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Integrative Ayurvedic Management of Chronic Kidney Disease: A Case Study Highlighting Efficacy and Patient-Centric Approaches

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Abstract

Chronic kidney disease (CKD), also known as chronic renal failure (CRF), is a progressive condition resulting from impaired renal function due to various medical or systemic disorders, often exacerbated by the demands of modern fast-paced lifestyles. Numerous factors identified in contemporary medical literature contribute to the progression from early stages to end-stage disease, requiring expensive treatments with limited efficacy in advanced cases. *Ayurveda*, the ancient holistic system of medicine, emphasizes early intervention and prevention to avert complications. Although CKD is not explicitly described in *Ayurvedic* texts, its management can be effectively addressed by applying the core principles of *Ayurveda*, including root cause analysis and treatment tailored to the underlying pathophysiology of the condition.

This article presents the successful management of a 65-year-old male patient diagnosed with CKD and hypertension who presented with symptoms of generalized weakness, loss of appetite, and elevated serum creatinine levels. Integrative *Ayurvedic* management was implemented on an outpatient basis, utilizing evidence-based *Ayurvedic* formulations. The patient experienced significant symptomatic relief and an overall improvement in well-being. This case highlights the potential of integrative *Ayurvedic* approaches in managing CKD, offering a cost-effective, patient-centric alternative to conventional therapies.

Keywords: Chronic kidney disease, Hypertension, *Ayurveda*, Integrative management, *Ayurvedic* formulations, Case report, Serum creatinine.

Introduction

Chronic kidney disease (CKD) is a progressive disorder characterized by the gradual loss of kidney function over months or years. If not addressed in its early stages, CKD can lead to life-threatening complications. Recent studies indicate that the prevalence of CKD in India varies significantly, with estimates ranging from 2.97% to 17.2% among adults ^[1]. This variation underscores the growing public health challenge posed by CKD in the country.

The primary etiologies of CKD include glomerulonephritis and chronic kidney infections, which impair the kidneys' ability to filter blood effectively. Consequently, metabolic toxins accumulate, leading to elevated serum blood urea and creatinine levels ^[2]. Clinically, patients may present with decreased urine output, hematuria or proteinuria (notably albuminuria), and generalized swelling (pitting edema) due to the obstruction of blood circulation channels by harmful substances like urea. Early detection and management are crucial to prevent progression to end-stage kidney disease, which often necessitates interventions such as dialysis or renal

transplantation. These conventional treatments are not only costly but also carry risks of complications, including bleeding, infection, vascular thrombosis, and transplant rejection.

Given these challenges, there is an imperative need to explore alternative, cost-effective, and safe therapeutic approaches for CKD management. In *Ayurveda*, CKD can be correlated with various conditions of *Mootraghata*, which are *tridoshaja* in nature and involve the obstruction of urine formation due to intrinsic and extrinsic factors ^[3]. *Ayurvedic* management focuses on identifying and treating the root causes, emphasizing lifestyle modifications and *Ayurvedic* formulations to restore kidney function and prevent disease progression. This case study exemplifies the potential of *Ayurvedic* principles in providing a safe and effective alternative approach to CKD management.

Case Report

A 65-year-old male with hypertension and chronic kidney disease (CKD) presented to Jeena Sikho Lifecare Limited

Hospital, Kanpur, Uttar Pradesh, India, on September 6, 2024. The patient reported symptoms of generalized weakness, loss of appetite, and reduced urine output.

Investigations conducted on September 1, 2024, revealed a hemoglobin level of 5.8 g/dL, serum creatinine of 13.47 mg/dL, and an estimated glomerular filtration rate (GFR) of 4

mL/min/1.73 m². Ultrasound findings indicated grade 1 hepatomegaly, thickening of the urinary bladder wall, and grade 1 prostatomegaly. The patient's medical history includes cholecystectomy. The patient's initial assessment on the first day is outlined in Table 1.

Table 1: Examination Findings

| Parameter | Findings |
|--------------------|-------------------------------|
| Blood Pressure | 130/80 mm of Hg |
| Pulse Rate | 88/min |
| Respiratory System | Chest clear |
| Per Abdomen (P/A) | Soft, Non Tender |
| Weight | 67 kg |
| Nadi | Vata-Kaphaj |
| Mala | Malavashatmbha (constipation) |
| Mutra | Safena (frothy) |
| Jivha | Saam (coated) |
| Shabda | Spashta |
| Sparsha | Anushna Sheet |
| Akriti | Madhyam |
| Drik | Prakrit |
| Kshudha | Alpa |
| Agni | Mandya |
| Nidra | Alpa |

The patient was managed with a comprehensive treatment protocol that integrated *Ayurvedic* and allopathic medications, along with individualized dietary and lifestyle modifications. This approach was designed to enhance overall well-being and support the restoration of kidney function. Additionally, as the patient's blood sugar levels were slightly elevated, a tailored diet beneficial for managing blood sugar levels while supporting kidney function was also recommended. The patient was managed on an outpatient basis and was advised to return for follow-up at specified intervals.

Medicinal Intervention

The *Ayurvedic* treatment protocol for this case involved the administration of a carefully curated combination of *Ayurvedic* formulations, including Nephron Plus, Dr. CKD, Mutravardhak Vati, Yakrit Shoth Har Vati, and Kidney Care Syrup, among others. A detailed overview of these *Ayurvedic* medicines, encompassing their ingredients, duration of administration, and specific therapeutic purposes, is provided in Table 2.

Table 2: *Ayurvedic* Medications, Ingredients, Duration, and Therapeutic Benefits in the Management of CKD.

| Medicine Name | Ingredients | Duration | Therapeutic Effects |
|-------------------|--|--------------------------|---|
| GFR Powder | <i>Bhumi Amla (Phyllanthus Fraternus)</i> , <i>Badi Harad (Terminalia Chebula)</i> , <i>Bahera (Terminalia Belerica)</i> , <i>Kasni (Cichorium Lendivia)</i> , <i>Makoy (Solanus Nigrum)</i> , <i>Punarnava (Boerhaavia diffusa)</i> , <i>Gokshur (Tribulus Terrestris)</i> | 06/09/2024 to 09/12/2024 | Supports kidney function and reduces inflammation, helping with renal symptoms. |
| Mutravardhak Vati | <i>Gokshura (Tribulus terrestris)</i> , <i>Guggul (Commiphora wightii)</i> , <i>Sonth (Zingiber officinale)</i> , <i>Kalimirch (Piper nigrum)</i> , <i>Pippal (Piper longum)</i> , <i>Bahera (Terminalia bellerica)</i> , <i>Harad (Terminalia chebula)</i> , <i>Amla (Phyllanthus emblica)</i> , <i>Motha (Cyperus rotundus)</i> . | 06/09/2024 to 09/12/2024 | supports diuresis, reduces inflammation, alleviates urinary obstruction, manage water retention |
| Nephron plus | <i>Hazrool Yahood Bhasma powder</i> , <i>Chandraprabha powder</i> , <i>Pashanbheda (Bergenia ligulata)</i> , <i>Mulak Kshar powder (Raphanus sativus)</i> , <i>Yava Kshar powder (Hordeum vulgare)</i> , <i>Amalaki Rasayan powder (Phyllanthus emblica)</i> , <i>Trivikrama Rasa powder</i> , <i>Navasara powder</i> , <i>Nimbu Stava powder (Citrus limon)</i> , <i>Gokhru (Tribulus terrestris)</i> , <i>Shilapushpa (Didymocarpus pedicellatus)</i> , <i>Black Salt powder</i> , and <i>Hing powder (Ferula foetida)</i> . | 06/09/2024 to 09/12/2024 | kidney disease, burning micturition, UTI, CA bladder |
| CKD TAB | <i>Apamarg (Achyranthes aspera)</i> , <i>Gokhru (Tribulus terrestris)</i> , <i>Punarnava (Boerhavia diffusa)</i> , <i>Varun chhaal (Crateva nurvala)</i> , <i>Mulethi (Glycyrrhiza glabra)</i> , <i>Sheetal chini (Piper cubeba)</i> | 06/09/2024 to 09/12/2024 | supporting renal function, reducing inflammation, promoting diuresis, aiding detoxification, balancing electrolyte levels |
| Kidney Care Symp. | <i>Punarnavarishta</i> , <i>Chandanasava</i> , <i>Ushirasava</i> , <i>Gokshuradi Kadha</i> | 06/09/2024 to 09/12/2024 | supports by improving kidney function, and aiding in urinary tract infections (UTI) |
| Yakrit Shoth | <i>Punarnava (Boerhavia diffusa)</i> , <i>Kali mirch (Piper nigrum)</i> , <i>Pippali (Piper</i> | 06/09/2024 | beneficial in managing liver |

| | | | |
|----------------|--|---------------------------|--|
| Har Vati | <i>longum</i>), <i>Vidang</i> (<i>Embelia ribes</i>), <i>Devdaru</i> (<i>Cedrus deodara</i>), <i>Haldi</i> (<i>Curcuma longa</i>), <i>Chitrak</i> (<i>Plumbago zeylanica</i>), <i>Vibhitaka</i> (<i>Terminalia bellirica</i>), <i>Amalaki</i> (<i>Embllica officinalis</i>), <i>Danti</i> (<i>Baliospermum montanum</i>), <i>Chavya</i> (<i>Piper retrofractum</i>), <i>Indrayava</i> (<i>Holarrhena antidysenterica</i>), <i>Black cumin</i> (<i>Nigella sativa</i>), <i>Kaiphal</i> (<i>Myrica esculenta</i>), <i>Kutki</i> (<i>Picrorhiza kurroa</i>), <i>Nishoth</i> (<i>Operculina turpethum</i>), <i>Saunth</i> (<i>Zingiber officinale</i>), <i>KakadSinghi</i> (<i>Pistacia integerrima</i>), <i>Ajwain</i> (<i>Trachyspermum ammi</i>) | to 09/12/2024 | dysfunction, spleen disorders, inflammation, renal dysfunction, jaundice, liver failure, edema, and anemia |
| Hematone Syrup | <i>Laung</i> (<i>Syzygium aromaticum</i>), <i>Badi Elaichi</i> (<i>Amomum subulatum</i>), <i>Javitri</i> (<i>Myristica fragrans-Aril</i>), <i>Dal Chini</i> (<i>Cinnamomum verum/Cinnamomum cassia</i>), <i>Haldi</i> (<i>Curcuma longa</i>), <i>Nag Kesar</i> (<i>Mesua ferrea</i>), <i>Ajwain</i> (<i>Trachyspermum ammi</i>), <i>Chavya</i> (<i>Piper chaba</i>), <i>Kutaki</i> (<i>Picrorhiza kurroa</i>), <i>Pippali</i> (<i>Piper longum</i>), <i>Gaj Pipal</i> (<i>Scindapsus officinalis</i>), <i>Devadaru</i> (<i>Cedrus deodara</i>), <i>Kaunch</i> (<i>Mucuna pruriens</i>), <i>Baybidang</i> (<i>Embelia ribes</i>), <i>Chitrak</i> (<i>Plumbago zeylanica</i>), <i>Danti</i> (<i>Baliospermum montanum</i>), <i>Daru Haldi</i> (<i>Berberis aristata</i>), <i>Dhania</i> (<i>Coriandrum sativum</i>), <i>Gangayran</i> (<i>Clerodendrum serratum</i>), <i>Gokhru</i> (<i>Tribulus terrestris</i>), <i>Rasna</i> (<i>Pluchea lanceolata</i>), <i>Kanghi-Atibala</i> (<i>Abutilon indicum</i>), <i>Kherati-Bala</i> (<i>Sida cordifolia</i>), <i>Hauber-Hapuspa</i> (<i>Lepidium sativum</i>), <i>Lodhra</i> (<i>Symplocos racemosa</i>), <i>Marorphali-Murva</i> (<i>Clematis triloba/Marsdenia tenacissima</i>), <i>Mulethi</i> (<i>Glycyrrhiza glabra</i>), <i>Nagarmotha</i> (<i>Cyperus rotundus</i>), <i>Pohkar</i> (<i>Aconitum heterophyllum</i>), <i>Lal Punarnava</i> (<i>Boerhavia diffusa</i>), <i>Saunf</i> (<i>Foeniculum vulgare</i>), <i>Supari</i> (<i>Areca catechu</i>), <i>Tejpatta</i> (<i>Cinnamomum tamala</i>), <i>Utangan</i> (<i>Blepharis edulis</i>), <i>Vaividanga</i> (<i>Embelia ribes</i>), <i>Akarkara</i> (<i>Anacyclus pyrethrum</i>), <i>Triphala</i> (a combination of <i>Terminalia chebula</i> , <i>Terminalia bellirica</i> , and <i>Phyllanthus emblica</i>), <i>Trikatu</i> (a combination of <i>Piper longum</i> , <i>Piper nigrum</i> , and <i>Zingiber officinale</i>), <i>Munakka</i> (<i>Vitis vinifera</i> -Dried Grapes), <i>Dhay Phool</i> (<i>Woodfordia fruticosa</i>), <i>Gwar Patha</i> (<i>Aloe barbadensis/Aloe vera</i>), <i>Loh Bhasma</i> (Iron Ash-Ayurvedic Preparation), <i>Ashwagandha</i> (<i>Withania somnifera</i>), <i>Shehad</i> (Honey-Natural Product from <i>Apis</i> species), <i>Gur</i> (<i>Saccharum officinarum</i> -Jaggery), and <i>Water</i> (H_2O -Universal Solvent). | 09/12/2024 for 1 month | Helpful in improving haemoglobin levels, blood purifier |

The patient was on concurrent allopathic medications. These included N-acetylcysteine, calcium acetate, torasemide (10 mg), tamsulosin D (4 mg), sodium bicarbonate (1000 mg), amlodipine (5 mg), metoprolol (50 mg), alpha-ketoanalogue (200 mg), erythropoietin alfa (1000 IU), and linagliptin (5 mg). Out of these medicines amlodipine is given as SOS, N-acetylcysteine, alpha-ketoanalogue (200 mg), calcium acetate dose tapered to alternate day, sodium bicarbonate (1000 mg) and torasemide (10 mg), were continued throughout the treatment

Treatment Course

On September 6, 2024, a patient with a known case of chronic kidney disease (CKD) and hypertension presented with complaints of generalized weakness, constipation, and loss of appetite. On assessment, the patient's vitals were stable. The following *Ayurvedic* medicines were prescribed:

- **GFR Powder:** ½ tsp twice daily BD *Adhobhakte* with *Koshna Jal*
- **Nephron Capsule:** 1 capsule BD *Adhobhakte* with *Koshna Jal*
- **Mutravardhak Vati:** 1 tablet BD *Adhobhakte* with *Koshna Jal*
- **Kidney Care Syrup:** 15 mL BD *Adhobhakte* with *samamatra Koshna Jal*
- **Yakrit Shoth Har Vati:** 1 tablet BD *Adhobhakte* with *Koshna Jal*

The patient returned for a follow-up on October 7, 2024, with no new complaints. Laboratory investigations were reviewed, and the following treatment regimen was continued with one modification:

- **GFR Powder:** ½ tsp BD *Adhobhakte* with *Koshna Jal*
- **CKD Tablet:** 1 tablet three times daily (TDS) *Adhobhakte* with *Koshna Jal*
- **Nephron Capsule:** 1 capsule BD *Adhobhakte* with

Koshna Jal

- **Mutravardhak Vati:** 1 tablet BD *Adhobhakte* with *Koshna Jal*
- **Kidney Care Syrup:** 15 mL BD *Adhobhakte* with *samamatra Koshna Jal*
- **Yakrit Shoth Har Vati:** 1 tablet BD *Adhobhakte* with *Koshna Jal*

At the subsequent follow-up on November 7, 2024, the patient reported no new issues, and the same medication regimen was continued.

On December 9, 2024, during a follow-up visit, the treatment plan was adjusted with the addition of the following medicines:

- **Hematone Syrup:** *Adhobhakte* with *samamatra Koshna Jal*
- **Kidney Shuddhi Ark:** 10 mL BD *Adhobhakte* with *samamatra Koshna Jal*

This comprehensive *Ayurvedic* management plan was tailored to address the patient's condition and promote overall well-being.

Results

The case study presented in this article demonstrates the effective management of a 65-year-old male patient diagnosed with chronic kidney disease (CKD) and hypertension through an integrative *Ayurvedic* approach. Upon initial presentation, the patient exhibited significant symptoms, including generalized weakness, loss of appetite, and markedly elevated serum creatinine levels (13.47 mg/dL), alongside a critically low estimated glomerular filtration rate (GFR) of 4 mL/min/1.73 m².

Over the course of treatment, laboratory investigations indicated a progressive reduction in serum creatinine levels, decreasing to 9.4 mg/dL by the final follow-up on December 9, 2024. Additionally, hemoglobin levels improved from 5.8

g/dL to 8.1 g/dL, reflecting enhanced overall health and vitality.

The follow-up investigative findings are presented in Table 3.

Table 3: Follow-Up Investigations and Results

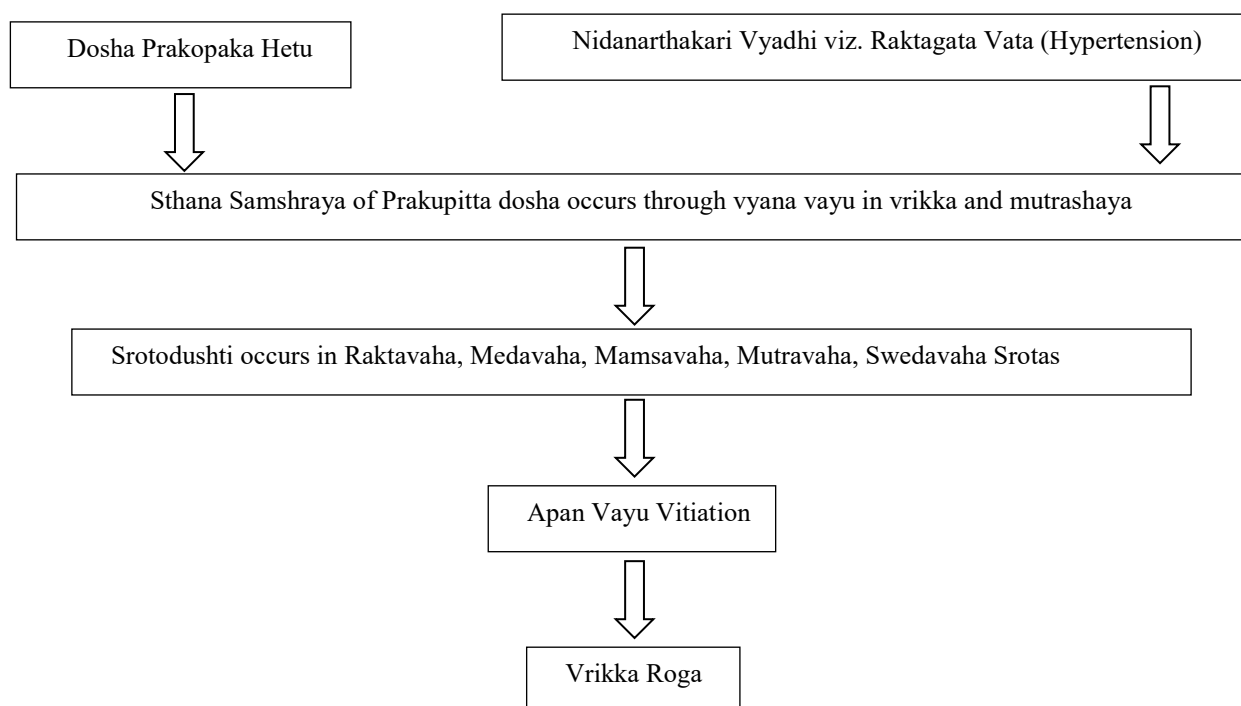
| Laboratory Test | 01/09/2024 | 04/10/2024 | 06/11/2024 | 7/12/2024 |
|-----------------|-------------|------------|------------|-----------|
| Hb | 5.8 | 8.1 | | 7.8 |
| Sr. Creatinine | 13.47 mg/dl | 13.3 mg/dl | 12.3 mg/dl | 9.4 mg/dl |

Discussion

Chronic kidney disease (CKD) represents a significant global health challenge, characterized by a progressive decline in renal function that can lead to end-stage renal disease and

necessitate costly interventions such as dialysis or transplantation. The conventional management of CKD often involves pharmacological treatments and lifestyle modifications; however, these approaches may not always yield satisfactory outcomes and can be associated with adverse effects. This case study highlights the potential of *Ayurvedic* medicine as a complementary approach to managing CKD, particularly in patients who may not respond adequately to conventional therapies.

The patient in this study presented with advanced CKD and associated symptoms, including generalized weakness and loss of appetite, which are common manifestations of renal impairment. The *samprapti*^[4] (pathogenesis) of the disease in this case can be articulated as follows.



The initial laboratory findings indicated severely compromised kidney function, with a serum creatinine level of 13.47 mg/dL and a GFR of 4 mL/min/1.73 m². These findings underscore the urgency of effective intervention to prevent further deterioration of renal function.

The *Ayurvedic* treatment regimen employed in this case was multifaceted, incorporating a range of *ayurvedic* formulations known for their nephroprotective and anti-inflammatory properties. The use of GFR Powder, Nephron Plus, and other *Ayurvedic* medicines aimed to address the underlying pathophysiology of CKD by promoting renal function, enhancing diuresis, and reducing inflammation. The significant reduction in serum creatinine levels from 13.47 mg/dL to 9.4 mg/dL over the treatment period suggests a positive response to the *Ayurvedic* interventions. Additionally, the improvement in hemoglobin levels indicates a potential amelioration of anemia, a common complication in CKD patients.

Actions of *Ayurvedic* Formulations in Chronic Kidney Disease (CKD)

i). Mutravardhak Vati

Action: Mutravardhak Vati is primarily indicated for its diuretic properties, promoting increased urine output and aiding in the elimination of waste products from the body^[5]. The combination of *Gokhru* and *Guggul* enhances renal

function by reducing inflammation and supporting the kidneys' ability to filter blood effectively^[6]. Additionally, the presence of *Amla* and *Harad* contributes to antioxidant effects, helping to mitigate oxidative stress associated with CKD^[7].

ii). Nephron Plus

Action: Nephron Plus is formulated to support kidney health and function. The inclusion of *Pashanbheda* is particularly beneficial for its lithotriptic properties, aiding in the dissolution of kidney stones and promoting urinary tract health^[8]. *Hazrool yahood Bhasma* and *Chandraprabha* enhance renal function and help alleviate symptoms of burning micturition and urinary tract infections (UTIs). The synergistic action of these ingredients helps in reducing inflammation and improving overall kidney function.

iii). CKD Tablet

Action: The CKD Tablet is designed to provide comprehensive support for kidney health. Its ingredients work synergistically to enhance renal function, reduce proteinuria, and manage electrolyte balance. The formulation aims to address the underlying pathophysiology of CKD by promoting detoxification and supporting the kidneys' filtration capabilities.

iv). Kidney Care Syrup

Action: Kidney Care Syrup is formulated to support renal health and function. *Punarnava* is known for its diuretic and anti-inflammatory properties, which help in reducing edema and promoting the elimination of toxins. The syrup aids in maintaining optimal kidney function and alleviating symptoms associated with CKD, such as fluid retention and discomfort.

v). Yakrit Shoth Har Vati

Action: Yakrit Shoth Har Vati is primarily indicated for managing liver and kidney dysfunction. Its ingredients possess potent anti-inflammatory and hepatoprotective properties, which are crucial in addressing the complications associated with CKD. The formulation aids in detoxification, supports liver function, and helps in managing associated symptoms such as jaundice and edema. The combination of herbs works to restore balance and improve overall metabolic function, which is essential in the context of CKD.

GFR Powder is an *Ayurvedic* formulation that offers multiple benefits for patients with chronic kidney disease (CKD). It supports renal function by enhancing filtration capacity and promoting diuresis, which helps eliminate metabolic waste and reduce fluid retention. The anti-inflammatory and antioxidant properties of its ingredients, such as *Bhoomi Amla* and *Gokshur*, help mitigate kidney inflammation and oxidative stress, protecting renal tissues from further damage. Additionally, GFR Powder aids in maintaining electrolyte balance and improving overall well-being, making it a valuable adjunct in the comprehensive management of CKD when used alongside other treatments.

In summary, these *Ayurvedic* formulations collectively contribute to the management of chronic kidney disease by enhancing renal function, promoting diuresis, reducing inflammation, and supporting overall metabolic health. Their synergistic actions, rooted in traditional Ayurveda medicine, provide a holistic approach to addressing the complexities of CKD.

Need for Further Research

Despite the promising outcomes observed in the management of chronic kidney disease (CKD) through *Ayurvedic* interventions, including the use of formulations such as GFR Powder, there remains a critical need for further research to substantiate these findings and enhance the scientific understanding of *Ayurvedic* practices. Rigorous clinical trials with larger sample sizes and well-defined methodologies are essential to evaluate the efficacy, safety, and mechanisms of action of these *ayurvedic* formulations in CKD patients. Additionally, comparative studies between *Ayurvedic* treatments and conventional therapies could provide valuable insights into their relative effectiveness and potential synergistic benefits.

Moreover, exploring the pharmacokinetics and pharmacodynamics of the individual components within these formulations will help elucidate their specific contributions to renal health. Investigating the long-term effects of *Ayurvedic* treatments on disease progression, quality of life, and overall patient outcomes is also crucial. Such research endeavors will not only validate the role of *Ayurveda* in modern nephrology but also facilitate the integration of traditional practices into contemporary medical frameworks, ultimately benefiting a broader patient population. By addressing these gaps in knowledge, future studies can contribute to a more comprehensive understanding of CKD management and

promote evidence-based approaches in the field of integrative medicine.

Conclusion

The integrative *Ayurvedic* management approach demonstrated significant symptomatic and investigational improvements in the case of the 65-year-old male patient diagnosed with chronic kidney disease (CKD) and hypertension. Throughout the treatment period, the patient reported notable alleviation of symptoms, including generalized weakness and loss of appetite, contributing to an enhanced quality of life.

Laboratory investigations revealed a progressive reduction in serum creatinine levels, from 13.47 mg/dL at baseline to 9.4 mg/dL by the end of the treatment period, indicating improved renal function. Additionally, hemoglobin levels showed a positive trend, reflecting better overall health status. These findings underscore the potential of *Ayurvedic* formulations, such as GFR Powder and other supportive therapies, in effectively managing CKD. The results advocate for further exploration of *Ayurvedic* practices as a viable complement to conventional treatments, emphasizing the importance of a holistic approach in addressing chronic health conditions.

References

1. <https://www.valueinhealthjournal.com/article/S1098-3015%2815%2903537-8/fulltext?utm> Retrieved on 18/01/2025. DOI: 10.1016/j.jval.2015.09.1461
2. Sandler DP, Smith JC, Weinberg CR, Buckalew Jr VM, Dennis VW, Blythe WB, *et al.* Analgesic use and chronic renal disease. *N Engl J Med* 1989; 320(19):1238-1243.
3. Caraka, Agnivesa, Cakrapanidatta, Sarma RK, Dash B. Agnivesa's Caraka samhita: text with English translation & critical exposition based on Cakrapani Datta's Ayurveda dipika. Chowkhamba Sanskrit Series Office; 1976.
4. Rashmita Tiga, Pragya P. Mallik, Bharatilata Acharya. A Critical Review on Vrikka Vikara vis-a-vis Chronic Kidney Disease (CKD). *AYUSHDHARA*, 2024; 11(4):143-148.
5. Sharma PV. Dravyaguna Vijnana. 3rd ed. Varanasi: Chaukhambha Bharati Academy; 2006; 2:123-125.
6. Pandey G. Bhavaprakasha Nighantu (Commentary). Varanasi: Chaukhambha Surbharati Prakashan, 2010, p. 502-505.
7. Shastri S. Charaka Samhita (English Translation). Vol. 1. Varanasi: Chaukhambha Sanskrit Sansthan, 2011, 215-217.
8. Pandey G. Bhavaprakasha Nighantu (Commentary). Varanasi: Chaukhambha Surbharati Prakashan, 2010, p. 508-510.