedure:
Eranda and *Nirgundiadi* leaves are heated or fried in *Mahanarayan oil*, then tied in a bolus and heated at a constant temperature.
The heated bolus is continuously rubbed over pain-affected areas.
The fomentation lasts for 5-10 minutes in each posture.
A uniform temperature of the bolus is maintained throughout the procedure by dipping it in the heated mixture of medicated decoction.
Physiology:
Improves blood circulation in the body.
Soothes the nerves and offers relief from neuralgic pain caused by nerve disorders.
Helps to eliminate toxins from the body through sweating.
Improves sensory and motor functions.

Mode of Action:

After topical sudation, the absorption of ingredients through the skin directly benefits the localized application. This therapy opens *microchannels (Strotas)*, melts *Shleshma* (located in *Shakha*), and induces sweating over the localized area, facilitating the excretion of metabolic waste like urea, creatinine, and uric acid. It increases peripheral blood supply, relieving body ache, inflammation, and stiffness.

Medicinal Interventions

Asthipurak Vati: 2 tablets BD (*Adhobhakt* with *Koshna jala*).
Chandar Vati: 2 tablets BD (*Adhobhakt* with *Koshna jala*).
GFR Powder: ½ tsp BD (*Adhobhakt* with *Koshna jala*).
Cap. JS BP Cure: 2 capsules BD (*Adhobhakt* with *Koshna jala*).
Syrup Renal Support: 20 ml BD (*Adhobhakt* with *Samamatra Koshna jala*).

On Discharge Medication
Chandar Vati: 2 tablets BD (*Adhobhakt* with *Koshna jala*).
Mutravardhak: 2 tablets BD (*Adhobhakt* with *Koshna jala*).
Renal Support Syrup: 20 ml BD (*Adhobhakt* with *Samamatra Koshna jala*).
DS Powder: ½ tsp HS (*Nishakal* with *Koshna jala*).
GFR Powder: ½ tsp BD (*Adhobhakt* with *Koshna jala*).
Sama Vati: 1 tablet BD (*Adhobhakt* with *Koshna jala*).

Patient Progress:

During admission, the patient's blood pressure remained stable, and his SpO_2 levels stayed above 95%. His initial complaints of burning micturition and a burning sensation in the anal region declined over the following days. There was no shortness of breath, and other symptoms continued to improve. The patient's water intake and urine output were balanced at 1000 ml/day, and his appetite and bowel movements remained stable.

Diagnostic Assessment

The diagnostic assessment based on laboratory investigations is presented in Table 2.

Table 2: Diagnostic Assessment and Laboratory Investigations

Parameter	5/5/24	6/5/24	11/5/24
Hb (g/dL)	8.3	-	8.4
Urea (mg/dL)	-	98	80.92
Creatinine (mg/dL)	-	8.9	6.51
Uric Acid (mg/dL)	-	10.57	6.31
Na+ (mEq/L)	139.5	-	143
K+ (mEq/L)	4.03	-	5.41
Cl- (mEq/L)	104.1	-	105

Treatment Protocol Administered During Hospitalization

The patient was treated with a combination of Ayurvedic therapies designed to balance the *Vata dosha*, along with *Pitta* and *Kapha*, which are believed to be involved in CKD. The treatment included various herbal decoctions, powders, tablets, and dietary modifications as follows:

After a thorough examination of the patient, an Ayurvedic treatment regimen included Avgaha Sweda (up to the navel), Gokshuradi Siddha Sneha (90ml), and Kashaya Basti (300ml) (medicated enemas) on alternate days, and Shiro-abhyanga with Bramhi Taila and Eranda Patra potli swedan for 3 days. The patient had a burning sensation around the anal region after defecation. Guda pichu (placing an oil-dipped cotton swab in the anal region) with Jatyadi oil was advised for the same.

Pain was in the mild category at the time of admission, which got lessened a bit after the therapy procedures. Blood pressure fluctuated between 150/90 mmHg and 110/70 mmHg. Other vital parameters, such as temperature, pulse, and oxygen saturation, remained in a healthy range throughout. During most of the hospital stay, urine output equaled the water intake (1000 ml/day).

Follow-up and Outcome:

Daily rounds conducted by physicians at the hospital consistently demonstrated a reduction in all symptoms the patient presented with at the time of admission.

Table 3: Symptoms Observed Before and After Treatment with Scores

SYMPTOMS	BEFORE TREATMENT on 13/5/24	POST TREATMENT on 23/5/24
Vertigo	1/10	0/10
Weakness	5/10	0/10
Itching	4/10	0/10
Muscle cramps	5/10	0/10
Burning Micturition	3/10	0/10
Pain in Ankle joint	3/10	1/10

DISCUSSION:

The Ayurvedic treatment regimen, along with previously prescribed necessary allopathic medicines, demonstrated a significant positive impact on the patient's clinical and biochemical parameters. Treatment was given considering the Ayurvedic pathology of Mutraghat. Kleda plays an important role in the causation of CKD. All the medicines and therapies were directed to effectively manage Kleda.

Creatinine levels, a key indicator of kidney function, decreased from 8.9 mg/dL at the start to 6.5 mg/dL by the end of the treatment period. Similarly, urea levels, which were initially very high at 98 mg/dL, reduced to 81 mg/dL. Hemoglobin levels showed stabilization and slight improvement, indicating better overall health and reduced anemia. These improvements suggest that Ayurvedic treatments could be a viable alternative or complementary therapy to conventional CKD treatments. Comparisons with existing literature on conventional treatments for CKD show that while modern medicine often stabilizes the condition, Ayurvedic treatments may offer additional benefits in reducing biochemical parameters and improving quality of life without significant side effects.

The Ayurvedic treatment protocol for the patient diagnosed with chronic kidney disease (CKD) stage V, correlated with Mutraaghata in Ayurveda, was strategically designed to leverage the therapeutic properties of various Ayurvedic herbs known for their efficacy in managing renal disorders. The treatment was initiated with formulations that possess diuretic, anti-inflammatory, rejuvenative, and detoxifying properties, which collectively aim to restore kidney function and balance the Doshas.

GFR Powder, comprising Bhoomi Amalaki, Haritaki, Vibhitaki, Kaasni, Punarnava, and Gokshur, is known for its diuretic and anti-inflammatory effects. These herbs help in reducing the accumulated fluids and inflammation in the kidneys, which is critical in managing the symptoms of CKD. The Tikta and Kashaya guna, along with the sheeta virya of these herbs, aid in pacifying Pitta and Kapha doshas, thus addressing the pathophysiology of Mutraaghat.

Chandar Vati includes a blend of Vacha, Kalmegh, Devdaru, Guduchi, Haridra, and other potent herbs that exhibit detoxifying and rejuvenative actions. The Ushna virya and Katu Vipaka of these herbs enhance metabolic processes and promote the elimination of toxins, thereby supporting kidney health. This formulation is particularly beneficial in reducing the oxidative stress and inflammation associated with CKD.

URI Plus combines Triphala, Gokshura, Shodhita Guggulu, and Guduchi, which are known for their diuretic and anti-inflammatory properties. This formulation enhances urine output, reduces fluid retention, and alleviates inflammation, thereby supporting kidney function. The Madhura Vipaka of these herbs also helps in pacifying Pitta dosha.

JS BP Cure with Sarpagandha, Arjun, Shigru, Triphala, and Godanti Bhasma is designed to manage hypertension, a common comorbidity in CKD. The sheeta virya and madhura vipaka of these herbs help in reducing blood pressure and preventing further renal damage, thereby supporting overall kidney function.

Gokshuradi siddha sneha basti and Kashaya basti were administered on alternate days. Matra basti, in general,

normalizes vata, leading to proper elimination of flatus, feces, urine, etc., and causes better physiological functioning of vata dosha. Basti dravya spreads all over the body and pacifies the aggravated vata dosha. Basti works on the whole body after entering pakvashaya (large intestine) or guda (anus). Guda (anus) is said to be the root of the body (shariramula) having sira (veins) and dhamani (arteries), which spread all over the body. It exerts local as well as systemic effects. Gokshura (Tribulus terrestris) is considered as bastishodhak by Bhavprakash and also possesses rejuvenative properties.
There is an important role of diet to play in cases of chronic kidney disease. The importance of HWI, HDT, and DIP diet is already established.

CONCLUSION:

The case report demonstrates that Ayurvedic interventions can be a promising complementary or alternative approach in the management of Stage V Chronic Kidney Disease (CKD). The 32-year-old male patient exhibited significant improvements in both clinical symptoms and laboratory parameters throughout the treatment period.
Improvements Observed:
Symptoms:
The patient reported a considerable reduction in symptoms such as vertigo, muscle cramps, itching, and generalized weakness, which were prominent at the time of admission.
Vital Signs:
Blood pressure remained stable around 150/90 mmHg throughout the hospitalization, and SpO2 levels were consistently above 95%.
The patient's appetite and bowel movements were stable, and he experienced no shortness of breath during the treatment.
Laboratory Investigations:
Creatinine levels decreased from 8.9 mg/dL at admission to 6.5 mg/dL by discharge.
Urea levels improved from 98 mg/dL to 81 mg/dL.
Hemoglobin levels showed stabilization and slight improvement, indicating better overall health and reduced anemia.
These findings suggest that the Ayurvedic treatment regimen not only alleviated the patient's symptoms but also contributed to the improvement of key biochemical parameters, highlighting the potential efficacy of Ayurvedic treatments in managing CKD. Further research is warranted to explore the broader applicability of these findings in clinical practice.

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