E-ISSN: 3049-2920, P-ISSN: 3107-8397

Received: 05/October/2025 **AYUR:** November-December, 2025; 1(6):09-18 **Accepted:** 23/November/2025

Ayurvedic Insights in Managing Chronic Kidney Disease: A Holistic Healing Approach

[1]Acharya Manish, [*2]Dr. Gitika Chaudhary, [3]Dr. Richa, [4]Dr. Suyash Pratap Singh, [5]Dr. Manjeet Singh and [6]Dr. Priyank Sharma

[1]Director, Meditation Guru, Jeena Sikho Lifecare Limited, India.

[*2]Senior Consultant, General Surgeon, BAMS, PGDIP, PGDGS, MS (Ay.), Jeena Sikho Lifecare Limited, India.

[3]Senior Research Officer and Consultant, BAMS, PGDIP, CICR, CAIM, CMW, Jeena Sikho Lifecare Limited, India.

[4]Medical Superintendent, BAMS, PGDIP, DNYT, CCMC, Jeena Sikho Lifecare Limited Hospital, Derabassi, Punjab, India.

[5]Consultant, BAMS, PGDIP, ACLS, CCDN, CICR, CAIM, Jeena Sikho Lifecare Limited Hospital, Derabassi, Punjab, India.

[6]Consultant, BAMS, EMS, Jeena Sikho Lifecare Limited, Hospital, Derabassi, Punjab, India.

Abstract

Chronic kidney disease (CKD), type 2 diabetes mellitus (T2DM), hypertension, and coronary artery disease (CAD) are interrelated chronic conditions that pose major global health challenges. CKD, particularly in its advanced stages, leads to toxin buildup, fluid-electrolyte imbalance, and multi-organ complications. When CKD coexists with T2DM, hypertension, and CAD, the complexity of clinical management increases significantly, highlighting the need for integrative approaches. This case study evaluates the impact of *Ayurvedic* treatment in a 48-year-old female diagnosed with stage V CKD, along with T2DM, hypertension, and CAD, admitted at Jeena Sikho Lifecare Limited Hospital, Derabassi, Punjab, India. Presenting symptoms included pedal oedema, generalized weakness, and lower back pain. The patient received inpatient *Ayurvedic* care comprising *Panchakarma* therapies, *Ayurvedic* formulations, and a customized diet plan. Over a seven-day treatment period, notable symptomatic relief was observed. Pedal edema reduced from grade 3 to grade 1, generalized weakness improved, and lower back pain decreased from a score of 4/10 to 1/10. Biochemical investigations also showed measurable improvements: blood urea levels declined from 65.38 mg/dL to 62.57 mg/dL, serum creatinine from 8.60 mg/dL to 7.41 mg/dL, and uric acid from 6.24 mg/dL to 6.18 mg/dL. These findings suggest that *Ayurvedic* interventions may support renal function, improve clinical symptoms, and enhance patient well-being in complex cases of CKD with comorbidities. However, rigorous clinical trials are necessary to validate these observations and develop standardized protocols for integrative CKD management.

Keywords: *Ayurveda,* Chronic Kidney Disease (CKD), *Hridroga*, Hypertension, *Madhumeha, Panchakarma*, Type II Diabetes Mellitus (T2DM), *Vataj pandu*.

Introduction

Chronic kidney disease (CKD), type 2 diabetes mellitus (T2DM), hypertension, and coronary artery disease (CAD) are interlinked conditions with a significant global health impact [1]. CKD is a progressive loss of kidney function, leading to toxin accumulation, electrolyte imbalances, and systemic complications. Stage 5 CKD, or end-stage renal disease (ESRD), occurs when kidney function drops below 15%, requiring dialysis or transplantation [2].

T2DM, driven by insulin resistance and hyperglycemia, is a primary cause of CKD, leading to diabetic nephropathy. Hypertension accelerates kidney damage, further increasing cardiovascular risk [4]. CAD, caused by arterial plaque buildup, heightens the risk of myocardial infarction and heart failure. The coexistence of these conditions worsens patient outcomes, demanding a multidisciplinary management strategy [4]. Patients with both T2DM and CKD face a 77.2% higher risk of cardiovascular events compared to those with a single condition [5]. Hypertension affects 89% of CKD patients with CAD, exacerbating cardiovascular risks [6]. CKD progression is accelerated in diabetics and hypertensives, leading to anemia, high urea, and creatinine levels [7]. Targeted interventions, including antihypertensives and glucose-lowering therapies, have demonstrated efficacy in

***Corresponding Author:** Dr. Gitika Chaudhary

slowing disease progression [8]. Management of CAD in CKD remains debated. Some studies advocate aggressive revascularization, while others suggest conservative management yields similar mortality outcomes but different heart failure rates [6]. The complexity of managing multiple comorbidities highlights the need for patient-specific treatment plans.

Modern Treatment Strategies are as follows:

- **Pharmacological Interventions:** ACE inhibitors, ARBs, SGLT2 inhibitors, and statins are essential in CKD and cardiovascular risk reduction.
- **Dialysis & Transplantation:** ESRD requires renal replacement therapy, with transplantation being the definitive treatment.

Ayurveda offers a holistic approach to managing CKD, diabetes, hypertension, and CAD by addressing *doshic* imbalances and promoting systemic detoxification. The *Samprapti Ghatak* is mentioned in Table 1.

Table 1: The *Samprapti Ghatak*

Ghataka (Factor)	Details
Dosha (Bio-energies)	Pradhana: *Kapha-Vata* (primarily *Kapha* and *Vata*) Anubandha: *Pitta* (associated in later stages)
Dushya (Affected tissues)	*Rasa* (plasma), *Rakta* (blood),*Meda* (adipose), *Mamsa* (muscle), *Majja* (bone marrow), *Shukra* (reproductive tissue), *Mutra* (urine)
Srotas (Affected channels)	*Mutravaha Srotas* (urinary channels), *Rasavaha* (plasma carrying), *Raktavaha* (blood-carrying), *Medovaha* (fat-carrying channels)
Srotodushti (Channel vitiation)	*Sanga* (obstruction),*Vimargagamana* (misdirection),*Atipravritti* (excessive flow)
Agni (Digestive/metabolic fire)	*Mandagni* (low digestive/metabolic activity)
Ama (Toxins/undigested waste)	Present in early & chronic stages, evolves into *Ama visha* (toxic by-products)
Udbhava Sthana (Origin site)	*Amashaya* (stomach/GI tract) or *Rasavaha Srotas* (plasma-carrying channels)
Sanchara Sthana (Circulation site)	*Sarva Sharira* (whole body) via *Rasa-Rakta* (plasma-blood)
Adhisthana (Seat of manifestation)	*Mutravaha Srotas* (urinary system, mainly kidneys and bladder)
Vyakti Sthana (Site of expression)	*Vrikka* (kidneys),*Basti* (urinary bladder), and *Dhatus* (tissues)
Rogamarga (Pathway of disease)	*Abhyantara* (internal pathway)

- ***Panchakarma* Therapy:** Detoxification treatments, including *Basti* and *Virechana*, have shown potential in improving renal function and reducing dialysis dependency [9, 10, 11].
- ***Ayurvedic* Interventions:** Diuretic and anti-inflammatory formulations supports renal health [12]. *Ayurvedic* herbs like *Punarnava* and *Gokshura* aid in nephroprotection.
- **Diabetes & Hypertension Management:** *Ayurvedic* dietary principles, including a low-carb, high-protein diet, show benefits in metabolic stability control [13].
- **Cardiovascular Support:** *Panchakarma* (*Virechana*, *Basti*) removes toxins, while medications like *Arjuna*, *Guggulu*, and *Punarnava* improve heart function, reduce cholesterol, and prevent arterial blockages. A *Sattvic* diet, *Ayurvedic* medicines, and stress management through *Yoga*, *Pranayama*, and *Abhyanga* enhance circulation and reduce heart disease risk [14].

Integrating *Ayurveda* with allopathic medicines may enhance outcomes for CKD, diabetes, hypertension, and CAD patients. While *Ayurvedic* treatments show promise, further clinical validation is essential to establish their efficacy as complementary therapeutic options. Bridging *Ayurvedic* and allopathic medicine through evidence-based research can improve patient care.

Objective

This study aims to assess the impact of *Ayurvedic* interventions combined with conventional treatments for CKD with hypertension, T2DM and CAD in a 48-year-old female patient.

Materials and Methods

1. Case Report

On June 14, 2024, a 48-year-old female, a known case of Chronic Kidney Disease stage V for the past six months, Hypertension for three years, Type 2 diabetes mellitus for twenty years, and Coronary Artery Disease with a history of percutaneous transluminal coronary angioplasty in 2021, visited Jeena Sikho Lifecare Limited Hospital in Derabassi, Punjab, India. A detailed evaluation was conducted, including comprehensive medical and family history, physical examination, and diagnostic investigations. She presented with intermittent pedal oedema, lower backache, and generalised weakness. Her vital signs on the first day of admission, at discharge, and during follow-up are presented in Table 2. The findings of the *Ashta-vidha Pareeksha* conducted on the first day and at discharge are detailed in Table 3.

Table 2: Vitals during the first day of the visit, discharge and follow up

Parameter	Findings		
Date	**14-06-2024**	**20-06-2024**	**17-07-2024**
Blood Pressure	140/100 mm of Hg	140/90 mm of Hg	140/80 mm of Hg
Pulse Rate	87/min	88/min	84/min
Weight	61 Kg	60 Kg	59 Kg

Table 3: *Ashta-vidh pareeksha* during first day of the visit and discharge

Parameter	Findings	
Date	**14/06/2024**	**20/06/2024**
Naadi (Pulse)	*Vataj Pittaj*	*Vataj Pittaj*
Mala (Stool)	*Vibandhah* (Constipated)	*Avikrit* (Normal)
Mutra (Urine)	*Safena* (Frothy)	*Avikrit* (Normal)
Jiwha (Tongue)	*Saam* (Coated)	*Niram* (Normal)
Sparsh (Touch)	*Anushna Sheet* (Normal)	*Anushna Sheet* (Normal)
Shabda (Voice)	*Spashta* (Clear)	*Spashta* (Clear)
Drik (Eye)	*Avikrit* (Normal)	*Avikrit* (Normal)
Akriti (Physique)	*Madhyam*	*Madhyam*

The patient was in IPD for 7 days, during that period she received consolidated *Ayurvedic* treatments. This treatment procedure encompassed *Panchakarma* therapies such as *Awagaha swedan*, *Shiropichu* with *Brahmi* oil, *Udar Basti* with *Punarnava* oil, *Matra Basti* with *Gokshura* and *Punarnava* oil, *Udar pichu* with *Dhanwantaram* oil followed by *Nadi swedan*, *Lepam* with *Dashmool* and *Punarnava, Sarwang Abhyang* with *Mahanarayan Tail* and *Matra basti* with *Gokshur, punarnava* and *eranda Siddha Sneha*. The laboratory investigations during the treatment period is mentioned in Table 4.

Table 4: The laboratory investigations during the treatment period (Fig 1)

Parameter	Findings	
Date	**14/06/2024**	**19/06/2024**
Blood urea	65.38 mg/dl	62.57 mg/dl
Serum creatinine	8.60 mg/dl	7.41 mg/dl
Uric acid	6.24 mg/dl	6.18 mg/dl
Sodium	144.3 mEq/l	137.5 mEq/l
Potassium	4.76 mEq/l	4.79 mEq/l

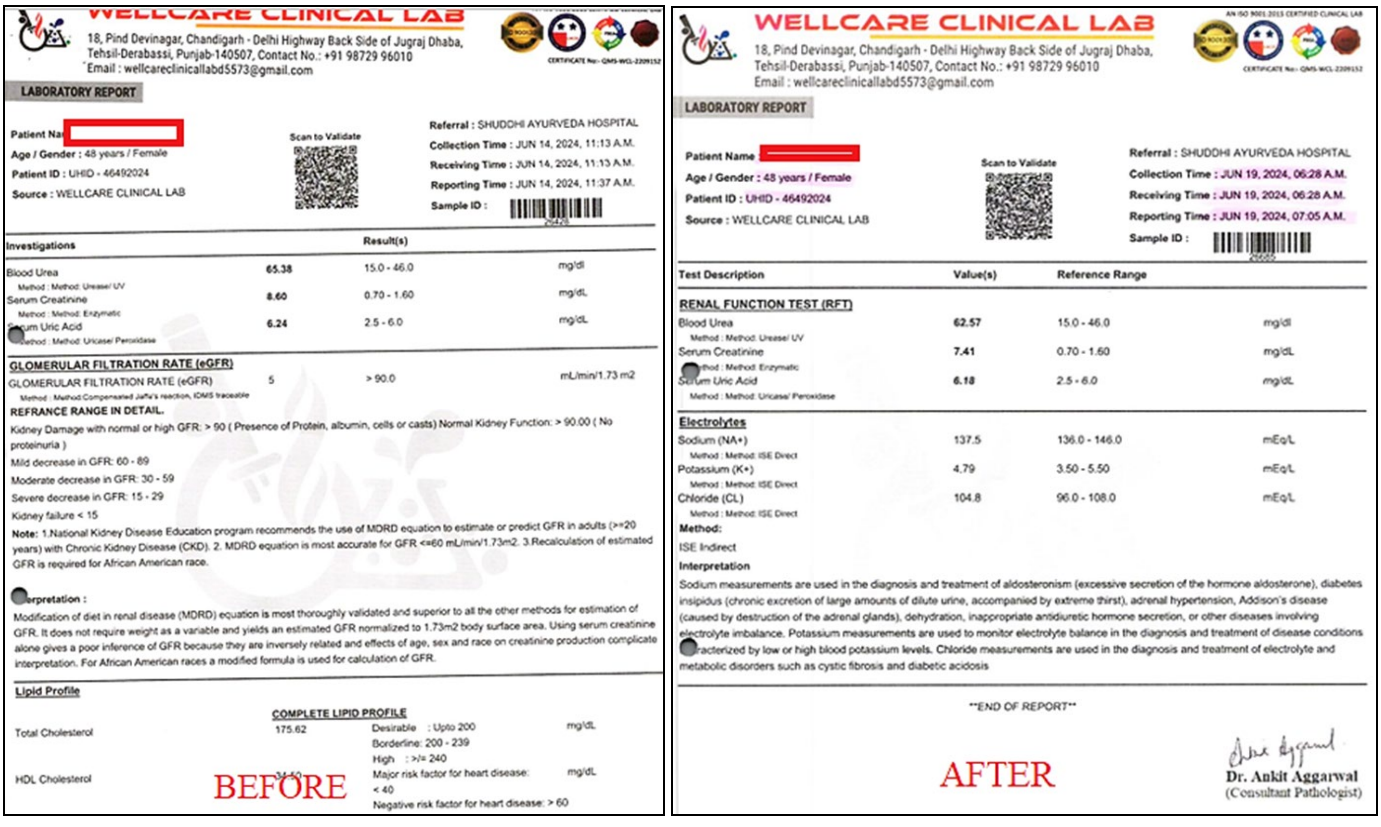


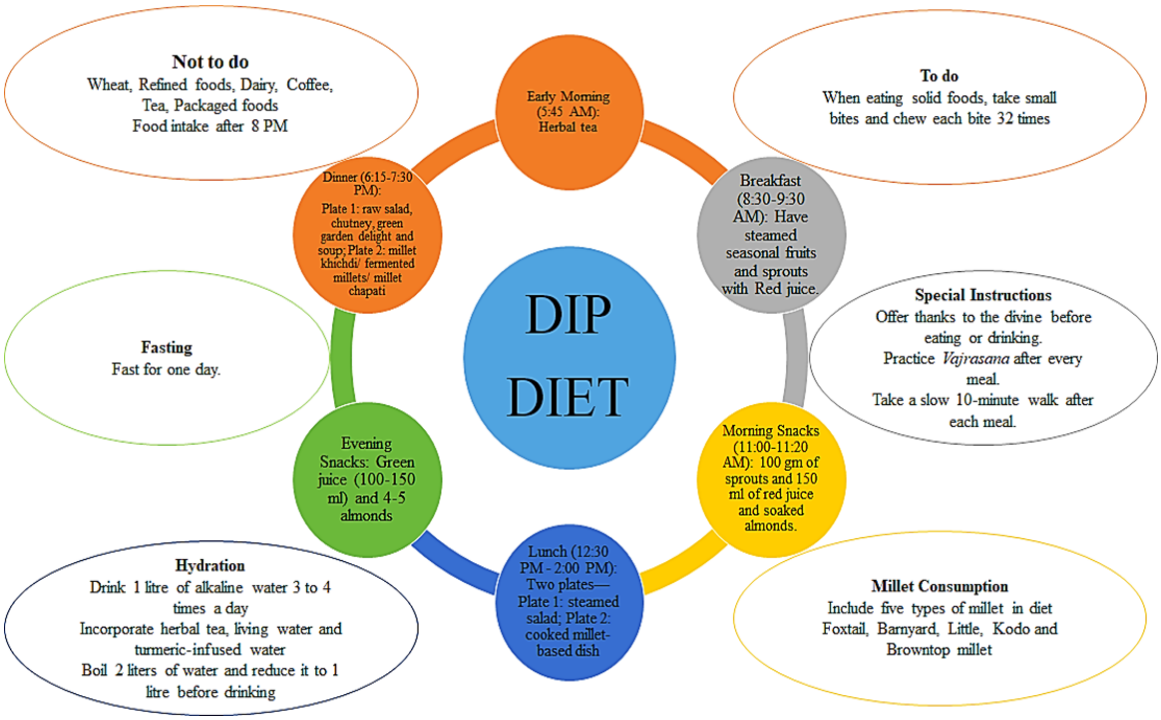
Fig 1: The laboratory investigation reports before and after treatment

2. Treatment Plan

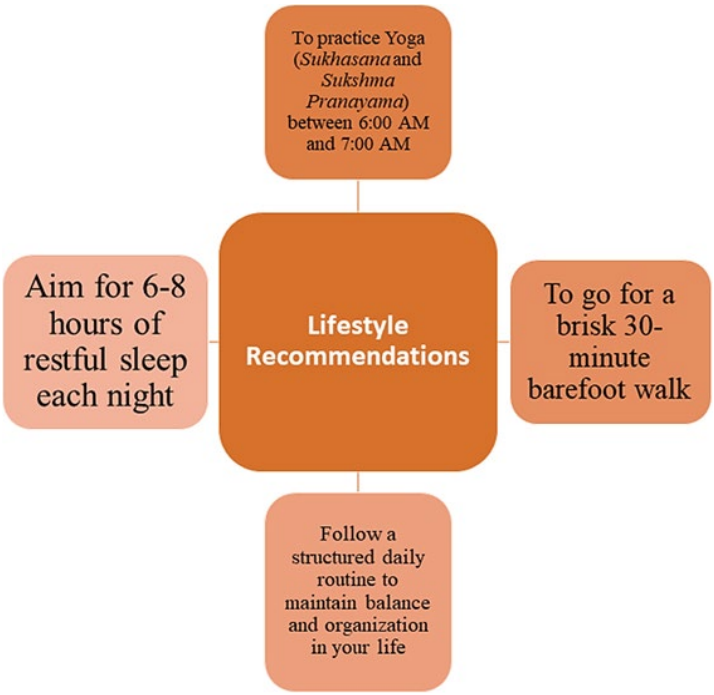
An *Ayurvedic* and Disciplined and Intelligent Person's (DIP) Diet was provided to the patient to complement the *Ayurvedic* treatments administered for CKD [15]

1. Diet Plan:

Dietary Guidelines from Jeena Sikho Lifecare Limited Hospital (Fig 2):



2. Lifestyle Recommendations (Fig 3)



3. *Panchakarma* Procedures Administered to Patient

i). *Awagah Swedan* [16]

- The patient was submerged up to the navel in a tub of warm water.
- The temperature of water was maintained at 42˚C.
- The patient spent 40 minutes under the conditions provided.

ii). *Shiropichu* with *Brahmi Oil* [17, 18]

- *Brahmi oil* was warmed to a comfortable temperature.
- 40 ml of 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 20 minutes.

iii). *Udar Basti* with *Punarnava* Oil [19, 20, 21]

- The person was positioned comfortably, and *Punarnava oil* was warmed (37-42˚C) and applied to the abdominal region to relax the muscles and prepare the area for treatment.
- A dough barrier was formed around the navel to create a well that held the *Punarnava oil* in place.
- The warmed *Punarnava oil* was poured into the dough reservoir and left for 15-30 minutes.

iv). *Matra Basti* with *Gokshura* and *Punarnava* Oil [22]

- A decoction of *Punarnava* and *Gokshura* is made by boiling upto warm temperature (37-42˚C).
- The patient was rested in a relaxed position, lying on their left side with knees drawn up. The oil was warmed to a comfortable temperature.
- Using an enema bulb or *Basti* tube, the nozzle was gently inserted into the rectum and administered approximately 120 ml of the medicated oil.
- The patient was advised to hold the oil inside for 30 minutes.

v). *Lepam with Dashmool and Punarnava* [23, 24]

- A smooth paste was prepared by mixing *Dashmool* and *Punarnava* powder with warm water.
- The area was cleansed, and the paste was evenly applied in a moderate layer.
- The *Lepam* was left undisturbed for 45 minutes until it dried naturally.

vi). *Sarwang Abhyang* with *Mahanarayana Oil* [25]

- The patient was positioned comfortably and *Mahanarayan* Oil was indirectly warmed to an optimal temperature.
- The warmed oil was evenly applied over the entire body, covering all major joints, muscles, and pressure points.
- Systematic massage was performed using gentle yet firm strokes, circular motions over joints, and long strokes along the limbs for approximately 45 minutes.
- The patient was allowed to rest for 15 minutes to facilitate deeper oil absorption, followed by a warm water bath.

vii). *Matra Basti* with *Punarnava, Gokshuru* and *Eranda Siddha Sneha* [26,27]

- The medicated oil with *Punarnava*, *Gokshuru* and *Eranda* was warmed to an appropriate temperature.
- The patient was positioned in the left lateral position with the right leg flexed.
- The warmed medicated oil was gently introduced into the rectum using a sterile enema syringe or *Basti Yantra*, ensuring a smooth and comfortable procedure.
- The patient remained still for a few minutes.

4. Medicinal Interventions

i). Previously Prescribed Allopathic Medicines: The previously prescribed medications for the patient were Alpha Ketoanalogue Tablet (1 TDS), Metformin (500 mg) + Vildagliptin (50 mg) (1 OD), Cilnidipine (10 mg BD), Aspirin (75 mg HS), Iron capsule, Methylcobalamin (1 OD), Metolazone (1 OD), Furosemide + Spironolactone, Febuxostat (40 mg), and Pantoprazole. Among these, Alpha Ketoanalogue Tablet, Furosemide + Spironolactone (1 OD), and Febuxostat (40 mg OD) were continued daily for three days and then on alternate days, while Metformin (500 mg) + Vildagliptin (50 mg), iron capsule, Methylcobalamin, Metolazone, and Pantoprazole were discontinued. Aspirin (75 mg HS) and Cilnidipine (10 mg) were continued throughout the treatment.

ii). *Ayurvedic* Medications: The *Ayurvedic* medicines employed in this case were, Dr CKD tablet, GFR Powder, Chander vati, Divya Shakti Powder and Liv Shuddhi Tablet along with *Panchakarma* therapies. The medicines advised during the treatment is mentioned in Table 5. The description of the medicines is detailed in Table 6.

Table 5: Medications taken during the treatment period

Date	Medicines	Dosage with Anupana
14-06-2024 (IPD)	GFR Powder	Half a teaspoon BD (*Adhobhakta* with *koshna jala*) After meal with lukewarm water
	Dhatu Poshak Capsule	2 CAP BD (*Adhobhakta* with *koshna jala*)
	CKD Tablet	2 TAB BD (*Adhobhakta* with *koshna jala*)
	Chandervati Tablet	2 TAB BD (*Adhobhakta* with *koshna jala*)
	Amal Pitt Nashak	2 TAB BD (*Adhobhakta* with *koshna jala*)
	JS BP cure	2 CAP TDS (*Adhobhakta* with *koshna jala*)
	Pearl capsule	1 TAB TDS (*Adhobhakta* with *koshna jala*)
20-06-2024	GFR Powder	Half a teaspoon BD (*Adhobhakta* with *koshna jala*)
	Dhatu Poshak Capsule	2 CAP BD (*Adhobhakta* with *koshna jala*)
	CKD Tablet	2 TAB BD (*Adhobhakta* with *koshna jala*)
	Divya Shakti Powder	Half a teaspoon BD (*Madhyabhakta* with *koshna jala*) Before bed with lukewarm water
	Chandervati Tablet	2 TAB BD (*Adhobhakta* with *koshna jala*)
17-07-2024	GFR Powder	Half a teaspoon BD (*Adhobhakta* with *koshna jala*)
	Chandervati Tablet	2 TAB BD (*Adhobhakta* with *koshna jala*)
	Asthiposhak vati	2 TAB BD (*Adhobhakta* with *koshna jala*)
	Sama vati	2 TAB BD (*Adhobhakta* with *koshna jala*)
	Divya Shakti Powder	Half a teaspoon BD (*Madhyabhakta* with *koshna jala*)
	Renal support syrup	20 ml BD (*Adhobhakta* with *sama matra koshna jala*) After meal with equal amount of lukewarm water

Table 6: Description of the *Ayurvedic* medications taken during the treatment period.

Medicine Name	Ingredients	Therapeutic Effects
GFR Powder	*Bhoomi Amla* (*Phyllanthus niruri*), *Bhadi Harad (Terminalia chebula), Bahera (Terminalia bellirica), Kasni (Cichorium intybus), Makoy (Zea mays), Punarnava (Boerhavia diffusa), Gokshur (Tribulus Terrestris)*.	Mutral (*Diuretic*), Shoth har (*Anti-inflammatory*), Virechana (*Purgative*), Rakta shodhana (*Blood purifier*), Vatanulomana (*Vata regulator*), Mutravirechana (*Urinary purgation*), Rasayana (*Rejuvenative*), Shamac-dam (*Tissue digestion*), Medohar (*Mediurn remover*), Frikkadoshahara (*Kidney toxin eliminator*)
Chander Vati Tablet	*Kapoor Kachri* (*Hedychium spicatum*), *Vacha* (*Acorus calamus*), *Motha* (*Cyperus rotundus*), *Kalmegh* (*Andrographis paniculata*), *Gilo* (*Tinospora cordifolia*), *Devdaru* (*Cedrus deodara*), *Darv Haldi* (*Curcuma longa*), *Atees* (*Aconitum heterophyllum*), *Darv Haldi* (*Berberis aristata*), *Pipla Mool* (*Piper longum root*), *Chitrak* (*Plambago zeylanica*), *Dhaniya* (*Coriandrum sativum*), *Harari* (*Terminalia chebula*), *Bahera* (*Terminalia bellirica*), *Amla* (*Embellica officinalis*), *Chavya* (*Piper chaba*), *Vayavdung* (*Embelia ribes*), *Pippali* (*Piper longum*), *Kalinjiree* (*Piper nigrum*), *Sonth* (*Zingiber officinale*), *dried siris*), *Saj Apal* (*Spondias officinalis*), *Swarn Makshik Bhasm* (*Gold and pyrite ash - Ayurvedic preparation*), *Sujj Kshar* (*Potassium carbonate - traditional alkali preparation*), *Sendha Namak* (*Rock salt*), *Kala Namak* (*Black salt*), *Chhoti Elaichi* (*Elettaria cardamomum - small cardamom*), *Dalchini* (*Cinnamomum verum*), *Tejpatra* (*Cinnamomum tamala*), *Dant*i (*Baliospermum montanum*), *Nishotara* (*Operculina turpethum*), *Vanslochan* (*Bambusa slicca*), *Loh Bhasm* (*Iron ash - Ayurvedic preparation*), *Shilajeet* (*Asphaltum punjabianum*), *Guggul* (*Commiphora wightii*).	Raktashodhana (*Blood purifier*), Pitta Shaman (*Pitta pacificer*), Deepan (*Appetizer*), Pachan (*Digestant*), Vata-Pitta Shaman (*Dosha pacificer*)
Dhatu Poshak Capsule	*Chuna Shudh*, *Shankh Bhasam*, *Mukta Shudti*, *Prawal Pishti*, *Kapardika* and *Loh*	Dhanposhaka (*Tissue nourishing*), Rasayana (*Rejuvenative*), Balya (*Strengthening*), Asthodhak (*Channel cleanser*), Vata-Pitta Shamak (*Vata and Pitta balancing*), shodhak (*Detoxifier*), Agni Deepan (*Digestive fire stimulant*), Lekhana (*scraping/Lipolytic*)
CKD Tablet	*Padambhed* (*Bergenia ciliaris*), *Varun* (*Crateava nurvala*), *Punarnava* (*Boerhavia diffusa*), *Gokhra* (*Tribulus terrestris*), *Apamarg* (*Achyranlhes aspera*), *Haldi* (*Curcuma longa*), *Charila* (*Embelia ribes*), *Kubhi* (*Dolichos biflorus*), *Harad* (*Terminalia chebula*), *Bhumiamla* (*Pericarp pimeioides*), *Gilo* (*Tinospora cordifolia*), *Shikakai* (*Terminalia citrina*), *Anantmool* (*Hemidemus indicus*), *Khas* (*Vetiveria zizanoides*), *Var Kshar* (*Alkaline substance - Potassium eight unclear*), *Muli Kshar* (*Raphantus sativus*), *Mukul Shora* (*Sodium bicarbonate*), *Sujj Kshar* (*Traditional alkaline substance - botanical origin unclear*), *Shilajeet* (*Asphaltum*), *Hajral Yahud* (*Siliceon dioxide*), *Sheet Parpati* (*Mercury-based preparation in Ayurvedic medicine*).	Vata-Pitta Shaman (*Dosha pacificer*), Raktashodhana (*Blood purifier*), Frikkadosh (*Kidney toxin*), Shothhar (*Anti-inflammatory*), Mutral (*Diuretic*)
Amalpit Nashak	*Mulethi* (*Glycyrrhiza glabra*), *Pudina* (*Mentha spicata or Mentha arvensis*), *Hing* (*Ferula asa-foetida*), *Chitrak* (*Plumbago zeylanica*), *Jeera* (*Cuminum ciminum*), *Vidang* (*Embelia ribes*), *Ajvain* (*Trachyspermum ammi*), *Sonth* (*Piper nigrum*), *Pipal* (*Piper longum*), *Shunthi* (*Zingiber officinale*), *Amla* (*Emblica officinalis*), *Phyllanthus emblica*), *Vibhitaki* (*Terminalia bellirica*), *Haritaki* (*Terminalia chebula*), *Shankh Bhasam* (*Calcined conch shell ash*), *Lawang* (*Szygium aromaticum*).	Pittashamak (*Pitta pacificer*), Agnideepan (*Digestive fire enhancer*), Amapachan (*Metabolic toxin eliminator*), Shoth har (*Anti-inflammatory*), Vatanulomana (*Vata regulator*), Rasayana (*Rejuvenator*), Ojaovardhaka (*Immunity enhancer*)
JS BP cure	*Sarpgandha* (*Rauwolfia serpentina*), *Arjun* (*Terminalia arjuna*), *Shigru* (*Moringa oleifera*), *Haritaki* (*Terminalia chebula*), *Vibhitaki* (*Terminalia bellirica*), *Amla* (*Emblica officinalis*), *Godanti Bhasm* (*Gypsum*).	Raktashodhana (*Blood purifier*), Vatanulomana (*Vata regulator*), Shoth har (*Anti-inflammatory*), Bralmanea Roga Vatahar (*Vata pacificer*), Pitta Shaman (*Pitta pacificer*), Raktavardhaka (*Blood builder*), Vishagna (*Detoxifier*), Deepan (*Appetizer*)
Pearl capsule	*Kamdudha ras*, *Salt giloy*, *Pravaal Panchamrit ras*, *Zaharnohra Khati Pishti*, *Akik Pishti*, *Kapdark Bhasm*, *Moti Pishti*, *Shankh Bhasm* and *Godanti Bhasm* (*Gypsum*).	Pittashaman (*Pitta-pacifying*), Vata Shaman (*Harmonic reliever*), Amalpitta Hara (*Anti-hyperacidity*), Hridya (*Cardioprotective*), Balya & Rasayana (*Strengthening & Rejuvenative*)
Divya Shakti Powder	*Trikat*u, *Triphala*, *Nagarmotha* (*Cyperus rotundus*), *Vay Vidang* (*Embelia ribes*), *Chhoti Elaichi* (*Elettaria cardamomum*), *Tej Patta* (*Cinnamomum tamala*), *Lavang* (*Szygium aromaticum*), *Nishoth* (*Operculina turpethum*), *Sendha Namak*, *Dhaniya* (*Coriandrum sativum*), *Pipla Moo*l (*Piper longum root*), *Jeera* (*Cuminum ciminum*), *Nagkesar* (*Mesua ferrea*), *Anis*h (*Zanthoxylum armatum*), *Hardana* (*Punica granatum*), *Badi Elaichi* (*Amomum subulatum*), *Hing* (*Ferula asafocida*), *Kachnar* (*Bauhinia variegata*), *Ajmod* (*Trachyspermum ammi*), *Sujjikhsar*, *Pushkarmool* (*Inula racemosa*), *Mishri* (*Saccharum officinarum*).	Ojakshaya (*Loss of vitality/immunity*), Agnimandaya (*Low digestive fire*), Chakshushakya (*Weak vision*), Deepan (*Appetizer*), Rasayana (*Rejuvenator*)
Asthiposhak	*Godanti*, *Shudh Shilajeet* (*Asphaltum punjabianum*), *Ashwagandha* (*Withania somnifera*), *Tabaqsheer* (*Bambusa vulgaris*), *Pippali* (*Piper longum*), *Amba Haldi* (*Curcuma amada*), *Hadjor* (*Cissampelos pareira*), *Maida Saq*	Asthi Dhatu Poshana (*nourishes bone tissue*), Asthi Bala Vardhana (*strengthens bones*), Vata-Pitta Shamak (*Vata and Pitta balancing*), shodhak (*Detoxifier*), Agni Deepan (*Digestive fire stimulant*), Lekhana (*scraping/Lipolytic*)
Sama Vati	*Gokshur* (*Tribulus terrestris*), *Kaunch* (*Mucuna pruriens*), *Shatavar* (*Asparagus racemosus*), *Ashwagandha* (*Withania somnifera*), *Vidarikand* (*Pueraria tuberosa*),	Agnideepan (*Digestive stimulant*), Pachan (*Digestant*), Vatanulomana (*Vata regulator*),

	Bej Band Lal (*Stolo cordi(slia*), *Akarkara* (*Anacyclus pyrethrum*), *Talmakhana* (*Hygrophila auriculata*), *Musli* (*Chlorophytum tuberosum*), *Amla* (*Emblica officinalis*), *Sonth* (*Zingiber officinale*), *Jaiphal* (*Myristica fragrans*), *Swarn Makshik* (*Chalcopyrite*), *Shilajeet Shudh* (*Asphaltum punjabianum*).	Shoth har (*Anti-inflammatory*), Raktashodhana (*Blood purifier*), Rasayana (*Rejuvenative*), Mutral (*Diuretic*), Vrishya (*Aphrodisiac*), Dhatu Poshana (*Channel cleanser*), Vishagna (*Detoxifier*), Pittashaman (*Pitta purifier*)
Renal Support Syrup	*Nimba* (*Azadirachta indica*), *Arjun* (*Terminalia arjuna*), *Gokshur* (*Tribulus terrestris*), *Haritaki* (*Terminalia chebula*), *Ashwagandha* (*Withania somnifera*), *Karanj* (*Pongamia pinnata*), *Chiraita* (*Swertia chirayita*).	Mutravirechana (*Urine purifier*), Shoth har (*Anti-inflammatory*), Raktashodhak (*Blood purifier*), Deepan (*Appetizer*), Pachan (*Digestant*), Rasayana (*Rejuvenative*)

Result

After 7 days of IPD, the patient experienced noteworthy development in symptoms, which denotes the interventions used in the study are effective against CKD, T2DM, CAD and hypertension. Also the relief from back ache and weakness shows that the *Ayurvedic* interventions used in the case study are effective for CKD. The 2D Echo conducted on 13/06/2024 revealed the following findings: Left Ventricular Ejection Fraction (LVEF) of 50%. Mild left ventricular hypertrophy (LVH) was observed. The presence of a sclerosed aortic valve was noted. The conditions before and after treatment is mentioned in Table 7.

Table 7: The conditions before and after treatment

Conditions	Before Treatment	After Treatment
Pedal edema	3°	1°
Weakness	Generalized	*Relief*
Back ache	4/10	1/10

Future Research

This study was conducted on a 48-year-old female patient with CKD, hypertension, T2DM and CAD. While the results were promising, thorough evaluation and further investigation are necessary as the study involved only a single patient. Larger randomized controlled trials are essential to validate the reliability, efficacy, and safety of the integrated *Ayurvedic* therapies used in this study, ultimately aiming to establish standardized protocols and guidelines for clinical practice.

Discussion

Managing CKD with *Ayurvedic* interventions assures a promising alternative for conventionally practicing expensive treatment methods. This case report is about the procedure of *Ayurvedic* therapies and medications works in a 48-year-old female, diagnosed with CKD, T2DM, CAD and hypertension. The patient presented symptoms such as pedal oedema (on/off), generalized weakness and lower back ache. The patient underwent IPD for 7 days. The *Samprapti* [28-32] for this study is depicted in Fig 4.

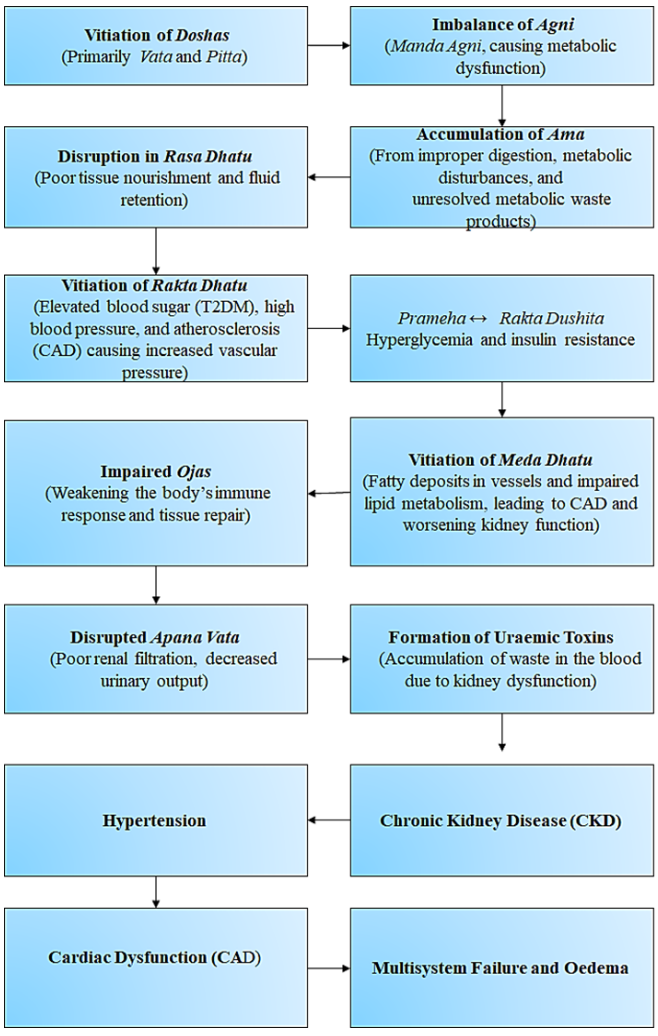


Fig 4: The *Samprapti* for this study

1. The *Samprapti* and *Nidan Parivarjan*

In *Ayurveda*, the *Samprapti* (pathogenesis) of CKD, CAD, hypertension, and T2DM is rooted in *Dosha-Dushya Sammurchana*, mainly involving vitiation of *Kapha*, *Pitta*, and *Vata*, along with *Medo Dhatu* (fat tissue), *Rakta Dhatu* (blood), and *Meda-Mamsa Dhatus* (adipose-muscle tissues). In CKD, *Mutravaha Srotas Dushti* (impairment of urinary channels) occurs due to *Ama* (toxins) accumulation, *Agnimandya* (digestive fire suppression), and *Rasa-Rakta-Prasada Dushti*, ultimately leading to *Ojas Kshaya* (vital essence depletion). CAD is a result of *Medoroga* and *Raktavaha Srotodushti,* where *Kapha* and *Meda* obstruct *Rakta Sanchara* (blood flow), causing *Dhamani Pratichaya* (atherosclerosis). Hypertension is associated with *Raktagata Vata, Avrita Vyana Vata*, or *Pittanubandhi Vata*, leading to *Rakta Chaapa Vriddhi* (elevated blood pressure). T2DM corresponds to *Madhumeha*, a subtype of *Prameha*, caused by *Kapha-Vata Dushti*, resulting in *Medo dushti, Agnimandya*, and *Srotorodha*, impairing glucose metabolism and leading to complications involving multiple organ systems [28-32].

Nidan Parivarjan, the foremost principle of *Ayurvedic* management, involves the elimination or modification of causative and aggravating factors. For all four conditions, this includes avoiding *Ahita Ahar Vihar* (unwholesome diet and lifestyle), such as *Ati-Madhura, Snigdha, Guru Ahara* (excessive sweet, oily, heavy foods), *Alpasanchalana* (lack of physical activity), and *Atinidra* or *Ratrijagarana* (excessive sleep or nighttime waking) [33]. In CKD and HTN, salt and processed food restriction, hydration balance, and stress reduction are essential [34]. In CAD, *Meda Harana* (fat-reducing) regimens and *Hridaya Balya* (cardiotonic) herbs are emphasized [35]. In T2DM, avoidance of *Madhura Ahara*, sedentary habits, and indulgence in stress or excessive sleep is recommended [36]. Thus, by targeting the root causes and reversing pathological progression through diet, lifestyle, and *Ayurvedic* therapies, disease management and prevention become achievable.

2. The Effects of *Ahar-Vihar*

The *Aahar* (dietary) component of the DIP diet emphasizes seasonal, plant-based, and millet-centered meals, aligning closely with *Ayurvedic* principles of *Saatmya* (suitability) and *Agni-Deepana* (enhancing digestive fire) [37]. Inclusion of steamed fruits, sprouts, herbal tea with raw ginger and turmeric, fermented foods, and green juices help in *Ama Pachana* (removal of metabolic toxins), while excluding wheat, dairy, refined, and packaged foods reduces *Kapha* accumulation and *Srotorodha* (channel obstruction) [38]. Structured meal timing and mindful eating practices like chewing 32 times support *Jatharagni* balance, prevent overloading digestion, and enhance rasa *Dhatu* formation [39]. Fasting once a week provides digestive rest and aids in *Dosha* shaman (pacification of *Doshas*) [40]. Hydration with alkaline and turmeric-infused water boosts pitta function and improves *Mutravaha Srotas* (urinary channels), particularly beneficial in CKD and metabolic disorders [41].

The *Vihar* (lifestyle) guidelines focus on *Dinacharya* (daily routine) practices such as early morning yoga (including *Sukhasana* and *Sukshma Pranayama*) [42], barefoot walking [43], structured daily schedules, and adequate sleep [44]. These collectively help balance *Vata Dosha*, enhance *Prana* (life force), and stabilize the nervous system, reducing stress—a key factor in hypertension, diabetes, and heart disease. Practices like *Vajrasana* after meals and a slow walk improve digestion and metabolism [45]. Sleep hygiene of 6–8 hours is vital for *Ojas* preservation and endocrine balance [44]. Thus, the integrated *Aahar-Vihar* plan optimizes physiological functions, strengthens *Agni*, supports *Dhatu Poshana* (tissue nourishment), and prevents or reverses chronic lifestyle disorders like CKD, CAD, HTN, and T2DM.

3. The Effects of *Panchakarma* Therapies

The *Awagah Swedan* helps in *Vata–Kapha shamana*, relieves muscular stiffness, improves local circulation, and supports toxin elimination through sweat. This therapy is particularly effective in reducing abdominal bloating and enhancing *Agni* (digestive fire) [16]. *Shiropichu* with *Brahmi* oil calms the mind and nervous system, balances *Prana Vata*, and nourishes the *Majja Dhatu* (nervous tissue), which can be beneficial in stress-induced hypertension and diabetes-related neuropathies [17,18]. *Udar Basti* with *Punarnava* oil works on *Apana Vata* and the abdominal *Srotas* by reducing inflammation, improving bowel movement, and supporting kidney and liver function through localized action and transdermal absorption [19-21]. *Matra Basti* with *Gokshuradi* and *Punarnavadi* oil offers deep *Vatahara* action by nourishing and lubricating the colon, enhancing urinary output (*Mutravirechana*), and reducing oedema, especially beneficial in CKD and cardiac conditions [22]. *Lepam* with *Dashmool* and *Punarnava* acts as an anti-inflammatory and analgesic therapy, useful in managing *Shotha* (inflammation), joint disorders, and muscular fatigue [23,24]. *Sarvanga Abhyanga* with *Mahanarayan* oil rejuvenates all *Dhatus*, improves peripheral circulation, relieves stress, and facilitates lymphatic drainage [25]. *Matra Basti* with *Punarnava*, *Gokshura*, and *Eranda Siddha Sneha* provides synergistic effects, *Mutrala* (diuretic), *Vatanulomana* (regulates *Vata*), and *Srotoshodhana* (channel-cleansing), making it ideal for systemic detox and long-term management of chronic renal, metabolic, and cardiovascular diseases [26, 27].

4. The Effects of *Ayurvedic* Medication

The commonly used herbs across *Ayurvedic* formulations for CKD, CAD, T2DM, and hypertension exhibit specific *Ras Panchaka* properties that contribute to their therapeutic efficacy. *Punarnava* possesses *Tikta* (bitter) and *Kashaya* (astringent) rasa, *Laghu* (light) and *Ruksha* (dry) *Guna*, *Ushna* (hot) *Virya*, and *Katu* (pungent) *Vipaka*, with a special effect (*Prabhava*) as a potent *Mutravirechaka* (diuretic), making it effective in reducing edema and supporting kidney function [46]. *Gokshur* is characterized by *Madhura* (sweet) *Rasa*, *Guru* (heavy) and *Snigdha* (unctuous) *Guna*, *Shita* (cold) *Virya*, and *Madhura Vipaka*, acting as a renal tonic and *Vrikkashamaka* [47]. *Haritaki* contains multiple *Rasas* (excluding salty), with *Laghu* and *Ruksha Guna*, *Ushna Virya*, and *Madhura Vipaka*, known for its *Tridoshahara* action and digestive benefits [48]. *Vibhitaki* exhibits *Kashaya Rasa, Laghu* and *Ruksha Guna, Ushna Virya*, and *Katu Vipaka*, useful in reducing excessive *Kapha* and *Pitta* [49]. *Amla* is unique with a predominant *Amla* (sour) rasa but encompassing all *Rasas* except salty, *Laghu* and *Ruksha Guna*, *Shita Virya*, and *Madhura Vipaka*, offering potent antioxidant and *Rasayana* (rejuvenative) effects [50]. *Giloy* features *Tikta* and *Kashaya Rasa, Laghu* and *Snigdha Guna, Ushna Virya*, and *Madhura Vipaka*, with *Tridoshahara* and *Rasayana* properties, making it effective in managing metabolic disorders [51]. *Ashwagandha* combines *Tikta*, *Kashaya*, and *Madhura Rasa*, *Guru* and *Snigdha Guna, Ushna Virya,* and *Madhura Vipaka*, and acts as a *Balya* (strengthening) and *Rasayana*, beneficial in stress-related and degenerative conditions [52].

Conclusion

The following conclusions can be drawn from this case study on treating CKD, T2DM, CAD with hypertension using *Ayurvedic* interventions:

Symptoms: The *Ayurvedic* treatment provided significant symptomatic relief across key clinical complaints. Pedal oedema, which was initially marked as 3˚, showed notable improvement and reduced to 1˚ following the treatment period. The patient also experienced marked relief from generalized weakness, indicating improved systemic vitality and energy levels. Additionally, the severity of backache, which was rated as 4/10 on the pain scale before treatment, decreased substantially to 1/10, reflecting effective musculoskeletal support and enhanced patient comfort.

Investigations: The *Ayurvedic* intervention demonstrated measurable improvements in several key biochemical parameters over the course of treatment. Blood urea levels decreased from 65.38 mg/dL to 62.57 mg/dL, indicating a positive trend in nitrogenous waste elimination. Serum creatinine, a vital marker of renal function, reduced significantly from 8.60 mg/dL to 7.41 mg/dL, suggesting enhanced kidney performance. Uric acid levels showed a slight reduction from 6.24 mg/dL to 6.18 mg/dL. Additionally, serum sodium levels decreased from 144.3 mEq/L to 137.5 mEq/L, and potassium levels showed a mild increase from 4.76 mEq/L to 4.79 mEq/L, reflecting better electrolyte regulation.

This study concludes that *Ayurvedic* treatments along with allopathic medicines for CKD yielded positive outcomes, including symptom alleviation, improved vital signs, and better laboratory test results. This approach seems to support kidney function and enhance overall patient health. However, additional research with larger, controlled trials is necessary to confirm these findings and develop standardized treatment guidelines.

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