

# UNDERSTANDING CHRONIC KIDNEY DISEASE THROUGH AYURVEDIC PATHOPHYSIOLOGY: A NARRATIVE REVIEW

Dr. Nidhi Soni<sup>1</sup>, Dr. Neetu Sharma<sup>\*2</sup>, Dr Anjali Goyal<sup>3</sup>

<sup>1</sup>Associate professor, Department of Roga Nidan evam Vikriti Vigyan, MAMC&RC, Mangalayatan University, Beswan, Aligarh, Uttar Pradesh.

<sup>2\*</sup>Assistant Professor, Department of Kaya Chikitsa, PG institute of Ayurveda, DSRRAU, Jodhpur, Rajasthan, Mail id- drneetu90@gmail.com

<sup>3</sup>Associate Professor, Department of Samhita & Siddhanta, MAMC&RC, Mangalayatan University, Beswan, Aligarh, Uttar Pradesh.

---

## Abstract

Chronic Kidney Disease (CKD) is a progressive and irreversible deterioration of renal function characterized by structural and functional abnormalities of the kidneys. The presence of kidney damage or an estimated Glomerular filtration rate (eGFR) of less than 60 mL/min/1.73 m<sup>2</sup>, persisting for 3 months or more. It involves a progressive loss of kidney function, often leading to the need for renal replacement therapy, such as dialysis or transplantation. It represents a growing global health burden with increasing prevalence due to diabetes, hypertension, aging populations, and lifestyle changes. Despite advancements in modern medicine, the management of CKD often focuses on slowing disease progression and managing complications rather than curing the disease. Traditional systems of medicine, particularly Ayurveda, offer a unique perspective on kidney disorders through the concepts of Dosha, Dhātu, Srotas, and Agni. In Ayurvedic texts, kidney disorders are not described as a single disease entity but are understood through conditions such as Mutravaha Srotas Dushti, Mutrakricchra, Mutraghata, and Prameha. This narrative review explores CKD through the lens of Ayurvedic pathophysiology, correlating modern biomedical understanding with classical Ayurvedic concepts. The review highlights the role of Tridosha imbalance, impairment of Agni, obstruction of Mutravaha Srotas, and derangement of Dhatus in the development and progression of renal disease and the relevance of Ayurvedic therapeutic approaches including Shodhana, Shamana, dietary regulation, and herbal formulations in managing CKD. Understanding CKD through Ayurvedic principles may provide complementary strategies for prevention, early intervention, and holistic management of renal disorders. The foremost therapeutic principle involves the elimination of causative factors (Nidana Parivarjana). Correction of systemic derangements through Bheshaja Chikitsa like Gokshura, Punarnava, Rasayana etc aims to regulate Jatharagni, thereby preventing the formation of Ama and relieving Srotorodha (obstruction of bodily channels). The therapeutic plan may incorporate both Shamana Chikitsa (palliative management) and Shodhana Chikitsa (purificatory therapies).

**Keywords:** Mutraghata, CKD, Rasayana, Gokshura, Punarvana

**How to cite this article:** Nidhi Soni, Neetu Sharma, Anjali Goyal. UNDERSTANDING CHRONIC KIDNEY DISEASE THROUGH AYURVEDIC PATHOPHYSIOLOGY: A NARRATIVE REVIEW. *Int J Drug Deliv Technol.* 2026;16(79s):627-631. DOI: 10.25258/ijddt.16.79s.116.

---

## Introduction

Chronic Kidney Disease (CKD) is a major public health concern worldwide. It is characterized by gradual and irreversible loss of kidney function, resulting in impaired filtration, electrolyte imbalance, and accumulation of metabolic waste products in the body. According to global health reports, CKD affects approximately 10–15% of the world population and is associated with significant morbidity, mortality, and healthcare costs. The most common causes include diabetes mellitus, hypertension, glomerulonephritis, and prolonged use of nephrotoxic drugs.

In modern medicine, CKD is classified into five stages based on glomerular filtration rate (GFR). Early stages are often asymptomatic, while advanced stages lead to complications such as anemia, bone disorders, cardiovascular disease, and eventually end-stage renal disease requiring dialysis or transplantation. Although medical interventions can delay disease progression, complete reversal remains challenging.

Ayurveda, the ancient system of Science originating in India, provides a holistic approach to understanding diseases through the balance of biological energies

known as Doshas—Vata, Pitta, and Kapha. Health is maintained when these doshas are balanced, and disease occurs when their equilibrium is disturbed. The kidneys and urinary system are described under Mutravaha Srotas (urinary channels), which play a crucial role in maintaining fluid balance and excreting metabolic wastes. While classical Ayurvedic texts do not explicitly describe CKD as a single disease entity, many conditions mentioned in the literature share similar clinical features and pathophysiological mechanisms. These include Mutrakricchra (dysuria), Mutraghata (urinary obstruction), Prameha (metabolic disorders including diabetes), and Shotha (edema). The involvement of Mutravaha Srotas, Rakta, Meda, and Mamsa Dhātu suggests a systemic disturbance affecting renal physiology.

This narrative review aims to analyze CKD from an Ayurvedic perspective, exploring its etiopathogenesis, pathophysiological mechanisms, and possible therapeutic approaches based on classical Ayurvedic principles.

Chronic kidney disease, also called chronic kidney failure, involves a gradual loss of kidney function.

### Understanding Chronic Kidney Disease through Ayurvedic Pathophysiology: A

Kidneys filter wastes and excess fluids from blood, which are then removed in urine. Advanced chronic kidney disease can cause dangerous levels of fluid, electrolytes and wastes to build up in body. Chronic kidney disease (CKD) is characterized by the presence of kidney damage or an estimated glomerular filtration rate (eGFR) of less than 60 mL/min/1.73 m<sup>2</sup>, persisting for 3 months or more. CKD involves a progressive loss of kidney function, often leading to the need for renal replacement therapy, such as dialysis or transplantation.<sup>i</sup> The 2012 Kidney Disease Improving Global Outcomes (KDIGO) CKD classification recommends specifying the cause of CKD and classifies the condition into 6 categories based on GFR (G1 to G5, with G3 split into 3a and 3b). In addition, it also includes staging based on 3 levels of albuminuria (A1, A2, and A3), with each stage of CKD subcategorized according to the urinary albumin-creatinine ratio (ACR; mg/g or mg/mmol) in an early morning "spot" urine sample.<sup>ii</sup>

The prevalence of kidney failure and its major risk factors (including CKD) are increasing worldwide, and the most rapid growth is observed in low- and middle-income countries (LMICs). Increase in the burden of kidney failure is a major challenge for health systems, especially in LMICs, due to growing demand for expensive kidney replacement therapies such as dialysis.<sup>iii</sup>

The economic and social impacts of CKD are profound, particularly in the context of end-stage renal disease (ESRD). The monthly cost of haemodialysis (HD) in private hospitals averages ₹12,000, with annual expenses reaching approximately ₹140,000. Kidney transplantation, while potentially more cost-effective in the long term, has an upfront cost ranging from ₹50,000 in government facilities to ₹300,000 in private hospitals. Post-transplant, the yearly maintenance for immunosuppressive drugs amounts to ₹120,000 or ₹10,000 per month.<sup>iv</sup>

**Aim** - To explore the Ayurvedic and Modern pathophysiology along with management of Chronic kidney disease (CKD).

**Table 1: Vikara Prakriti, Adhishthanantarani and Samutthana Vishesh in Chronic kidney disease (CKD)**

| S. | Lakshana                     | Dos    | Dushya      | Srotas             |
|----|------------------------------|--------|-------------|--------------------|
| 1. | Oedema                       | Kap    | Rasa,       | Rasava             |
| 2. | General                      | Vata   | Rasa        | Rasava ha          |
| 3. | Loss                         | Kap ha | Rasa        | Rasava ha,         |
| 4. | Nausea / Vomiting (Hrillasa, | Kap ha | Rasa        | Rasava ha, Annava  |
| 5. | Muscle Cramps (Pindikod      | Vata   | Rasa,       | Mams avaha         |
| 6. | Breath lessness              | Kapha  | Rasa, Rakta | Pranava ha, Rasava |

### Narrative Review

**Objective** - To evaluate the efficacy of Ayurvedic therapies, including Samshodhana procedures and nephron-protective medicinal plants, in the management of chronic kidney disease.

**Material and Methods** - This review utilized classical Ayurvedic texts to analyse kidney-related concepts and management principles. Contemporary research articles from databases like PubMed and AYUSH portals were reviewed for evidence on Ayurvedic therapies in CKD. Key findings were synthesized to correlate classical wisdom with modern applications.

**Ayurvedic Review** - In Ayurveda, the term "Basti" is often associated with the urinary system, as it is frequently mentioned in the context of processes such as Mutranirmana (formation of urine), Mutraghata (obstruction of urine), Mutrakrcchra (difficult urination), Mutrashmari (urinary stones), and the pathogenesis of Prameha (diabetes). CKD has no direct link to any of the Ayurvedic classics' clinical entities. All disorders cannot be labelled with a name, as stated in Charaka Samhita (A key textbook for Ayurveda medicine) Sutra sthana Trisothyadyaya. The physician should never be embarrassed if he or she does not understand the disease's name. In many cases, the same Doshamay circulate to other parts of the body, causing other diseases, so the treatment of the disease should be targeted once the location of the disease and its causes are determined. The diseases can be studied as provoked Dosha, specific causes, and their sites.<sup>v</sup> Good knowledge of Vikara Prakriti, Adhishthanantarani and Samutthana Vishesh is important for Nidana and Chikitsa.<sup>vi</sup> An Ayurvedic physician can be understood the disease and its process thoroughly.

1. Vikara Prakriti (state of vitiated Dosha, Dhatu, and Malawhich causing the disease)

2. Adhishthanantarani (site of vitiated Dosha)

3. Samutthana Vishesh (cause of vitiation of Dosha) The main cause of all diseases is provoked Dosha.

Following methodology can be used to study chronic kidney disease.<sup>vii</sup>

### Understanding Chronic Kidney Disease through Ayurvedic Pathophysiology: A

In Ayurveda, the kidneys (Vrukka) are considered the foundational organs of the Medovaha Sarotasa. They primarily develop from the Rakta (blood) and Meda (fat) Dhatus, and are classified as Matruja (inherited) Avayava (organs).

Chronic kidney disease (CKD) is not directly mentioned in Ayurveda, but Ayurvedic concepts can be applied to it through Nidana panchaka (the five-fold diagnostic approach). The signs and symptoms of CKD primarily indicate an imbalance in Vata and Kapha Doshas, along with disturbances in multiple Doshas. Initially, there is vitiation in Rasa (plasma), Rakta (blood), Mutra (urine), and Udaka (water), followed by involvement of all Dhatus and Upadhatus (tissues and sub-tissues). The aggravated Doshas and Dhatus circulate through the Rasa with Vyana Vayu, affecting the Mutravaha srotasa (urinary channels), resulting in Khavaigunya (dysfunction). The clinical manifestations of Dosha disturbance are considered the primary signs of CKD.

Mutraghata – Mutraghata denotes a condition of urinary retention associated with mild dysuria, primarily resulting from obstruction within the urinary tract. This condition results in either a complete lack of urine excretion or minimal, difficult urination. It arises from the vitiation of Basti due to circulating aggravated Doshas<sup>viii</sup>.

Clinically, it presents as either complete absence of urine output or scanty and painful micturition. According to Ayurvedic principles, this condition develops due to the vitiation of Basti caused by aggravated and circulating Doshas. Habitual suppression of the urge to urinate in disorders such as Vata Basti, Mutratita, Mutrajathara, and Vata Kundalika contributes significantly to urinary retention. Structural obstructions, including Mutragranthi and Ashthila, further impede urine flow.

In Ushnavata, inflammatory changes arising from urinary tract infections lead to both retention and dysuria. Mutrakshaya, characterized by reduced urine output due to inadequate hydration, may progressively compromise renal perfusion, ultimately resulting in renal cellular damage. Vidvighata involves contamination of urine with

**Table 2: 3 levels of Albuminuria include an ACR (Albumin-Creatinine ratio), Albuminuria categories in CKD**

| Categ<br>ory | AE<br>R | ACR<br>( | Terms |
|--------------|---------|----------|-------|
|--------------|---------|----------|-------|

**Management** - The contemporary approach to CKD management focuses on recognizing and managing the root causes of the disorder. Proper regulation of factors known to worsen disease progression, such as hypertension, proteinuria, metabolic acidosis, and hyperlipidemia, is vital for preserving kidney function and delaying disease advancement. Hypertension should be managed according to recommended blood pressure

### Narrative Review

fecal matter due to rectovesical fistula formation; when such contamination ascends to the upper urinary tract, it predisposes the individual to infections and renal injury. Bastikundala resembles an atonic bladder, leading to urinary retention. In cases of complete obstruction of the urinary tract, symptoms like thirst, delirium, and breathlessness may emerge, resembling uremic syndrome<sup>ix</sup>.

Severe or complete obstruction of the urinary tract may give rise to systemic manifestations such as excessive thirst, delirium, and dyspnea, closely resembling features of uremic syndrome. Persistent urinary retention from these underlying causes leads to urinary stasis, thereby increasing susceptibility to infections and the formation of urinary calculi, which progressively impair renal function.

Samprapti of Chronic kidney disease – Complex urinary tract pathologies and certain systemic diseases contribute to the disturbance of the physiological balance of the three Doshas (Tridosha). Acharya Sushruta describes the process of urine formation as a pitcher immersed in water, where the Doshas enter the Basti (kidneys) in a similar manner, filling it from all sides<sup>x</sup>. These doshas impair the function of the kidneys. After digestion, the kidneys separate and differentiate urine as a metabolic by-product for elimination<sup>xi</sup>. However, when the kidneys are diseased, they cannot properly differentiate and separate urine, leading to the retention of harmful metabolic waste products in the body, which then circulate and cause systemic harm.

#### Staging

The 6 CKD categories, known as stages<sup>1</sup> through 5, are described below (stage 3 is separated into 3a and 3b):  
Grade 1: GFR 90 mL/min/1.73 m<sup>2</sup> and above with evidence of kidney disease, such as hematuria or proteinuria

Grade 2: GFR 60 to 89 mL/min/1.73 m<sup>2</sup>

Grade 3a: GFR 45 to 59 mL/min/1.73 m<sup>2</sup>

Grade 3b: GFR 30 to 44 mL/min/1.73 m<sup>2</sup>

Grade 4: GFR 15 to 29 mL/min/1.73 m<sup>2</sup>

Grade 5: GFR less than 15 mL/min/1.73 m<sup>2</sup> or treatment by dialysis

|    | (mg | (mg/m | (mg/g) |         |
|----|-----|-------|--------|---------|
| A1 | <30 | <3    | <30    | Normal  |
| A2 | 30- | 3-30  | 30-300 | Moder   |
| A3 | >30 | >30   | >300   | Severel |

targets, and efforts should be made to reduce proteinuria to below 1 g/day when possible<sup>xii</sup>.

Ayurveda can help to reduce the complications of CKD :  
**Nidanaparivarjana:** Avoidance of causative factors related to diet (Ahara) and lifestyle (Vihara).

2. Rasayana: Useful for repairing and enhancing the function of the affected organ.

3. Shodhana Karma: Supporting the body's excretory functions through detoxification processes.

## Understanding Chronic Kidney Disease through Ayurvedic Pathophysiology: A

The primary objective of Ayurveda is the preservation and promotion of health in healthy individuals, while the management of disease is considered a secondary goal. Ayurveda adopts a holistic and individualized approach in the management of chronic kidney disease (CKD). The foremost therapeutic principle involves the elimination of causative factors (Nidana Parivarjana). Correction of systemic derangements through Bhesaja Chikitsa aims to regulate Jatharagni, thereby preventing the formation of Ama and relieving Srotorodha (obstruction of bodily channels). The therapeutic plan may incorporate both Shamana Chikitsa (palliative management) and Shodhana Chikitsa (purificatory therapies).

According to Acharya Sushruta, the kidneys (Vrukka) are formed from the Rakta and Meda Dhatu. Ahara (food) is converted into Rasa Dhatu, which then transforms into the other Dhatus, including Rakta. Therefore, the treatment should focus on correcting jatharagni, which strengthens the Dhatwagni (digestive fires), leading to the formation of high-quality Rasadi Dhatu. The use of herbal drugs that specifically act on Rakta and Meda Dhatus is also crucial to nourish the kidneys. After the palliative treatment (Shamana Chikitsa) reduces signs of weakness (Daurbalya) and tissue depletion (Dhatu Kshaya), the patient can be administered gentle purgation (Mrudu Virechana) and Basti (medicated enemas).

**Shamana Chikitsa :** Gokshura possesses Madhura Rasa and Madhura Vipaka and is known for its Deepana, Balya, Basti Vishodhaka, Vrushya, and Ashmarihara properties, along with Sheeta Veerya. Owing to its Madhura Vipaka, Gokshura facilitates the smooth elimination of metabolic wastes through both feces and urine. Its pharmacodynamic actions enhance Snigdha Guna and promote an increase in Kleda (fluid metabolic components) within the body. In response to this physiological increase in Kleda, a regulatory feedback mechanism is initiated, encouraging enhanced urinary excretion, thereby contributing to the maintenance of internal fluid balance and homeostasis. The cooling potency (Sheeta Veerya) of Gokshura supports blood purification (Rakta Prasadena). Since the primary function of the kidneys is to maintain homeostasis by filtering blood and regulating electrolyte balance, administering Gokshura with its Sheeta Veerya helps enhance kidney function. Additionally, as a natural diuretic, it increases urine output, making it beneficial for managing fluid retention-related disorders<sup>xiii</sup>.

Punarnava, Guduchi, Gokshura, Shatavari, and Shilajit are classified as Rasayana drugs in Ayurveda. Among these, Punarnava, Gokshura, and Shilajit are particularly indicated for disorders of the Mutravaha Samsthana (urinary system). These formulations may be considered Naimittika Rasayana for the kidneys and other components of the Mutravaha Srotasa. Clinical observations have demonstrated the beneficial effects of their Rasayana properties, with patients reporting improvement in Jatharagni, enhanced quality and duration of sleep, overall improvement in well-being, increased functional capacity, and a marked reduction in

## Narrative Review

disease-related symptoms. Contemporary scientific studies further substantiate these findings by revealing the strong antioxidant and free radical-scavenging potential of Rasayana drugs. Their Rasayana properties have been demonstrated in clinical studies, where patients reported improvements in digestive fire (Jatharagni), better sleep quality and quantity, enhanced well-being, increased functional capacity and a noticeable reduction in disease symptoms. Modern research supports these claims, highlighting the potent antioxidant and free radical scavenging activities of Rasayana drugs. Extensive studies in phytochemistry have further confirmed the significant antioxidant properties and free radical neutralization effects of these herbs<sup>xiv</sup>.

**Shodhana Chikitsa:** In the management of CKD, the elimination of circulating vitiated Dosha can be effectively achieved through Virechanathapy<sup>xv</sup>. Furthermore, Basti therapy, when administered along with suitable medications tailored to manage the complexities of Sannipata conditions, is strongly advocated. This therapeutic approach provides multifaceted benefits, including purification of the system, normalization of aggravated Doshas, and promotion of overall vitality and longevity. Specific Basti formulations such as Sarakashaadi Niruha Basti, Gokshuradi Niruha Basti, Pitadaru Siddha Taila Anuvasana, and Bala rishabhakadi Anuvasana Basti are particularly prescribed for conditions affecting the Basti (urinary system)<sup>xvi</sup>.

## Conclusion

Chronic kidney disease (CKD) is characterized by a progressive and irreversible decline in renal function occurring over months to years. From an Ayurvedic perspective, CKD is understood as an Upadrava (complication) arising from disorders of the urinary system such as Mutraghata, or from systemic conditions like Prameha (Diabetes mellitus). The vitiation of Doshas affects the Basti, impairing normal urine formation and filtration, which results in the accumulation of toxic metabolic by-products and subsequent systemic involvement. In the initial stages, the condition is considered Krucchrasadhya (difficult to treat), whereas in advanced stages it is categorized as Yapya (manageable) or incurable.

Therapeutic management in Ayurveda encompasses Shodhana (purificatory procedures), Shamana (palliative measures), and Rasayana (rejuvenative therapy). The incorporation of Rasayana therapy, along with mental well-being and adherence to a lifelong dietary and lifestyle regimen, may help slow disease progression, preserve remaining renal function, and improve overall quality of life, even in advanced stages of the disease.

## References:

1. Satyanarayana R. Vaidya R. Satyanarayan, Aeddula R. Narothama, <https://www.ncbi.nlm.nih.gov/books/NBK535404/>

- Understanding Chronic Kidney Disease through Ayurvedic Pathophysiology: A
2. Inker LA, Astor BC, Fox CH, Isakova T, Lash JP, Peralta CA, Kurella Tamura M, Feldman HI. KDOQI US commentary on the 2012 KDIGO clinical practice guideline for the evaluation and management of CKD. *Am J Kidney Dis.* 2014 May;63(5):713-35. [PubMed] .
  3. Marcello Tonelli, Victoria Nkunu et al., ISN public affairs, Framework for establishing integrated kidney care programs in low- and middle-income countries, *Kidney International Supplements* (2020) 10, e19–e23.
  4. Solanki K. Akshay, Katara Ramakant et al, Ayushdhara, *An International Journal of Research in AYUSH and Allied Systems, Ayurvedic Perspectives on Chronic Kidney Disease: A Review of Classical Wisdom and Contemporary Applications*, November-December2024| Vol 11| Issue 6, ISSN: 2393-9583 (P)/ 2393-9591 (O).
  5. Vagbhatta. R. Vidyanath, Astanga hr̥daya. Sutrasthana Ch. 12, Sloka 65. 1st ed. Varanasi: Chaukhamba Surbharati Prakashan; 2013, p. 210.
  6. Vagbhatta. R. Vidyanath, Astanga hr̥daya. Sutrasthana Ch. 12, Sloka 66. 1st ed. Varanasi: Chaukhamba Surbharati Prakashan; 2013, p. 210.
  7. Vagbhatta. R. Vidyanath, Astanga hr̥daya. Sutrasthana Ch. 12, Sloka 32. 1st ed. Varanasi: Chaukhamba Surbharati Prakashan; 2013, p. 204.
  8. Vagbhatta. Paradakar Shastri (ed.),Astanga hr̥daya. Nidana sthana Ch. 9, Shloka 3. 9th ed. Varanasi: Chaukhamba Surbharati Prakashan; 2011, p. 498.
  9. Agnivesha. TrikamjiAcarya(ed.) Caraka samhita. Siddhi sthana Ch. 9, Shloka 48. Varanasi: Chaukhamba Surbharati Prakashan; 2005 re-print, p. 719.
  10. Sushruta. TrikamjiAcarya(ed.)Sushruta samhita. Nidana sthana Ch. 3, Shloka 23, 24. 7th ed. Varanasi: Chaukhamba Orientalia; 2003, p. 279,280.
  11. Agnivesha. Trikamji Acarya (ed.) Caraka samhita. Dipika commentary by Cakrapannidutta. Cikitsasthana. Ch. 25, Shloka 17. Varanasi: Chaukhamba Surbharati Prakashan; 2005 re-print, p. 515.
  12. Solanki K. Akshay, Katara Ramakant et al, Ayushdhara, *An International Journal of Research in AYUSH and Allied Systems, Ayurvedic Perspectives on Chronic Kidney Disease: A Review of Classical Wisdom and Contemporary Applications*, November-December2024| Vol 11| Issue 6, ISSN: 2393-9583 (P)/ 2393-9591 (O)
  13. Sudheendran, A., Shajahan, M. A., & Premlal, S.(2021). A comparative diuretic evaluation of fruit and root of Gokshura (*Tribulus terrestris* Linn.) in albino rats. *Ayu*, 42(1), 52–56. [https://doi.org/10.4103/ayu.AYU\\_154\\_17](https://doi.org/10.4103/ayu.AYU_154_17)
  14. Prashanth, G. S., Baghel, M. S., Ravishankar, B., Gupta, S. N., & Mehta, M. P. (2010). A clinical comparative study of the management of chronic renal failure with Punarnavadi compound. *Ayu*, 31(2), 185–192. <https://doi.org/10.4103/0974-8520.72388>
  15. Sushruta. Trikamji Acarya (ed.)Sushruta samhita. Cikitsasthana Ch.33, Shloka 3,32. 7th ed. Varanasi: Chaukhamba Orientalia; 2003, p. 515, 519.
  16. Agnivesha. Trikamji Acarya (ed.)Caraka samhita. Dipika commentary by Cakrapannidutta. Siddhi sthana. Ch.9, Shloka 8. Varanasi: Chaukhamba Surbharati Prakashan; 2005 re-print, p. 717, 718.

## Narrative Review