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Role of *Ayurvedic* Therapies in Chronic Kidney Disease Management: A Case Study on Integrating Traditional Healing

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ABSTRACT

Chronic Kidney Disease (CKD) is a progressive condition characterized by the gradual decline of kidney function, often resulting in end-stage kidney disease (ESKD), which necessitates kidney replacement therapy. While conventional treatments focus on managing these risk factors, *Ayurvedic* interventions have gained attention due to their holistic, individualized approach, which aims to restore balance within the body and improve kidney function. This case study evaluates the impact of *Ayurvedic* interventions combined with conventional treatments in a 56-year-old male patient with CKD, hypertension, and Type 2 Diabetes Mellitus (T2DM) who visited Jeena Sikho Lifecare Limited Hospital in Derabassi, Punjab. The patient presented with symptoms including general weakness, lower back ache, itching, and frothy urine. After a course of *Ayurvedic* treatment, significant improvements were noted in kidney function, including a reduction in serum urea and creatinine levels, as well as an increase in GFR. The patient's symptoms, including general weakness and itching, improved markedly, and his weight decreased. The results indicate that *Ayurvedic* therapies, such as *Ayurvedic* formulations and detoxification practices, could play a supportive role in managing CKD by improving renal function and alleviating symptoms. This study highlights the potential of combining traditional *Ayurvedic* treatments with conventional treatment in managing CKD. However, further research with larger sample sizes and controlled clinical trials is required to establish the effectiveness of *Ayurvedic* approaches in CKD management and integrate them into mainstream healthcare.

Introduction

Chronic kidney disease (CKD) is marked by a progressive decline in kidney function, diagnosed when the glomerular filtration rate (GFR) drops below 60 mL/min per 1.73 m^2 or when kidney damage persists for over three months. End-stage kidney disease (ESKD) arises when kidney function

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deteriorates to the point that life cannot be sustained without conservative care or kidney replacement therapy [1]. While CKD is often asymptomatic, some individuals experience symptoms due to uremic toxin accumulation, leading to hypertension, fluid retention, bone pain, peripheral neuropathy, and sleep disturbances, which impact quality of life [2,3].

Obesity contributes to CKD by increasing the risk of essential hypertension and Type 2 diabetes mellitus (T2DM), with resistant hypertension being a key factor in disease progression. Cardiovascular disease is the leading cause of death in CKD patients rather than dialysis complications [4]. Diabetes, both Type 1 and Type 2, is a major contributor to CKD, with diabetes mellitus being the leading cause of end-stage renal disease (ESRD) in developed nations. Additionally, anemia affects one in five individuals with diabetes and stage 3 CKD [5]. Chronic obesity further increases the risk of CKD [7]. Genetic factors such as ectopic kidneys, renal agenesis, and polycystic kidneys also contribute to CKD [8].

From an *Ayurvedic* perspective, CKD results from *Dosha* imbalances affecting the *Srotas*. The disease is classified based on the involved *Srotas* and symptoms, with anemia resembling *Vataj Pandu*, a *Rasavaha Srotas* disorder [9]. Modern medicine relies on declining GFR for CKD diagnosis, with diabetes and hypertension as the primary causes. Management focuses on slowing progression and preventing complications, with obesity exacerbating hypertension and diabetes, thus increasing CKD risk. Cardiovascular disease remains a critical concern, as CKD patients are more likely to die from cardiovascular events than dialysis complications [4,5]. Early detection and management of diabetes, hypertension, and obesity are crucial to reducing CKD's global burden. However, treatment access remains a challenge, leading to increased interest in *Ayurveda* [13].

Ayurvedic treatments aim to restore *Dosha* balance and *Srotas* function, addressing underlying causes such as diabetes and hypertension. *Panchakarma* detoxifies the body, while herbs like *Punarnava*, *Gokshura*, *Brahmi*, and *Ashwagandha* possess anti-inflammatory, diuretic, and detoxifying properties, supporting kidney function [10-16]. *Ayurvedic* dietary guidelines emphasize reducing protein, sodium, and phosphorus intake while promoting kidney-friendly foods [17]. These therapies not only improve kidney health but also enhance mental well-being and quality of life, offering a cost-effective alternative in regions with limited healthcare access [13,16]. This study aims to assess the impact of *Ayurvedic* interventions combined with conventional treatments for CKD with hypertension in a 56-year-old male patient.

CASE REPORT

On May 10, 2023, a 56-year-old male known case of CKD and hypertension for 4 years and T2DM for 11 years visited Jeena Sikho Lifecare Limited Hospital in Derabassi, Punjab. He was admitted twice, 7 days' day care for first time and 4 days' day care for second time. A comprehensive medical history, family history, physical examination, and diagnostic evaluations were all part of the methodical and thorough examination. He was taking allopathic medicines regularly. His father and sister had a history of CKD and he was diagnosed with COVID-19 during 2021. He experienced general weakness, lower backache, itching and frothy urine. The vital signs along with *Ashta vidha pariksha* report during the first day of visit is detailed in **Table 1**.

Table 1 Vitals during the initial examination on first day of the visit

Parameter	Findings
Temperature	98.2˚F
Blood Pressure	130/80 mm of Hg
Pulse Rate	85/min
Weight	88 Kg
Nadi	*Vataj Pittaj*
Mutra	*Phenila Mutra*
Shabda	*Spashta*
Mala	*Samanya*
Akriti	*Madhyam*
Drika	*Avikrita*
Sparsha	*Avikrita*
Jivha	*Saam*

Vitals observed during investigations conducted on the May 11, 2023 are detailed in **Table 2**. After 7 days of treatment, the patient experienced significant improvement, including relief from itching, backache and gastric issues.

Table 2 Investigation on May 11, 2023

Parameter	Findings
Date	**11-05-2023**
Haemoglobin	10.2 gm/dL
eGFR	11 ml/min/1.73m²
Protein	+
Pus cells	1-2
Epithelial cells	2-3
Lipid Profile	
Total Cholesterol	213.5 mg/dL
HDL	45.3 mg/dL
LDL	126.60 mg/dL
VLDL	41.60 mg/dL
Triglycerides	208 mg/dL

The vitals observed during the day care treatment on daily basis are detailed in **Table 3**. Laboratory investigations during the treatment period including follow ups are mentioned in **Table 4**. The patient was afterward discharged on May 17, 2023. Vital signs during the time of discharge is given in **Table 5**.

Table 3. Daily vitals observed during the day care treatments

Date	Weight in Kg	Temperature in F	Blood Pressure (mmHg)	Pulse/min	Respiration/min	Pain score
10-May-23	88 Kg	98.2°F	130/80	84	20	0/10
11-May-23	-	98.2°F	120/80	80	18	0/10
12-May-23	85.6 Kg	98.2°F	130/90	68	18	0/10
13-May-23	85 Kg	98.2°F	130/90	68	18	2/10
14-May-23	-	98.2°F	120/90	70	18	2/10
15-May-23	-	98.2°F	130/80	78	18	0/10
16-May-23	-	98.2°F	120/80	68	18	0/10

Table 4. Vitals signs observed during the treatment period including follow ups

Parameter	Findings					
Date	11-05-2023	16-05-2023	14-06-2023	08-08-2023	25-09-2023	04-11-2023
Haemoglobin	**10.2 gm/dL**	**9.8 gm/dL**	**10.1 gm/dL**	**11.5 gm/dL**	**10.9 gm/dL**	**11.7 gm/dL**
Urea	**142 mg/dL**	**120 mg/dL**	**65 mg/dL**	**72.89 mg/dL**	**79.6 mg/dL**	**59.00 mg/dL**
Creatinine	**6.4 mg/dL**	**4.00 mg/dL**	**4.40 mg/dL**	**4.00 mg/dL**	**3.95 mg/dL**	**3.82 mg/dL**
Uric acid	6.4 mg/dL	**7.6 mg/dL**	**9.90 mg/dL**	**7.60 mg/dL**	**8.04 mg/dL**	**7.67 mg/dL**
Sodium	142.4 mEq/L	140.1 mEq/L	143.8 mEq/L	144.5 mEq/L	142.2 mEq/L	-
Potassium	5.46 mEq/L	5.40 mEq/L	5.38 mEq/L	5.40 mEq/L	5.15 mEq/L	-
Chloride	106.9 mEq/L	105.1 mEq/L	105.8 mEq/L	105.3 mEq/L	106 mEq/L	-
Total RBC count	3.85 Mill/Cumm	3.74 Mill/Cumm	3.56 Mill/Cumm	3.68 Mill/Cumm	-	3.63 Mill/Cumm

Table 5. Vital signs during the time of first discharge on May 17, 2023

Parameter	Findings
Temperature	98.2°F
Blood Pressure	120/80 mm of Hg
Pulse Rate	76/min
Weight	87 Kg
Nadi	*Vataj Pittaj*
Mutra	*Avikrita*
Jivha	*Avikrita*
Shabda	*Samanya*
Sparsha	*Avikrita*
Drika	*Avikrita*

The patient was on day care treatment for 7 days, during that period he received consolidated *Ayurvedic* treatments. This treatment procedure encompassed *Panchakarma* therapies such as *Awagaha Swedan* (below navel), *Madhutailik Basti*, *Abhyangam*. The patient was advised to take Chander Vati Tablet throughout the treatment period and Varunadi Vati on May 14, 2023.

On February 20, 2024, the patient return for day care treatment with conditions like weakness and frothy urination. The laboratory vital investigations during the second day care period are mentioned in **Table 6.** The vital parameters during discharge is mentioned in **Table. 7**

Table 6. The laboratory vital investigations during the second day care period.

Parameter	Findings	
Date	20-02-2023	27-03-2023
Haemoglobin	**11.5 gm/dL**	**10.3 gm/dL**
Urea	**63.27 mg/dL**	**55.88 mg/dL**
Creatinine	**3.76 mg/dL**	**3.55 mg/dL**
Uric acid	**7.85 mg/dL**	6.8 mg/dL
Sodium	146 mEq/L	145 mEq/L
Potassium	5.43 mEq/L	4.96 mEq/L
Chloride	105.1 mEq/L	105.8 mEq/L
Total RBC count	3.56 Mill/Cumm	**3.47 Mill/Cumm**

Table. 7 The vital parameters during discharge

Parameters	Findings
Temperature	98.2°F
Blood Pressure	140/90 mm of Hg
Pulse Rate	58/min
Weight	73 Kg
Nadi	*Vataj pittaj*
Mutra	*Samanya*
Jivha	*Avikrita*
Shabda	*Spashta*
Sparsha	*Anushmasheeta*
Mala	*Avikrita*
Drika	*Samanya*
Akriti	*Madhyam*

Medicinal Interventions

The *Ayurvedic* treatment employed in this case included GFR Powder, Nefron Plus Capsules, Chander Vati Tablet, CKD Syrup, Hrid Care Capsule, Dhatu Poshak Capsule, URI Plus Tablet, Kidney Care Syrup, Sama vati, MutraVardhak Vati and Divya Shakti Powder along with *Panchakarma* therapies. An accurately designed DIP Diet was provided to the patient to complement the *Ayurvedic* treatments administered for CKD [17,18,19]:

Treatment Plan

I. Diet Plan:

Dietary Guidelines from Jeena Sikho Lifecare Limited Hospital:

- Avoid wheat, refined foods, dairy, coffee, tea, and packaged foods.
- Do not eat after 8 PM.
- When eating solid foods, take small bites and chew each bite 32 times.

Hydration:

- Sip water slowly, mindful of the amount consumed each time.
- Aim to drink 1 litre of alkaline water 3 to 4 times a day.
- Incorporate herbal tea, living water, and turmeric-infused water into your daily routine.
- Boil 2 litres of water and reduce it to 1 litre before drinking.

Millet Consumption:

- Include five types of millet in your diet: Foxtail, Barnyard, Little, Kodo, and Browntop millet.
- Cook the millets in mustard oil using stainless steel cookware.

Meal Timing and Structure:

- Early Morning (5:45 AM): Begin with herbal tea along with raw ginger and turmeric.
- Breakfast (8:30-9:30 AM): Have steamed seasonal fruits and a fermented millet shake.
- Morning Snacks (11:00-11:20 AM): 100 gm of sprouts and 150 ml of red juice and soaked almonds.
- Lunch (12:30 PM - 2:00 PM): Two plates—Plate 1: steamed salad; Plate 2: cooked millet-based dish.
- Evening Snacks: Green juice (100-150 ml) and 4-5 almonds.
- Dinner (6:15-7:30 PM): Plate 1: raw salad, chutney, green garden delight, and soup; Plate 2: millet khichdi/ fermented millets/ millet chapati.

Fasting:

- It is recommended to fast for one day.

Special Instructions:

- Offer thanks to the divine before eating or drinking.
- Practice Vajrasana after every meal.
- Take a slow 10-minute walk after each meal.

Diet Types:

- The diet includes low-salt solid, semi-solid, and smoothie options.
- Suggested foods include herbal tea, red juice, green juice, a variety of steamed fruits, fermented millet shakes, soaked almonds, and steamed salads.

II. Lifestyle Recommendations

1. Include meditation as a method for relieving stress.
2. Practice Yoga (Sukhasana and Sukshma Pranayama) between 6:00 AM and 7:00 AM.
3. Go for a brisk 30-minute barefoot walk.
4. Aim for 6-8 hours of restful sleep each night.
5. Follow a structured daily routine to maintain balance and organization in your life.

III. *Panchakarma* procedures administered to patients

1. Awagah Swedan (After monitoring the vitals) [20]

Procedure:

- The patient was submerged up to the navel in a tub of warm water.
- Sweating was encouraged by maintaining the water's temperature at 42˚C.
- The patient spent 20 to 60 minutes undergoing the operation.

Physiology and Mode of action:

- Immersion in warm water stimulates the production of nitric oxide, leading to vasodilation, which expands blood vessels. This enhances circulation, accelerating the removal of metabolic waste such as carbon dioxide and urea, while improving oxygen and nutrient delivery to tissues.
- The warmth activates sweat glands, encouraging sweating, which helps eliminate water-soluble toxins like heavy metals and other metabolic byproducts.
- The heat activates the parasympathetic nervous system, reducing cortisol levels and promoting relaxation. It also improves vagal tone and decreases the sympathetic stress response, supporting overall body balance and homeostasis.

2. Madhutailik Basti

Procedure:

- In order to clear the digestive tract and get rid of toxins, the therapy started with preemptive measures such a mild purgative (Virechana) and/or emetics (Vamana).
- For best absorption and therapeutic efficacy, a medicated enema with a mixture of honey (Madhu) and medicated oil (Taila) is given via the rectal channel in a regulated amount, temperature, and pressure.
- The patient is constantly watched for any negative reactions during the course of treatment.

Physiology and Mode of action:

- Madhutailika Basti uses honey and medicated oil to stimulate prostaglandin synthesis, relaxing smooth muscles and enhancing absorption.
- It increases lymphatic flow, helping to reduce inflammation and promoting detoxification.
- The medicated oil inhibits pro-inflammatory cytokines and enzymes, reducing inflammation and swelling.
- Honey contains antioxidants that neutralize free radicals, reducing oxidative stress.
- The combination of oil and honey may influence gut microbiota, improving neurotransmitter balance and stress response, enhancing mental clarity and mood.
- Nitric oxide production relaxes smooth muscles, improving blood circulation and enhancing the therapy's therapeutic effects.
- Madhutailika Basti helps balance the Vata, Pitta, and Kapha doshas, promoting overall dosha harmony, removing accumulated toxins, and strengthening the digestive fire [21].

3. *Abhyangam*

Procedure

- The *Ayurvedic* medicated oil was selected and warmed, and the environment was made comfortable and warm for the treatment.
- Warm oil was poured onto the body, starting from the head and moving down to the toes, ensuring even coverage across the entire body.
- A gentle, rhythmic massage was performed using circular strokes on the joints and long, smooth strokes on muscle groups, with pressure adjusted as needed.
- After the massage, a 15-20-minute resting period allowed the oil to absorb, followed by wiping off excess oil with a warm towel or a mild bath.

Physiology and Mode of action:

- Rich in fatty acids, *Ayurvedic* medicated oils improve skin hydration and elasticity by enhancing phospholipid biosynthesis and promoting fat breakdown.
- The massage stimulates blood flow, improving oxygen and nutrient delivery to tissues.
- It also promotes lymphatic flow, aiding in detoxification and toxin removal.
- *Abhyanga* reduces cortisol levels, promoting relaxation and mood enhancement.
- Active compounds in oils, like turmeric and ginger, modulate the NF-kB pathway, reducing inflammatory cytokines and alleviating pain, inflammation, and muscle soreness [22,23].

4. HDT [20]

Procedure

- Patient is made to lie at 10˚ angle down of the head.
- The patient lies on a tilted surface with their head and upper body lower than their legs.
- This position is continued for about 1 to 2 hours.

Physiology and Mode of action:

- HDT causes blood to shift toward the upper body, leading to an increase in central blood volume.
- The body's baroreceptors sense the change in blood volume, triggering hormonal and renal system changes, including activation of the Renin-Angiotensin-Aldosterone System pathway.
- Aldosterone and antidiuretic hormone are released, regulating fluid retention or excretion by the kidneys to maintain blood pressure and sodium-potassium balance.
- Increased pressure and shear stress on vascular endothelial cells stimulate the production of nitric oxide, which helps in vasodilation and blood pressure regulation.

5. *Matra Basti* with *Gokshura siddha sneha*

Procedure

- The patient was positioned comfortably on the left side with bent knees, and the bladder and bowels were emptied before the procedure.
- The *Gokshura* oil, made by infusing *Gokshura* in a base oil, was warmed to body temperature for comfortable administration.
- The warm *Gokshura* oil was gently administered into the rectum using a nozzle or catheter, and the patient retained it for 30-45 minutes.
- The oil was retained for the prescribed duration, allowing it to absorb, hydrate the tissues, balance the *doshas*, and improve digestion and urinary health.

Physiology and Mode of action:

- The oils used in *Matra Basti* are absorbed through the rectal mucosa, bypassing the digestive system. These oils carry the medicinal properties of *Gokshura* directly into the bloodstream, facilitating fast and efficient systemic delivery.
- *Gokshura's* saponins inhibit the NF-kB signaling pathway, reducing the production of pro-inflammatory cytokines (e.g., TNF-α, IL-6), leading to decreased inflammation and pain relief, particularly useful for *Vata*-related disorders like joint pain.
- The saponins in *Gokshura* modulate the RAAS, promoting increased excretion of water and waste products, helping detoxify the body and reduce fluid retention.
- Steroidal saponins in *Gokshura* stimulate the production of testosterone and other steroid hormones, supporting reproductive health and vitality, and enhancing physical and mental resilience.
- *Gokshura's* compounds activate the Nrf2 pathway, increasing the expression of antioxidant proteins like superoxide dismutase, protecting cells from oxidative stress and supporting brain health.
- The lipids in *Matra Basti* provide nourishment to deeper tissues, reducing dryness and instability, while the combined anti-inflammatory and antioxidant effects help balance *Vata dosha* [24].

6. *Vrikk basti* with *Dhanwantaram* oil

Procedure

- The patient was positioned in a prone posture, and a dough ring was placed over the kidney region (L1–L3).
- Warm *Dhanwantaram* Oil (39–41°C) was poured into the dough ring and retained for 20–30 minutes.
- The oil temperature was maintained throughout the procedure by reheating as needed.
- After completion, the oil was removed, the area was cleaned, and the patient was advised to rest for 15–30 minutes.

Physiology and Mode of action:

- *Dhanwantaram* oil, rich in lipophilic compounds like sesamol and fatty acids, is absorbed through the skin during *Vrikk basti*. These lipids facilitate the deep penetration of active compounds into the bloodstream, allowing them to interact with kidney cell membranes, enhancing nutrient transfer and promoting kidney tissue repair.
- Active ingredients such as turmeric and *Ashwagandha* in *Dhanwantaram* oil modulate inflammatory pathways by inhibiting pro-inflammatory cytokines (TNF-α, IL-6). This reduces oxidative stress and prevents cellular damage in kidney tissues, offering protection from nephritis, kidney stones, and inflammation-related kidney diseases.
- The antioxidant properties of *Dhanwantaram* oil, derived from herbs like turmeric and bala, protecting kidney cells.
- *Dhanwantaram* oil pacifies *Vata dosha*, stabilizing the

nervous system and promoting smooth fluid movement within the kidneys. It also stimulates cellular repair through *Rasayana* herbs, enhancing kidney tissue regeneration, improving renal function, and preventing further damage in chronic kidney conditions [25].

7. Vrikk basti with *Gokshuru* and *Dhanwantaram oil*

Procedure

- The patient was positioned in a prone posture, and a dough ring was placed over the kidney region (L1–L3).
- A warm blend of *Gokshuru* decoction and *Dhanwantaram* Oil (heated to 39–41°C) was poured into the dough ring and retained for 20–30 minutes.
- The oil temperature was maintained throughout the procedure by reheating as needed.
- After completion, the oil was removed, the area was cleaned, and the patient was advised to rest for 15–30 minutes.

Physiology and Mode of action:

- The warm oil and decoction penetrate the skin, dilating blood vessels and enhancing circulation in the kidney region.
- *Gokshuru* acts as a diuretic, promoting urine formation and toxin elimination, while heat improves renal filtration.
- *Dhanwantaram* Oil relaxes muscles, relieves lower back tension, and balances *Apana Vata*, aiding smooth urinary flow.
- Supports kidney nourishment, maintains electrolyte balance, reduces *Kapha*-related fluid retention, and enhances urinary and metabolic health. [26].

8. *Gokshuru* and *Punarnava Sneha Basti*

Procedure

- The patient was positioned on their left side with knees bent for the enema.
- The decoction of *Gokshura* and *Punarnava* was prepared by boiling in water and mixed with medicated oil to enhance absorption and promote kidney health.
- 90 ml of mixture of *Gokshura*, *Punarnava*, and medicated oil was administered to the patient through the rectum. The patient retained the enema for 15-30 minutes to allow for maximum absorption.
- After retention, the patient evacuated the enema, releasing toxins and excess fluid. They were advised to rest and stay hydrated for effective detoxification and kidney recovery.

Physiology and Mode of action:

- The lipophilic properties of the medicated oil used in the *Basti* enhance the absorption of active compounds from *Gokshura* and *Punarnava*, allowing direct delivery to the bloodstream and targeting kidney tissues for therapeutic action.
- The active compounds in *Gokshura* and *Punarnava* promote diuresis, increasing urine output and facilitating the elimination of *Ama* and metabolic waste products, aiding in kidney detoxification.
- *Punarnava* and *Gokshura* have anti-inflammatory and antioxidant effects, reducing oxidative stress and inflammation in kidney cells, protecting kidney tissues, and improving renal function.
- The diuretic action helps to regulate electrolyte balance, preventing imbalances and supporting proper kidney filtration, while the medicated oil maintains hydration and smooth fluid movement within the kidneys [27,28,29].

9. *Shiropichu* with *Brahmi* oil

Procedure

- *Brahmi* oil was indirectly heated to lukewarm temperature.
- The warmed Brahmi oil was gently applied to the forehead and scalp. A cloth pad soaked in the oil was placed on the forehead, covering the *Ajna Chakra* and crown, and left in place for 15-30 minutes.
- The patient was encouraged to remain still, focus on deep breathing, and enjoy the calming effects of the oil.

Physiology and Mode of action:

- The lipophilic nature of Brahmi oil allows its active compounds, like bacosides, to be absorbed through the scalp, directly influencing brain function and enhancing cognitive abilities.
- Bacosides improve neurotransmission by increasing the release of acetylcholine, boosting memory, focus, and

mental clarity.

- Brahmi oil's antioxidant properties help neutralize reactive oxygen species (ROS) in the brain, preventing neuronal damage and supporting brain health.
- Brahmi oil reduces cortisol levels, alleviating stress, while its anti-inflammatory properties help protect against neuro-inflammation, supporting cognitive function.
- The warm oil improves blood flow to the brain, enhancing the delivery of oxygen and nutrients, promoting overall brain rejuvenation and optimal function [30,31].

Medications administered during the discharge during first day care treatment on May 17, 2023 is mentioned in **Table 8**.

Table 8. Medications advised during the time of discharge

Medicine Name	Ingredients	Dosage	Therapeutic Effects
GFR Powder	**Varun** (*Crateva nurvala*), **Punarnava** (*Boerhavia diffusa*), **Gokshur** (*Tribulus terrestris*), **Kaasni** (*Cichorium intybus*), **Bhumi Amla** (*Phyllanthus niruri*), **Shirish** (*Albizia lebbeck*), **Shigru** (*Moringa oleifera*) and **Apamarg** (*Achyranthes aspera*)	Half a teaspoon BD (*Adhobhakta* with *koshan jala*)	Improves cell rejuvenation and urine outflow
Mutra Vardhak Vati	**Gokshura** (*Tribulus terrestris*), **Guggul** *(Commiphora wightii),* **Sonth** *(Zingiber officinale)* , **Kalimirch** *(Piper nigrum)*, **Pippal** *(Piper longum)*, **Bahera** *(Terminalia bellerica)* , **Haritaki** *(Terminalia chebula)*, **Amla** *(Phyllanthus emblica)*, **Motha** *(Cyperus rotundus).*	2 TAB BD *(Adhobhakta* with *koshan jala)*	Used for treating kidney stones, dysuria, painful micturition, high blood pressure, and inflammatory conditions, while also providing relief in osteoarthritis (O.A.), hyperuricemia, and exhibiting antithesis properties.
Nefron Plus Capsules	**Hazrool yahood bhasma powder Chandraprabha powder Pashanbheda MulakKshar powder, YavaKshar powder Amalaki Rasayan 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*)	2 CAP BD *(Adhobhakta* with *koshan jala)*	Provides relief from pain and discomfort associated with kidney issues.
Divya Shakti Powder	**Trikatu, Triphala, Nagarmotha** (*Cyperus rotundus*), **Vaya Vidang** (*Embelia ribes*), **Chhoti Elaichi** (*Elettaria cardamomum*), **Tej Patta** (*Cinnamomum tamala*), **Laung** (*Syzygium aromaticum*), **Nishoth** (*Operculina turpethum*), **Sendha Namak , Dhaniya** (*Coriandrum sativum*), **Pipla Mool** (*Piper longum* root), **Jeera** (*Cuminum cyminum*), **Nagkesar** (*Mesua ferrea*), **Amarvati** (*Achyranthes aspera*), **Anardana** (*Punica granatum*), **Badi Elaichi** (*Amomum subulatum*), **Hing** (*Ferula assafoetida*), **Kachnar** (*Bauhinia variegata*), **Ajmod** (*Trachyspermum ammi*), **Sazzikhar, Pushkarmool** (*Inula racemosa*), **Mishri** (*Saccharum officinarum*).	Half a teaspoon HS *(Nishikal* with *koshna jala*)	Deepan. Pachana and detoxification
Kidney Care Syrup	**Punarnavarishta, Chandanasava, Ushirasava and Gokshuradi Kadha**	20 ml BD *(Adhobhakta* with *koshna samamatra jala)*	Relieves dysuria

The Serum urea and serum creatinine increased after 2 months of the discharge. Then the patient came for follow-up on August 08, 2023. The medications advised on the follow-up is mentioned in **Table 9.**

Table 9. Medications advised during the follow-up on August 08, 2023

Medicine Name	Ingredients	Dosage	Therapeutic Effects
GFR Powder	**Varun** (*Crateva nurvala*), **Punarnava** (*Boerhavia diffusa*), **Gokshur** (*Tribulus terrestris*), **Kaasni** (*Cichorium intybus*), **Bhumi Amla** (*Phyllanthus niruri*), **Shirish** (*Albizia lebbeck*), **Shigru** (*Moringa oleifera*) and **Apamarg** (*Achyranthes aspera*)	Half a teaspoon BD (*Adhobhakta* with *koshna jala*)	Improves cell rejuvenation and urine outflow
Nefron Plus Capsules	**Hazrool yahood bhasma powder**, **Chandraprabha powder**, **Pashanbheda**, **MulakKshar powder**, **YavaKshar powder**, **Amalaki Rasayan 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*)	2 CAP BD (*Adhobhakta* with *koshna jala*)	Provides relief from pain and discomfort associated with kidney issues.
URI Plus Tablet	**Amalki (*Phyllanthus emblica*), Bibhitaki (*Terminalia bellirica*), Haritaki (*Terminalia chebula*), Gokshura (*Tribulus terrestris*), Shodhit Guggul, Guduchi(*Tinospora cordifolia*)**	2 tablets BD (*Adhobhakta* with *koshna jala*)	Manages Kidney dysfunction and infection,UTI and Kidney stone
Kidney Care Syrup	**Punarnavarishta, Chandanasava, Ushirasava and Gokshuradi Kadha**	20 ml BD (*Adhobhakta* with *koshna jala*)	Helps in cell rejuvenation, improves urine outflow.
Chander Vati Tablet	**Kapoor Kachri** (*Hedychium spicatum*), **Vacha** (*Acorus calamus*), **Motha** (*Cyperus rotundus*), **Kalmegh** (*Andrographis paniculata*), **Giloy** (*Tinospora cordifolia*), **Devdaru** (*Cedrus deodara*), **Desi Haldi** (*Curcuma longa*), **Atees** (*Aconitum heterophyllum*), **Daru Haldi** (*Berberis aristata*), **Pipla Mool** (*Piper longum* root), **Chitraka** (*Plumbago zeylanica*), **Dhaniya** (*Coriandrum sativum*), **Harad** (*Terminalia chebula*), **Bahera** (*Terminalia bellirica*), **Amla** (*Phyllanthus emblica*), **Chavya** (*Piper chaba*), **Vayavidang** (*Embelia ribes*), **Pippal** (*Piper longum*), **Kalimirch** (*Piper nigrum*), **Sonth** (*Zingiber officinale* dried ginger), **Gaj Pipal** (*Scindapsus officinalis*), **Swarn Makshik Bhasma** (Gold iron pyrite ash - Ayurvedic preparation), **Sajji Kshar** (Potassium carbonate - traditional alkali preparation), **Senda Namak** (Rock salt), **Kala Namak** (Black salt), **Choti Elaichi** (*Elettaria cardamomum* - small cardamom), **Dalchini** (*Cinnamomum verum*), **Tejpatra** (*Cinnamomum tamala*), **Danti** (*Baliospermum montanum*), **Nishothra** (*Operculina turpethum*), **Banslochan** (Bamboo silica), **Loh**	2 tablets BD (*Adhobhakta* with *koshna jala*)	Cell rejuvenation, improve urine output and improve kidney functioning
Sama vati	**Gokru** (*Tribulus terrestris*), **Kaunch** (*Mucuna pruriens*), **Shatawar** (*Asparagus racemosus*), **Ashwagandha** (*Withania somnifera*), **Vidarikand** (*Pueraria tuberosa*), **Beej Band Lal** (*Sida cordifolia*), **Akarkara** (*Anacyclus pyrethrum*), **Talmakhana** (*Hygrophila auriculata*), **Musli** (*Chlorophytum borivilianum*), **Aawla** (*Emblica officinalis*), **Sonth** (*Zingiber officinale*), **Jaiphal** (*Myristica fragrans*), **Swarn Makshik** (*Chalcopyrite*), **Shilajit Shudh** (*Asphaltum punjabianum*).	2 tablets BD (*Adhobhakta* with *koshna jala*)	*Deepan, pachan* and cell rejuvenation

The patient was on day care treatment for 4 days, during that period he received consolidated *Ayurvedic* treatments, the procedure encompassed *Panchakarma* therapies such as *Matra Basti* with *Gokshuradi, Abhyangam* and *Vrikk Basti* with *Dhanwantaram*. Therapies were then revised to *Awagaha swedan*, HDT (on BP monitoring), *Vrikk Basti* with *Gokshuru* and *Dhanwantaram* oil, *Gokshuru* and *Punarnava Sneha Basti* and *Shiropichu* with *Brahmi* oil. The medications advised during the day care treatment were *Brihatyadi kashayam* and *Varunadi Vati*. The medications advised during the discharge are detailed in **Table 10.**

Table 10. The medications advised during the discharge

Medicine Name	Ingredients	Dosage	Therapeutic Effects
GFR Powder	**Varun** (*Crateva nurvala*), **Punarnava** (*Boerhavia diffusa*), **Gokshur** (*Tribulus terrestris*), **Kaasni** (*Cichorium intybus*), **Bhumi Amla** (*Phyllanthus niruri*), **Shirish** (*Albizia lebbeck*), **Shigru** (*Moringa oleifera*) and **Apamarg** (*Achyranthes aspera*)	Half a teaspoon BD (Adhobhakta with koshna jala)	Improves cell rejuvenation and urine outflow
Nefron Plus Capsules	**Hazrool yahood bhasma powder**, **Chandraprabha powder**, **Pashanbheda**, **MulakKshar powder**, **YavaKshar powder**, **Amalaki Rasayan 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*)	2 CAP BD (Adhobhakta with koshna jala)	Provides relief from pain and discomfort associated with kidney issues.
Chander Vati Tablet	**Kapoor Kachri** (*Hedychium spicatum*), **Vacha** (*Acorus calamus*), **Motha** (*Cyperus rotundus*), **Kalmegh** (*Andrographis paniculata*), **Giloy** (*Tinospora cordifolia*), **Devdaru** (*Cedrus deodara*), **Desi Haldi** (*Curcuma longa*), **Atees** (*Aconitum heterophyllum*), **Daru Haldi** (*Berberis aristata*), **Pipla Mool** (*Piper longum* root), **Chitraka** (*Plumbago zeylanica*), **Dhaniya** (*Coriandrum sativum*), **Harad** (*Terminalia chebula*), **Bahera** (*Terminalia bellirica*), **Amla** (*Phyllanthus emblica*), **Chavya** (*Piper chaba*), **Vayavidang** (*Embelia ribes*), **Pippal** (*Piper longum*), **Kalimirch** (*Piper nigrum*), **Sonth** (*Zingiber officinale* dried ginger), **Gaj Pipal** (*Scindapsus officinalis*), **Swarn Makshik Bhasma** (Gold iron pyrite ash - Ayurvedic preparation), **Sajji Kshar** (Potassium carbonate - traditional alkali preparation), **Senda Namak** (Rock salt), **Kala Namak** (Black salt), **Choti Elaichi** (*Elettaria cardamomum* - small cardamom), **Dalchini** (*Cinnamomum verum*), **Tejpatra** (*Cinnamomum tamala*), **Danti** (*Baliospermum montanum*), **Nishothra** (*Operculina turpethum*), **Banslochan** (Bamboo silica), **Loh Bhasam** (Iron ash - Ayurvedic preparation), **Shilajit** (*Asphaltum punjabinum*), **Guggal** (*Commiphora wightii*).	2 tablets BD (Adhobhakta with koshna jala)	Cell rejuvenation, improve urine output and improve kidney functioning
CKD Syrup	**Kasani** (*Cichorium intybus*), **Gokhru** (*Tribulus terrestris*), **Shatavari** (*Asparagus racemosus*), **Giloy** (*Tinospora cordifolia*), **Sorbitol,** and **Shudh Shilajit** (*Asphaltum punjabianum*)	20 ml BD (Adhobhakta with koshna jala)	Provides relief from pain and discomfort associated with kidney issues.
Hrid Care	**Lahshun BI. Ext.** (*Allium sativum*), **Arjun Bk. Ext.** (*Terminalia arjuna*), **Brahmi Lf. Ext.** (*Bacopa monnieri*), **Giloy St. Ext.** (*Tinospora cordifolia*), **Makoy Fr. Ext.** (*Solanum nigrum*), **Sarpgandha Sd. Ext.** (*Rauvolfia serpentina*), **Shankh Bhasam** (*Turbinella pyrum*).	2 CAP BD (Adhobhakta with koshna jala)	Used for the treatment of various conditions, including coronary artery disease (CAD), hypertension (HTN), acidity, insomnia, high blood pressure, and aortic disease.
Dhatu Poshak Capsule	**Chuna Shudh, Shankh Bhasam, Mukta Shukti, Prawal Pishti, Kapardika and Loh**	2 CAP BD (Adhobhakta with koshna jala)	Used for strengthening immunity, managing conditions like T.B., asthma, and hyperacidity, and supporting recovery from anorexia.

RESULT

Effectiveness of *Ayurvedic* **Treatments:** The patient underwent day care treatment for two times (7 days and 4 days), after the treatment he experienced noteworthy development in symptoms, which denotes the interventions used in the study are effective against CKD, hypertension and T2DM. Graphical representation of the assessment of the patient's vital signs are represented in **Fig 1.** At the time of discharge, the patient was well oriented and there was relief from weakness and frothy urination which shows that the *Ayurvedic* interventions used in the case study are effective for CKD. DTPA scan report during the treatment period is mentioned in **Table 11.** The conditions during admission and during discharge is mentioned in **Table 12.**

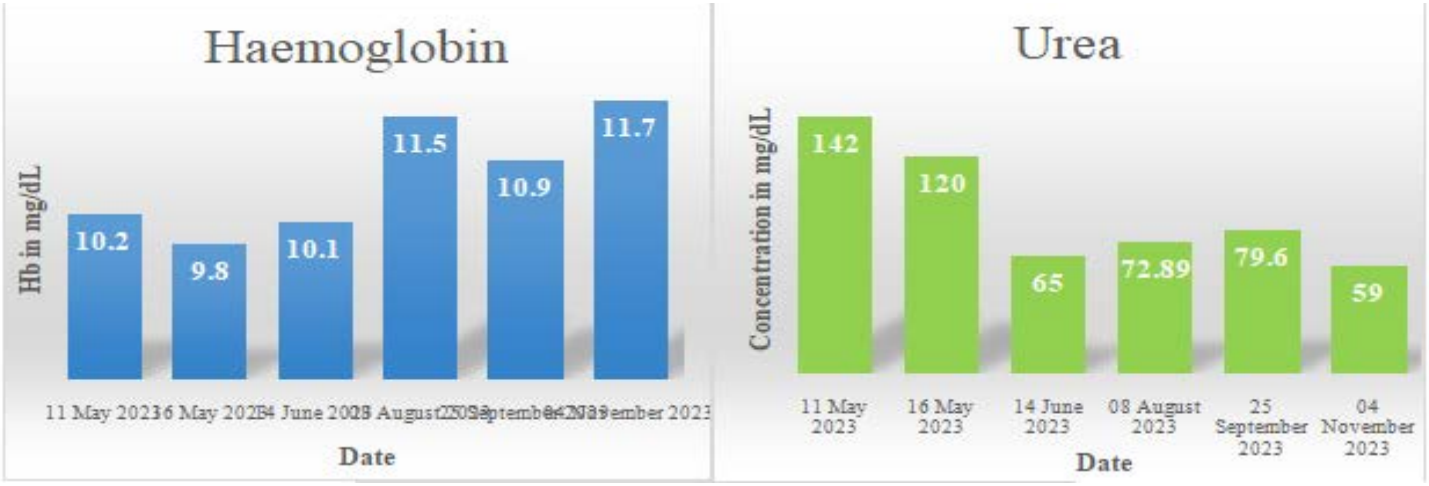
Table 11. DTPA scan report during the treatment period

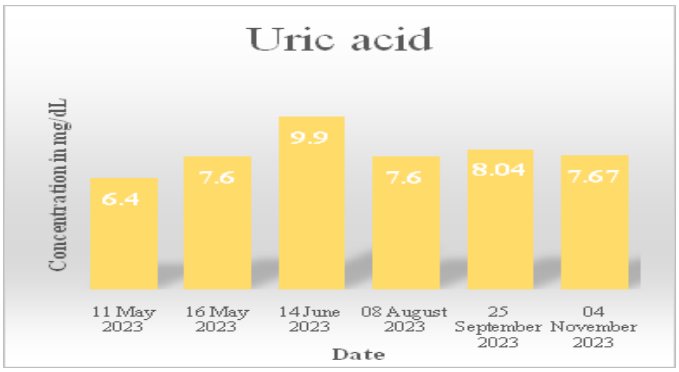
Date	10-05-2023		14-11-2023		27-03-2024	
Kidney	Left Kidney	Right Kidney	Left Kidney	Right Kidney	Left Kidney	Right Kidney
Visualization	Poor	Poor	Sub Normal	Sub Normal	Sub Normal	Sub Normal
Size	Shrunk	Shrunk	Shrunk	Shrunk	Normal	Normal
Concentration	Poor	Poor	Sub Normal	Sub Normal	Sub Normal	Sub Normal
GFR	3.2 ml/min	4.8 ml/min	9.9 ml/min	12.1 ml/min	10.0 ml/min	12.0 ml/min
Global GFR	8 ml/min		22 ml/min		22 ml/min	

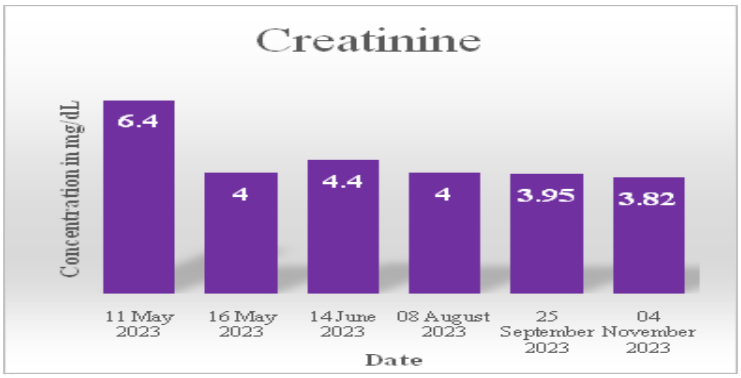
Table 12 The conditions during admission and during discharge

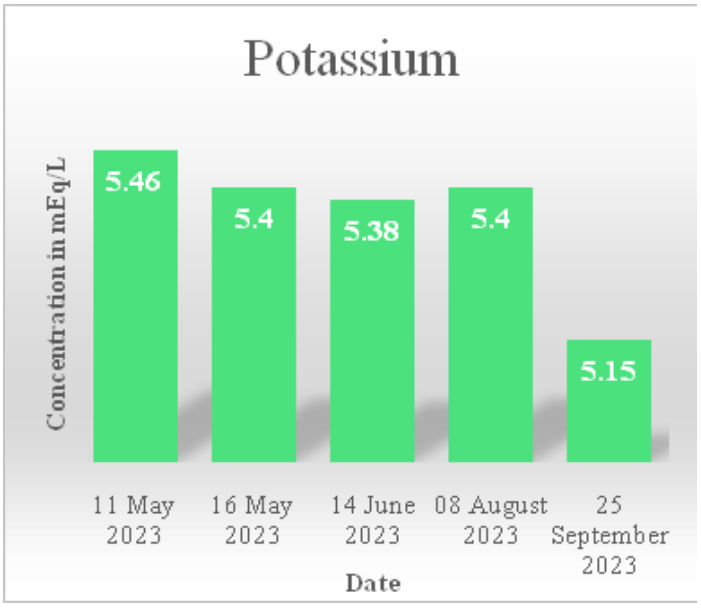
Conditions during admission	Conditions during discharge
First Daycare	
General weakness/ fatigue	Relief
Lower backache	Relief
Itching	Relief
Frothy urination	Mild (Better)
Second Daycare	
General weakness	Mild
Frothy urinatiom	Better

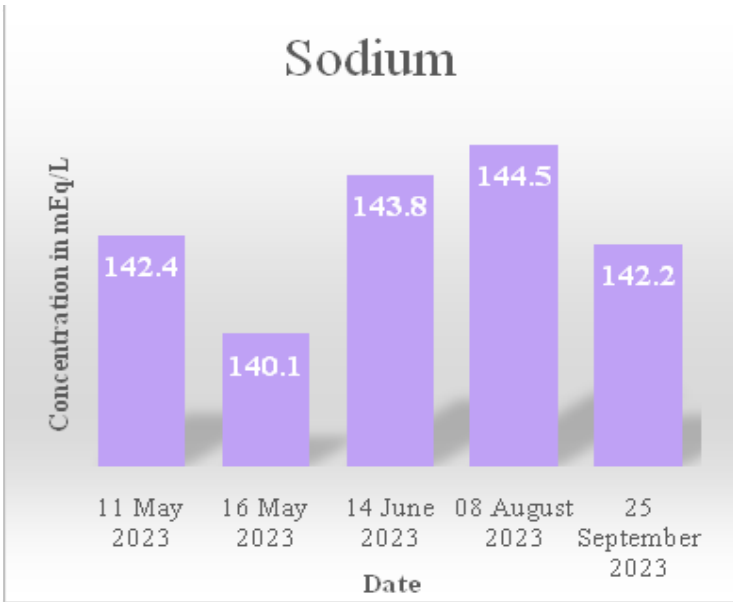
Fig 1 Graphical representation of the assessment of the patient's vital signs.

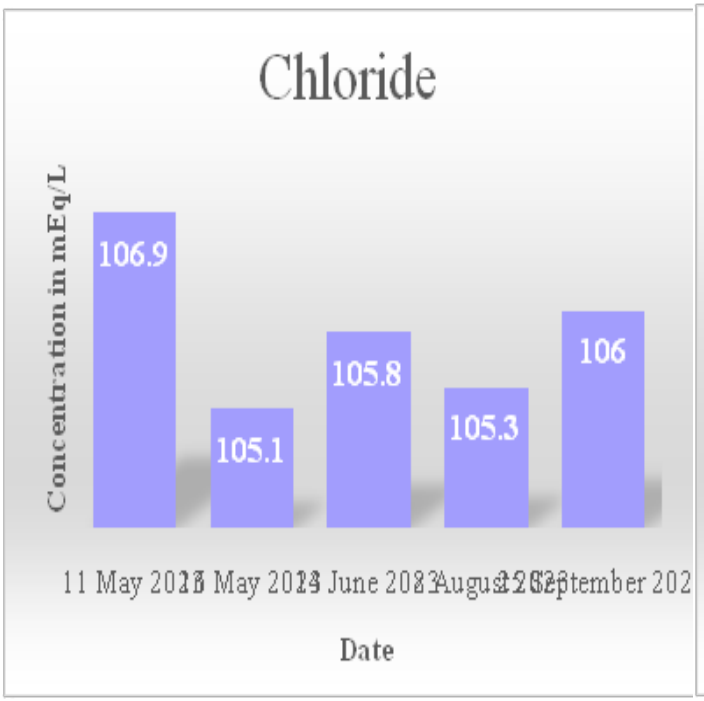


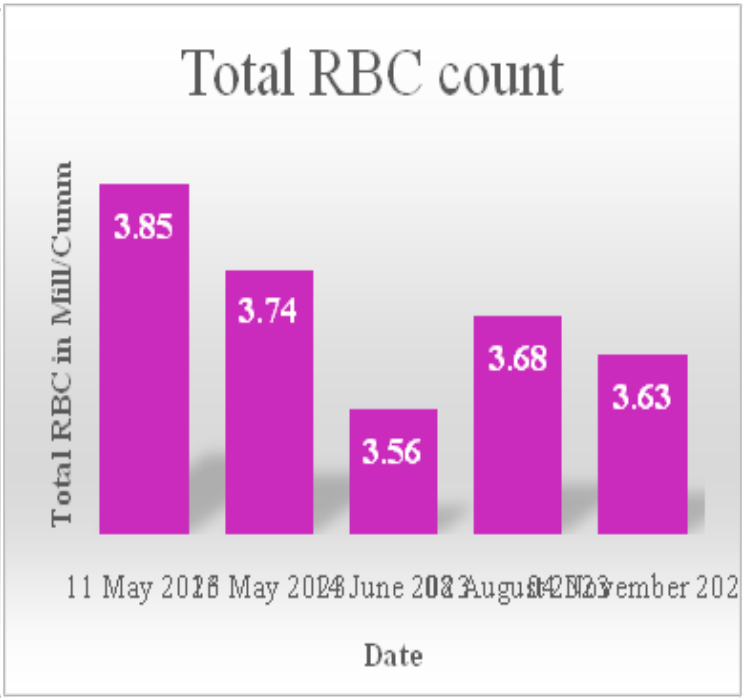












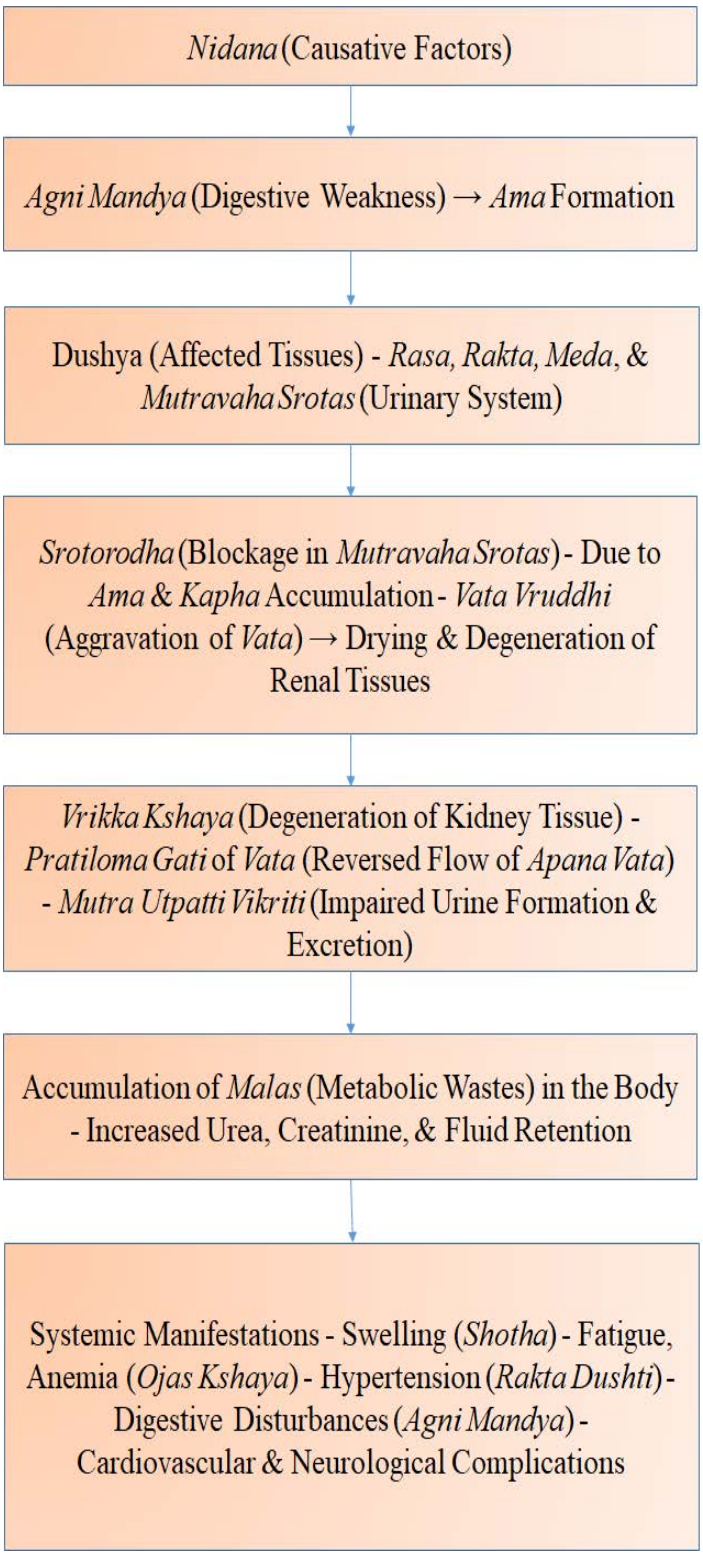
Implications for Future Research

A CKD patient with hypertension and T2DM was the subject of the current investigation, which produced encouraging findings. However, a more thorough assessment is necessary because of the small sample size of just one case. Future studies should use randomized controlled trials and bigger sample sizes to verify the safety, effectiveness, and dependability of the integrated *Ayurvedic* treatments. These kinds of investigations will be essential for creating standardized therapeutic standards and methods.

DISCUSSION

Ayurvedic treatment integration for CKD offers a viable substitute for conventional medical methods. This case study describes the application of several *Ayurvedic* treatments to a 56-year-old man who has been diagnosed with T2DM for 11 years and CKD and hypertension for 4 years. The patient's symptoms included lower back pain, itching, frothy urine, and general sickness. The *samprapti* [32,33,34,35] for this case study is depicted in **Fig 2**. During his two 7-day and 4-day day care sessions, he underwent *Panchakarma* treatments as part of the *Ayurvedic* therapy regimen.

Fig 2. The *samprapti* for this case study



1. ***Awagaha Swedan*:** The water promotes blood vessel growth, which enhances cleansing and circulation. It facilitates the absorption of bioactive substances through the opening of skin pores, which aids in inflammation reduction and healing. By lowering stress hormones and encouraging relaxation, the warmth calms the body. The lymphatic system is stimulated by sweat, which improves immunological and detoxification.

2. Madhutailik Basti: *Madhutailik Basti* is an enema therapy that uses honey and medicated oil to relax pelvic floor muscles, increase blood circulation, and lower inflammation. It helps balance the three *doshas (Vata, Pitta*, and *Kapha)* and aids in toxins cleansing, promoting digestive health, and enhancing *Prana*. The treatment is effective in relieving constipation, lower back pain, and pelvic inflammatory disease. The combination of honey and oil stimulates prostaglandin synthesis, increases lymphatic flow, and reduces inflammation.

***3. Abhyangam*:** The treatment involves a gentle massage, focusing on the body's joints and muscle groups. The oil stimulates the parasympathetic nervous system, reducing stress and anxiety. It also enhances blood circulation, nutrient delivery, and lymphatic drainage, supporting detoxification and immune function. *Abhyanga* also reduces muscle stiffness and fatigue, and helps balance the three *doshas (Vata, Pitta*, and *Kapha)* by reducing stress and promoting relaxation. The treatment also reduces cortisol levels, promoting relaxation and mood enhancement.

4. HDT: The HDT therapy involves a patient lying at a 10˚ angle of the head and tilting their body for 1 to 2 hours. This position enhances blood flow towards the kidneys, improving kidney function and reducing harmful hormone levels. It also regulates blood pressure by controlling the baroreceptor reflex. The therapy leads to detoxification and improved blood circulation and kidney function. The process triggers hormonal and renal system changes, including the release of aldosterone and ADH, and the production of nitric oxide.

***5. Matra Basti* with *Gokshura*:** This is a treatment that involves administering warm *Gokshura* oil into the rectum, allowing it to absorb, hydrate, and balance the *doshas*. The oil provides systemic nourishment, localized healing, and hydration to the intestines and pelvic region. It helps balance *Vata* and *Kapha doshas*, promotes overall health, and aids in detoxification. The treatment also has anti-inflammatory and analgesic effects, relaxes muscles, reduces stress, and promotes healing. The oils used in Matra Basti are absorbed through the rectal mucosa, bypassing the digestive system.

***6. Vrikk basti* with *Dhanwantaram* oil:** *Vrikka Basti* is an *Ayurvedic* therapy aimed at detoxifying and rejuvenating the kidneys. The procedure involves positioning the patient in a prone posture and placing a dough ring over the kidney region (L1–L3). Warm *Dhanwantaram* Oil (39–41°C) is poured into the ring and retained for 20–30 minutes, with the temperature maintained throughout. After completion, the oil is removed, the area cleaned, and the patient advised to rest. This therapy improves circulation, balances doshas,

and reduces inflammation. *Dhanwantaram* Oil, known for its nourishing and anti-inflammatory properties, helps alleviate pain, support renal function, and aid in managing kidney stones and nephritis. Its lipophilic compounds facilitate deep penetration, promoting nutrient transfer, cellular repair, and oxidative stress reduction. Additionally, the oil pacifies *Vata dosha*, stabilizing the nervous system and enhancing kidney tissue regeneration, ultimately preventing further damage in chronic kidney conditions.

***7. Vrikk basti* with *Gokshuru* and *Dhanwantaram* oil**: *Vrikka Basti* is a therapeutic *Ayurvedic* procedure for kidney health. The patient is positioned in a prone posture, and a dough ring is placed over the kidney region (L1–L3). A warm blend of *Gokshuru* decoction and *Dhanwantaram* Oil (39–41°C) is poured into the ring and retained for 20–30 minutes, maintaining temperature throughout. After completion, the oil is removed, the area is cleaned, and the patient rests. This therapy enhances circulation, detoxification, and renal function. *Gokshuru* acts as a diuretic, improving urinary flow, while *Dhanwantaram* Oil pacifies *Vata*, relaxes muscles, and nourishes kidney tissues, preventing further degeneration.

8. Gokshuru* and *Punarnava Sneha Basti: The *Gokshuru* and *Punarnava Sneha Basti* is a treatment for kidney health that involves the administration of medicated oil, *Gokshura* and *Punarnava*, mixed with medicated oil. The therapy involves administering the mixture through the rectum, allowing for maximum absorption. *Punarnava* and *Gokshura* have anti-inflammatory and antioxidant properties, reducing inflammation and protecting kidney tissues from oxidative stress.

***9. Shiropichu* with *Brahmi* oil:** The *Shiropichu* treatment involves cleansing the patient's scalp and forehead, warming Brahmi oil infused with *Bacopa monnieri*, and applying it to the forehead and scalp. A cloth or gauze pad is placed on the forehead, covering the *Ajna Chakra* and crown. The physiology of oil improves brain function by supporting neurotransmission and enhancing cognitive clarity. Its adaptogenic properties reduce cortisol levels, calming the central nervous system. Applying warm Brahmi oil to the scalp enhances blood circulation, delivering oxygen and nutrients to the brain, improving mental sharpness and reducing symptoms like brain fog. It also balances *Vata* and *Pitta doshas*, calming the mind and promoting restful sleep.

GFR Powder, Nefron Plus Capsules, Chander Vati Tablet, CKD Syrup, Hrid Care Capsule, Dhatu Poshak Capsule, URI Plus Tablet, Kidney Care Syrup, Sama vati, MutraVardhak Vati, and Divya Shakti Powder were used in this case's *Ayurvedic* treatment regimen, which also included *Panchakarma* treatments. These treatments were intended to reduce symptoms and enhance kidney function. The vital sign investigations also showed that the patient had seen significant improvement from important symptoms like weakness and foamy urine.

1. GFR Powder: This *Ayurvedic* medicines blend is formulated to support kidney health and detoxification. It helps cleanse the body, boost kidney function, and improve overall well-being. The powder also enhances energy levels, supports proper hydration, and assists in toxin removal. Additionally, it boosts vitality, enhancing the overall quality of life and wellness. Key ingredients include *Kasni*, *Gokhru*, and *Punarnava*, which are known for their hydrating properties.

2. Nefron Plus Capsules: This is *Ayurvedic* formulation designed to support kidney health. They help with detoxification, reduce inflammation in the kidneys, and support urinary health. The capsules likely contain ingredients like *Gokshura* and *Punarnava*, which are known for their diuretic and kidney-supportive properties. Additionally, the antioxidants in these capsules protect kidney cells from oxidative damage, promoting long-term renal health. This formulation may also aid in maintaining proper fluid balance and improving overall kidney function.

3. Chander Vati Tablet: These *Ayurvedic* medicines are formulated to boost overall well-being and kidney health. The *Ayurvedic* tablets support a balanced, active lifestyle by enhancing digestion, immunity, detoxification, and energy levels. The *Ayurvedic*, including *Kalmegh*, *Giloy*, and *Devdaru*, improves overall wellness, strengthens immunity, and promotes detoxification. Additionally, the tablets aid in digestion, bolster the immune system, and help in eliminating toxins and impurities.

4. CKD Syrup: An *Ayurvedic* formulation aimed at supporting kidney health in individuals with CKD. The syrup helps improve kidney function, promote detoxification, and maintain fluid balance. It is designed to complement a healthy diet and medical treatment, but should be used under the guidance of a healthcare provider.

5. Hrid Care Capsule: An *Ayurvedic* formulation designed to support heart health. It contains a blend of *Ayurvedic* formulations known for their cardiovascular benefits. The capsule helps improve circulation, regulate blood pressure, and support overall heart function.

6. Dhatu Poshak Capsule: This supports proper functioning and regeneration of all seven *Dhatus*, improving vitality, tissue strength, and overall health.

7. URI Plus Tablet: URI Plus Tablet is an *Ayurvedic* formulation containing A herbs like *Gokshura*, *Punarnava*, and Brahmi, known for their diuretic, anti-inflammatory, and antimicrobial properties. It aids in urinary health, kidney and bladder function, and fluid balance.

8. Kidney Care Syrup: Kidney Care Syrup is an *Ayurvedic* formulation promoting kidney health and function. It contains detoxifying herbs like *Punarnava*, *Gokshura*, and *Brahmi*, aiding in kidney function, toxins elimination, fluid balance, waste elimination, kidney inflammation reduction, and urinary health.

9. Sama vati: Sama Vati is an *Ayurvedic* formulation to support digestive health and improve metabolic function. Key ingredients like *Triphala*, *Ajwain*, and Cumin improve digestion, reduce acidity, and prevent constipation. Regular use may support overall gastrointestinal health and promote a healthy metabolism.

10. MutraVardhak Vati: MutraVardhak Vati is an *Ayurvedic* formulation that promotes urinary health and healthy urine flow. It contains *Ayurvedic* herbs like *Gokshura* and *Punarnava*, which improve kidney function and waste elimination. The tablet balances fluid retention, reduces swelling, and flushes out toxins.

11. Divya Shakti Powder: An *Ayurvedic* formulation designed to promote general health and nerve health. Natural components like *ardana*, *mishri*, and *dalchini* are used in it to improve nerve function, reduce stress, and shield the nerves from harm. These essential components work together to effectively support nerve health, reduce stress, and shield the body from free radical damage.

This case study demonstrates the possible advantages of combining *Ayurvedic* medicines with *Panchakarma* therapy to manage chronic kidney disease. For many people with CKD, *Ayurvedic* treatments, offer a more accessible and cost-effective option. These therapies target underlying bodily imbalances that contribute to renal dysfunction with an emphasis on holistic rehabilitation. Additionally, this aids in the management of concomitant diseases like diabetes and hypertension, which accelerate the course of CKD. *Ayurvedic* treatments can improve CKD patients' quality of life by enhancing renal function and general health. However, more thorough and organized research is required to confirm the effectiveness, security, and dependability of *Ayurvedic* treatments in the treatment of CKD.

CONCLUSION

This case study evaluating the treatment of CKD with hypertension and T2DM through *Ayurvedic* interventions yields the following findings:

Symptoms: Upon admission, the patient presented with general weakness, lower bac ache, itching, and frothy urine. After day care *Ayurvedic* treatment and follow-up care, significant improvements were observed. The patient reported relief from general weakness and itching, with no new symptoms emerging, suggesting a marked improvement in kidney function and overall health.

Vitals: The patient's vital signs fluctuated during the treatment period. Blood pressure stabilized at varying levels throughout day care treatment. The patient's weight decreased from 88 kg to 73 kg, and there was a notable reduction in itching and lower limb ache, reflecting positive changes in both lifestyle and diet.

Investigations: Laboratory tests conducted during the treatment showed significant improvements in renal function. **Serum urea levels** oscillated throughout the treatment but later decreased from **142 mg/dL to 55.88 mg/dL**, indicating enhanced kidney function. Similarly, s**erum creatinine levels reduced from 5.60 mg/dL to 3.55 mg/dL**. **The DTPA results shows that the GFR increased from 8.0 ml/min/2.09 sqm BSA to 22 ml/min/1.93 sq m BSA**. These results underscore the potential efficacy of *Ayurvedic* therapies in managing CKD.

In summary, the combination of previously prescribed allopathic treatments for CKD with holistic *Ayurvedic* therapies showed encouraging results, including improvements in laboratory test results, vital signs, and symptoms. *Ayurvedic* treatments combined with prescription drugs seem to promote improved renal function, reduce symptoms associated with chronic kidney disease, and enhance the patient's general health. *Ayurvedic* treatments may be essential for improving renal health since they concentrate on reestablishing equilibrium and treating underlying imbalances in the body. However, more study involving extensive, carefully monitored clinical trials is necessary to confirm these findings and create uniform treatment methods. Such research will support the effectiveness of *Ayurvedic* treatments for CKD and offer a solid scientific basis for their incorporation into conventional medical practice.

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NOT FOR MEDICO LEGAL PURPOSES

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Ex. - Faculty N.I.M.S. Hyderabad.

Dc-3

NAME [redacted] AGE : 56 Y SEX : M DATE: 10/05/2023
REG.NO. : REN-588-23
ATTENDING HOSPITAL: HIIMS, DERABASSI
CLINICAL STATUS: CKD, to know functional status, drainage pattern and AND differential function WITH GFR CALCULATION

DYNAMIC RENAL SCINTIGRAPHY

ISOTOPE: 99mTc- DTPA DOSE: 5 mCi

	LEFT KIDNEY	RIGHT KIDNEY
PERFUSION PHASE		
VISUALISATION	poor	poor
RELATIVE PERFUSION	poor	poor
UPTAKE PHASE		
SIZE	shrunk	shrunk
SHAPE	normal	normal
POSITION	normal	normal
CONCENTRATION	poor	poor
CORTICALMARGIN DELINEATION	poorly-defined	poorly defined
SPLIT FUNCTION	40.0%	60.0%
EXCRETORY PHASE		
COLLECTING SYSTEM	normal	normal
DRAINAGE PATTERN	normal	normal
DIURETIC RESPONSE	normal	normal
URETER	normal	normal
GFR	3.2ml/min	4.8ml/min

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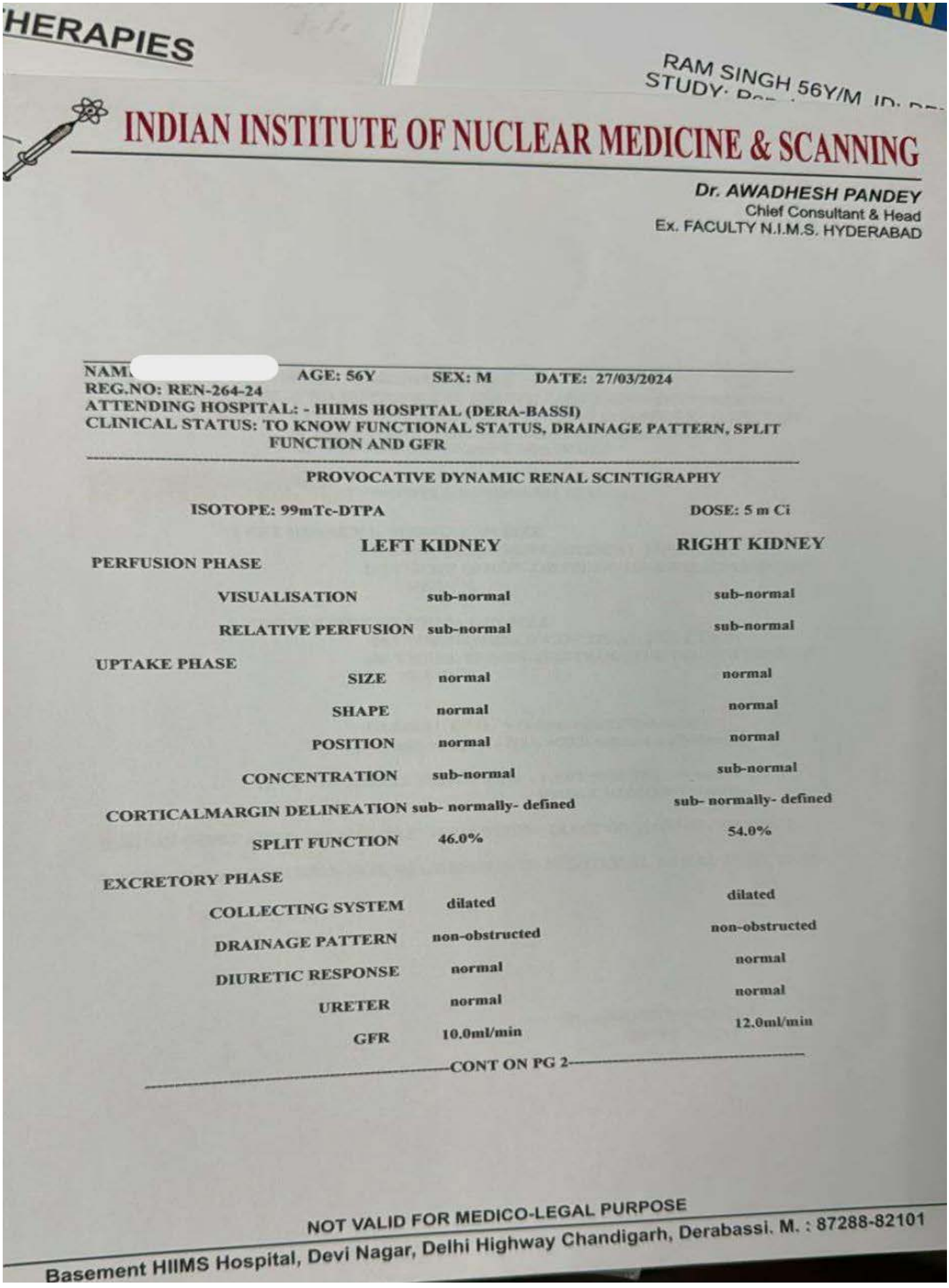
BASEMENT HIIMS HOSPITAL, DEVI NAGAR, DELHI HIGHWAY CHANDIGARH, DERA BASSI.
MOBILE : 99888 62091



HERAPIES

RAM SINGH 56Y/M ID:

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Dr. AWADHESH PANDEY
Chief Consultant & Head
Ex. FACULTY N.I.M.S. HYDERABAD

NAM[redacted] AGE: 56Y SEX: M DATE: 27/03/2024
REG.NO: REN-264-24
ATTENDING HOSPITAL: - HIIMS HOSPITAL (DERA-BASSI)
CLINICAL STATUS: TO KNOW FUNCTIONAL STATUS, DRAINAGE PATTERN, SPLIT FUNCTION AND GFR

PROVOCATIVE DYNAMIC RENAL SCINTIGRAPHY

ISOTOPE: 99mTc-DTPA DOSE: 5 m Ci

		LEFT KIDNEY	RIGHT KIDNEY
PERFUSION PHASE			
	VISUALISATION	sub-normal	sub-normal
	RELATIVE PERFUSION	sub-normal	sub-normal
UPTAKE PHASE			
	SIZE	normal	normal
	SHAPE	normal	normal
	POSITION	normal	normal
	CONCENTRATION	sub-normal	sub-normal
	CORTICALMARGIN DELINEATION	sub- normally- defined	sub- normally- defined
	SPLIT FUNCTION	46.0%	54.0%
EXCRETORY PHASE			
	COLLECTING SYSTEM	dilated	dilated
	DRAINAGE PATTERN	non-obstructed	non-obstructed
	DIURETIC RESPONSE	normal	normal
	URETER	normal	normal
	GFR	10.0ml/min	12.0ml/min

CONT ON PG 2

NOT VALID FOR MEDICO-LEGAL PURPOSE

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Chief Consultant & Head
Ex. - Faculty N.I.M.S. Hyderabad.

IMPRESSION: PROVOCATIVE IMAGING WITH DIURETIC ADMINISTERED 15 MINUTES BEFORE THE STUDY, TO PRECIPITATE EQUIVOCAL OBSTRUCTION, IF ANY, REVEALS: -

LEFT KIDNEY i) SHRUNK IN SIZE
ii) SEVERELY COMPROMISED CORTICAL FUNCTION
iii) NORMAL DRAINAGE SEEN
a) improving on frusemide provocation
b) improving as a function of time

RIGHT KIDNEY i) SHRUNK IN SIZE
ii) SEVERELY COMPROMISED CORTICAL FUNCTION
iii) NORMAL DRAINAGE SEEN
a) improving on frusemide provocation
b) improving as a function of time

- GLOBAL GFR =8.0 ml/min/ 2.09 sq m BSA
(normal range for BSA and age = 75.0 ml/min + - 17ml/min)

-SPLIT FUNCTION: LEFT KIDNEY = 40.0%
RIGHT KIDNEY = 60.0%

REPEAT DTPA SCAN AFTER 3 MONTHS 10/08/2023 TO SEE PROGRESSION OR REGRESSION

Awadhesh Pandey

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BLADDER: -NORMAL RESIDUAL VOLUME

-THERE IS NO DIFFRENCE IN TRACER CONCENTRATION BETWEEN
-PRE AND POST VOID FILMS SIGNIFYING NO INDIRECT EVIDENCE OF
i) VESICO-URETERIC REFLUX ON EITHER SIDE OR
ii) GRAVITY DEPENDENT DRAINAGE

IMPRESSION:- Tc 99m DTPA RENOGRAM REVEALS: -

LEFT KIDNEY i) NORMAL IN SIZE
ii) COMPROMISED CORTICAL FUNCTION
iii) THERE IS NON-OBSTRUCTIVE DILATATION OF THE PCS.

RIGHT KIDNEY i) NORMAL IN SIZE
ii) COMPROMISED CORTICAL FUNCTION
iii) THERE IS NON-OBSTRUCTIVE DILATATION OF THE PCS.

- GLOBAL GFR =22.0ml/min/1.93sq m BSA
(Normal range for BSA =75.0 ml/min ± 17ml/min)

-SPLIT FUNCTION: LEFT KIDNEY = 46.0%
RIGHT KIDNEY = 54.0%

N.B: AS COMPARED TO THE PREVIOUS STUDY DONE ON (14/11/23) THERE IS NEITHER PROGRESSION NOR REGRESSION IN BILATERAL RENAL FUNCTION

Dr. ABHISHEK GUPTA
(DNB)