



Review Article

CHRONIC KIDNEY DISEASE IN LIGHT OF AYURVEDA: A LITERARY REVIEW ON VATAJ PANDU

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ABSTRACT

In recent years, chronic kidney disease (CKD) has become a centre of attraction for researchers all over the world, due to increasing incidence. However, delayed diagnosis and lack of proper management has made it one of the leading causes of death worldwide. In the earlier phase of the disease, relief to the patients can be provided based on chief complaints. But as the disease progresses, only dialysis and kidney transplants remain the line of treatment according to the mainstream system of medicine, thus leading to a large number of side effects and ultimately decreasing the life expectancy. In Ayurveda, CKD is not mentioned in the *Samhita* directly, but it can be correlated with *Vataj pandu* according to similarities in some of the symptoms and causes of these two diseases as mentioned in ancient literature. We can also look out for the *Nidaan* and *Samprapti* according to the history given by the patient and evaluate the *Dosh*, *Dushya*, and the *Srotas* involved, and then devise a line of treatment according to the patient's *Bala*, *Prakriti*, *Agni* and *Oja*. In this article, we're going to talk about an aspect of CKD that can be used as a part of management to improve the quality of life and give hope to all the patients suffering from this disease.

INTRODUCTION

Chronic Kidney Disease (CKD) refers to an irreversible deterioration in renal function that usually develops over a period of years. Initially, it manifests only as a biochemical abnormality but, eventually, loss of the excretory, metabolic and endocrine functions of the kidney leads to the clinical symptoms and signs of renal failure, collectively referred to as uraemia^[1].

According to the guidelines issued by the National Kidney Foundation (NFK) Chronic kidney disease is defined as Kidney damage for more than 3 months, as evidenced by structural or functional abnormalities of the kidney, with or without decreased GFR, manifested by either pathological abnormalities or Markers of kidney damage, including abnormalities in the composition of the blood or urine.^[2] Chronic kidney disease (CKD) has emerged as one of the most prominent causes of death and suffering in the 21st century. Due in part to the rise in risk factors, such as

obesity and diabetes mellitus, the number of patients affected by CKD has also been increasing, affecting an estimated 843.6 million individuals worldwide in 2017^[3]. Old age (>65 years), hypertension, diabetes mellitus, and vascular diseases are very common risk factors that leads to this disease and hence proper screening and examination of such patients can decrease the severity of the disease at an early stage and reduce the overall mortality rate.

CKD comes with a wide spectrum of symptoms that vary from simple burning micturition to complete loss of urine, and that is why there are many aspects of this disease that go unnoticed. The severity and prognosis of this disease is done using a grading system involving-

1. Glomerular Filtration Rate (GRF): G1-G5
2. The amount of albumin found in urine, also known as Albuminuria: A1-A3

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Investigations	Stages of CKD					
	G0	G1	G2	G3	G4	G5
e-GFR	>90	60-89	45-59	30-44	15-29	<15
Sr.creatinine	1.3-1.5	>1.5-2	2-3.5	>3.5	>4	>4
	A1	A2	A3			
ACR	10-29 mg/g	30-299 mg/g	>300 mg/g			

Figure 1: Depicting the grading of CKD^[4]

Causes and Risk Factors of CKD

The most frequent cause of CKD all over the world is diabetic nephropathy, most often secondary to type 2 diabetes mellitus. Patients with newly diagnosed CKD often have hypertension. When no evidence for a primary glomerular or tubulointerstitial kidney disease process is present, CKD is frequently attributed to hypertension. However, it is now well established that some of these patients may have a subclinical primary glomerulopathy. In other patients, progressive nephrosclerosis and hypertension are the renal correlates of a systemic vascular disease, often also involving large and small vessels elsewhere, such as the heart and brain. This latter combination is especially common in older patients, among whom chronic kidney ischemia as a cause of CKD may be often under diagnosed.^[5] Obesity is also often linked to an increased risk of CKD, owing to the fact that obesity in long term can lead to diabetes mellitus. Many cases of CKD have been linked to hereditary causes like polycystic kidneys, renal agenesis, ectopic kidneys etc. In Ayurveda, CKD is not mentioned directly in the ancient literature. However we can correlate it to different diseases based on similarities in causes, signs and symptoms. Also we need to look at the *Srotas* involved in the pathogenesis (*Samprapti*) of the disease. In Ayurveda, *Srotas* are said to be the most important entity for the maintenance of a healthy body. *Srotas* are known to be the channels or transporting passages of the *Doshas* and *Dushya* from *Kostha* to the whole body. Any disturbance in *Srotas* along with elevated *Doshas* can lead to *Dosha-Dushya Sammurchna* in our body, thus manifesting a disease. Hence the management of any disease can be done by correcting the involved *Srotodushti*.

The *Samprapti* of CKD in Ayurveda Classics is described on the basis of the *Srotas* involved and symptoms associated with it. Stage 1 & 2 of CKD is generally asymptomatic where they vitiate the *Rasavaha*, *Raktavaha*, *Mamsavaha srotas* and produces symptoms like *Aruchi*, *Shotha*, *Shwas*, *Krishangta* and *Pandu* at initial level. After that *Dosha-Dushya* get *Sammurchita* (blending of toxins) in *Medovaha srotas* and prepare *Kha- Vaigunya* for renal diseases and in stage 3, 4 or 5 the *Moola* of *Medavaha srotas* (*Vrikka*) is damaged with symptoms of *Atisrisht mutra* (polyuria), *Alpa mutra* (oliguria), *Bahal mutra* (proteinuria)^[6].

Srotas Involved According to Causes of CKD

Causes ^[7]	Srotas Involved
Obesity	<i>Medovaha srotas</i>
Renovascular diseases	<i>Medovaha srotas</i> and <i>rasavaha srotas</i>
Hypertension	<i>Rasavaha</i> and <i>Raktavaha srotas</i>
Glomerulonephritis	<i>Mutravaha srotas</i>
Inflammatory diseases like Vasculitis	<i>Raktavaha srotas</i>

In light of Ayurveda, if we will review CKD, It seems that symptom of *Pandu* is more or less similar to CKD. *Vataj pandu* has been described in all the major *Samhitas* of Ayurveda which signals towards the high prevalence and the importance of this disease since ancient times. According to Acharya Charak, *Vataj pandu* is a disease of the *Rasavaha srotas*, whereas Acharya Sushrut has mentioned it in *Raktapradosaj vyadhi*. *Ras dhatu* is responsible for *Preenana* (providing nourishment) and *Rakta dhatu* is responsible for *Jeevana* (life) and *Varnaprasadan* (complexion). Thus the main symptom found in patients is *Raktaalpata* (lack of blood), *Oja kshaya* (loss of immunity), *Alpa-medha*, *Nisaar* (loss of weight and strength), *Vaivarnya* (discoloration of skin, eyes, nails, face etc) and *Shithilendriya* (sensory weakness). Based on these *Lakshanas*, *Pandu* can be correlated to anaemia.

Nidaan of Vataj Pandu^[8]

- Excess intake of *Kshaar* (alkaline), *Amla* (sour), *Lavan* (salt), *Ushna* (hot) and *Teekshna* (penetrating) *Aahar*.
- The food which is *Virudhha* (incompatibles) and *Asatmya* (unwholesome).
- Intake of *Nishpav*, *Masha*, *Pinyak* and *Til Tail* in excess.
- Excessive *Diwaswapan*, *Vyayama* and *Maithun*.
- *Pratikarma Vaishamaya* (faulty administration of *Panchakarma*) and *Ritu Vaishamaya* (faulty management of seasonal regimen).
- *Vegadharan* (Suppression of natural urge)

Correlation of Causes of CKD and Vataj Pandu

The main causes of CKD are diabetes mellitus and Hypertension. The risk factors leading to diabetes,

hypertension and other causes eventually leading to CKD include-

<i>Nidaan of Vataj Pandu</i> ^[9]	Risk factors of CKD according to modern medicine ^[10]
<i>Santarpan janya Aahar like Madhur, Guru, Snigdha, Pichchil anna</i>	Lifestyle disorders like Diabetes Mellitus, Hypertension, Hyperlipidemia
<i>Cheshta dweshi, Diwaswapan, Aasan sukhe</i>	Lack of physical exercise and obesity
<i>Mutravahasrotasdusti, Mutrakriccha, Mutraghata</i>	Congenital or acquired solitary kidney, glomerular diseases, polycystic kidney, kidney stones

Diagnostic Attributes of Vataj Pandu in Relation with CKD

	Lakshan of Pandu ^[11]	Correlation with the Symptoms of CKD ^[12]
<i>Samprapti</i>	<i>Alpa Rakta</i>	Anaemia
	<i>Alpa meda</i>	Loss of weight
	<i>Nisaar Shithilendriya</i>	Immuno-compromised Sensory weakness
	<i>Vaivarnya</i>	Pallor
<i>Poorvaroop</i>	<i>Hridyaspandan</i>	Palpitations and other CVS disease symptoms
	<i>Swedabhava</i>	Electrolyte imbalance
	<i>Raukshya</i>	Itchy, dry skin
	<i>Shrama</i>	Fatigue and lethargy
<i>Lakshana of Vataj Pandu</i>	<i>Krishna-pandutwa</i>	Pallor, lustreless, pigmented skin
	<i>Ruksha-anganam</i>	Dry skin
	<i>Shoth-parshwashiroruja</i>	Pain, numbness and swelling in foot
	<i>Toda</i>	Muscle spasm and tingling

Anemia (Raktalpta) in CKD^[13]

Previous study illustrates that primary reason of anaemia in CKD is deficiency of erythropoiesis (EPO) and second cause is impaired iron absorption. EPO synthesis hampers due to inflammation in tubular interstitial fibroblasts of outer renal medulla and deep cortex of the kidney which severely affects the RBC production. Anaemia usually starts in stage 3 where GFR is < 60ml/min/1.72 m². Similarly, inflammatory condition affects the formation of erythropoietin (EPO) who is responsible for the formation of RBC count in CKD. As a result, individuals have an absolute iron deficiency.^[14]

There is a direct relationship between decrease in glomerular filtration and increasing severity of anaemia. Usually, the development of anaemia occurs when the glomerular filtration rate drops below 0.5ml/s, or even below 0.75ml/s in patients affected by diabetic nephropathy.

DISCUSSION

The fundamental principles of Ayurveda include *Dosh*, *Dushya* and *Srotas*. Also the diagnosis and management of any disease require the knowledge of these entities. CKD in Ayurveda is correlated with *Vataj pandu* on the basis of these principles only. One

of the earliest symptom of *Vataj Pandu* is *Alpa rakta* that can be correlated with anaemia (reduced hemoglobin in the blood). *Pandu Roga* (Anaemia) can be present as a symptom and in the later stages it can also become a complication of CKD. *Pandu* is a *Santarpanjanya vikaar*, which involves vitiated *Rasa dhatu* along with *Rakta dhatu* leading to deterioration of *Bala*, *Varna*, *Sneha*, *oja* with *Hridyadaurbalya* (HTN & CVD). In chronic phase of *Pandu*, vitiated *Pitta* seated in *Rasa dhatu* go deeper in *Mamsa*, *Meda dhatu* leads to *Oja kshaya* (Organ failure). This condition is also found in CKD patients in the form of anaemia. As kidney function declines and in patients with more advanced CKD stages, the incidence and prevalence of anaemia increases. Anaemia also contributes to the progression of CKD and is one of the factors that contribute to the high morbidity and mortality in patients with chronic renal failure and their reduced survival.

Another symptom of *Vataj Pandu* is *Alpa meda*, emphasizing towards the involvement of *Medovaha srotas*. The *Moola* of *Medovaha srotas* according to both *Acharya Charak* and *Acharya Sushrut* is *Vrikka* (kidneys). In CKD we see the organ which is primarily and predominantly affected is the kidney in the initial stages. The *Vrikka* or kidney undergoes *Kshay*, that is

loss of function which further leads to involvement of other organs as we see in Chronic Kidney Disease.

Some causes of CKD are known to involve *Raktavaha* and *Rasavaha srotas*. *Pandu* has been described as a disease of *Rasavaha* and *Raktavaha srotas* by our *Acharyas*. Hence this becomes another criteria in which we can establish a direct correlation between *Vataj Pandu* and CKD.

CONCLUSION

Each and every disease has been wisely explained in Ayurvedic texts and for the convenience of *Vaidya* some main diseases were elaborated by them along with their management. We should understand CKD on the basis of *Dosha- dushya vikriti*. *Vataj Pandu* symptoms resembles CKD more and thus we can conclude that *Vataj pandu* is nothing but CKD in present scenario. In this study, we have given detailed literary data to satisfy this quest. Furthermore clinical study is needed to prove this fact.

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