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Management of Chronic Kidney Disease - An Ayurveda Case Study

Ankita Aggarwal¹, Gracy Sokiya², Gaurav Sharma³

¹Post Graduate Scholar, Department of Kayachikitsa, Patanjali Ayurveda College, Haridwar, Uttarakhand, India.

²Assistant Professor, Department of Kayachikitsa, Patanjali Ayurveda College, Haridwar, Uttarakhand, India.

³Assistant Professor, Department of Rachana Sharir, Patanjali Ayurveda College, Haridwar, Uttarakhand, India.

ABSTRACT

CKD has become a common disease with a high Prevalence rate of nowadays [1] in people including young individuals, with dialysis and renal transplant as its mainstream healing treatment, but due to low financial backgrounds among large percentage of individuals in India, everyone cannot afford to live a good quality of life. Hence, every individual is not a candidate for renal transplant or dialysis. So, to overcome this issue, an alternate has to be taken keeping in mind a healthy life which is the need of hour. CKD, i.e., Chronic Kidney Disease itself indicates chronicity with irreversible damage to the kidneys due to main leading factor in many cases nowadays as a major cause which is Hypertension and Diabetes mellitus type 2, which clinically presents as symptomless sometimes in initial stages and further presents with pedal edema, decreased appetite, nausea, difficulty in micturition/decreased urine output, frothy/foamy urine, fatigue.[2] Usually it is manifested through various lab investigations such as kidney function test in which increase in serum urea levels, serum creatinine and other are seen i.e., a waste product made by our muscles, also Kidney's one of the vital function is production of erythropoietin[3] gets hampered due to underlying cause results in decline in Hb levels. So, to overcome this *Punarnavadi Mandoor* along with other were advised to the patient. Here the focus is on improvement in various Hematological levels before and after treatment of CKD, by giving *Renogrit* tablet, *Punarnavadi Mandoor*, *Corighan Vati* etc., having special effect on kidneys/as renoprotective.

Key words: Serum Creatinine, Serum Urea, Renogrit, Corighan Vati

INTRODUCTION

India like any other developing country is facing a silent epidemic of chronic renal failure (CRF-A) facet of the health transition associated with industrialization partly fuelled by increase in sedentary lifestyle, low birth weight and malnutrition.[4]

Chronic renal failure (CRF) refers to an irreversible

deterioration in renal function, which develops over a period of years. This initially manifests only as a biochemical abnormality. CRF is considered when glomerular filtration rate (GFR) falls below 30 ml/min.[5]

Type 2 diabetes mellitus is one among the main causative factor of CKD. The presence of high glucose levels for prolonged period leads to the thickening of the glomerular basement membrane and mesangial expansion which further affects the glomerular filtration rate (GFR).[6]

According to National Kidney foundation (NKF), Kidney has seven vital functions such as removal of toxins, control of blood pressure, water balance including production of Erythropetin etc. Thus, here in CKD, the levels of Haemoglobin gets reduced due to the same underlying cause as mentioned. Normally, kidney filter creatinine from blood, which is further excreted out through urine.

Address for correspondence:

Dr. Ankita Aggarwal

Post Graduate Scholar, Department of Kayachikitsa, Patanjali Ayurveda College, Haridwar, Uttarakhand, India.

E-mail: ankita.ankitaaggarwal97@gmail.com

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CASE REPORT

A 61 years old male patient named XYZ reported first time in *Kayachikitsa* department OPD of Patanjali Bhartiya Ayurvedigyan Evum Anusandhan Sansthan, Haridwar in April 2023 as a diagnosed case of Chronic kidney disease with chief complaints of -

Table 1: Chief complaints

SN	Chief complaints	Duration
1.	bilateral swelling in foots	4 months
2.	difficulty in walking due to swelling	
3.	frothy urine	
4.	Decreased appetite	3 months
5.	Nausea	
6.	Fatigue	
7.	Reduced frequency of micturition	2 months

Table 2: General examination

Pedal edema	2+
Pallor	1+
Blood pressure	144/90 mmHg
Built	Obese
Weight	72kg

As per the patient, he was a chronic hypertensive patient who was controlled by the prior medications since many years and the above symptoms appeared 4 months ago. For these complaints he visited nearby hospital for the management but no improvement was seen in his symptoms and was advised for renal transplant as soon as possible. He denied for renal transplant and visited our hospital for a conservative treatment.

MATERIAL AND METHODS

As far as Chronic Kidney disease is concerned, in *Ayurveda* texts, CKD is not separately mentioned so,

can be taken under disorders of *Mutra Vaha Srotas Dushti Vikaras* such as *Mutrakriccha* or *Vrikk Nishkriyata* due to similarity of major symptoms are seen. Here, the patient was given oral medications under the following way;

Table 3: Treatment schedule

SN	<i>Shamana Aushadhi</i>	<i>Matra and Sevan Kaala</i>
1.	<i>Sarvakalp Kwath, Vrikkdoshhar Kwath, Gokhru Kwath</i>	100 ml x BD-Empty stomach
2.	<i>Renogrit</i> tablet (500mg)	2 tab X BD-Before meals
3.	<i>Corighan</i> tablet (500mg)	1 tab X BD-Before meals
4.	<i>Punarnavadi Mandoor</i> tablet	2 tab X BD-After meals
5.	<i>Mukta Vati extra power</i> tablet (500mg)	2 tab X BD-after meals
6.	<i>Haritaki Churna</i>	1 Tsf-HS with lukewarm water

RESULTS

Patient's kidney profile was improved with decline in Serum Creatinine level, Haemoglobin level was increased and other associated lab investigations got normal in 1 month of medications followed by strict *Pathya* diet, marked decline in symptoms were seen.

Decline in the levels of creatinine along with improvement in other lab investigations are mentioned below-

Table 4: Before treatment

Date	Haemoglobin	Neutrophils	S.Creatinine	B.Urea	SGOT
28/3/2023	13.3 gm%	78%	2.1mg/dl	62.0mg/dl	39U/L

Table 5: After treatment

Date	Haemoglobin	Neutrophils	S.Creatinine	B.urea	SGOT
04/05/2023	14.3gm%	53%	1.2mg/dl	32.51mg/dl	18U/L

Blood investigations before treatment

TEST NAME	TEST VALUE	UNIT	REF-RANGE
Haematology			
CBC (Complete Blood Count):-			
Hb (Haemoglobin)	13.3	gm/dl	12 - 17
TLC (Total Leucocyte Count)	6600	cu/mm	4000-11000
DLC (Differential Leucocyte Count)		%	
Neutrophils	78	%	45-75
Lymphocytes	15	%	25-45
Eosinophils	05	%	0-6
Monocytes	02	%	2-10
Basophils	00	%	0-02
R B C (Red Blood Cell)	4.21	million/cu4.5-6.5	
M C V (Mean Corpuscular Volume)	89.1	fL	80.0-99.0
PCV/RCT (Packed Cell Volume)	37.5	%	38.0-50.0
MCH (Mean Corpuscular Hb)	31.6	pg	27.0-37.0
MCHC (Mean Corpuscular Hb Con.)	35.5	gm/dl	33.0-37.0
RDW (Red Cell Distribution)	13.3	%	11.5-14.5
PLATELET COUNT	1.78	Lacs/cumm	1.50-4.00
MPV (Mean Platelet Volume)	7.9	fL	7.4-10.4
BIOCHEMISTRY			
BLOOD SUGAR Random	89.0	mg/dl.	70 - 145
BLOOD UREA	70.0	mg/dl.	10-40
TOTAL BILIRUBIN	0.9	MG./DL	0.2 - 1.2
S.G.O.T.	39.0	U/L	<35

Signature

सही जांच
सही इलाज

Help Line :- 9639

TEST NAME	TEST VALUE	UNIT	REF-RANGE
BIOCHEMISTRY			
BLOOD UREA	42.0	mg/dl.	10-40
SERUM CREATININE	2.1	mg/dl.	0.8 - 1.2

Signature

सही जांच
सही इलाज

Blood investigations after treatment

Test Name	Result	Biological Ref. Interval	Unit
Kidney Function Test			
Blood Urea Nitrogen (BUN)	15.19	8.41 - 25.70	mg/dl
Urea	32.51	21.00 - 49.00	mg/dl
Creatinine	1.20	0.70 - 1.30	mg/dl
BUN Creatinine Ratio	12	10 - 20	
Uric Acid	5.9	3.4 - 7.0	mg/dl
Sodium	140	136 - 145	mmol/L
Potassium	4.7	3.5 - 5.1	mmol/L
Chloride	106	97 - 107	mmol/L
Calcium	8.9	8.6 - 10.0	mg/dl
Phosphorus	3.6	2.6 - 4.5	mg/dl

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Test Name	Result	Biological Ref. Interval	Unit
HEALTHKIND ACTIVE			
Complete Blood Count (CBC)			
Haemoglobin (Hb)	14.3	13.0 - 17.0	gm/dl
Total WBC Count / TLC	5.5	4.0 - 10.0	thou/ μ l
RBC Count	4.9	4.5 - 5.5	million/ μ l
PCV / Hematocrit	42.4	40.0 - 50.0	%
MCV	86.4	83.0 - 101.0	fL
MCH	29.1	27.0 - 32.0	pg
MCHC	33.7	31.5 - 34.5	g/dL
RDW (Red Cell Distribution Width)	13.6	11.8 - 15.6	%
DLC (Differential Leucocyte Count)			
Neutrophils	53	40 - 80	%

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DISCUSSION

As mentioned earlier, CRF/CKD is specific form of renal disease. According to *Ayurveda*, CRF is a disease of *Mutravaha Srotas*. Though all the three *Doshas* as well as all the *Dushyas* are involved in the disease, *Kapha* is responsible in blocking microvessels and developing microangiopathy. *Vata* is responsible for degeneration of the structure of the kidney.^[7]

So, to prevent the resistance of tissues, *Rasayana* drugs were chosen such as *Renogrit*, containing *Gokshur*, *Punarnava*, etc. so as to prevent and repair the tissue damage and enhance the quality of tissues.

Also, *Lekhan Dravyas* such as *Apamarg*, *Gokshur*, *Kasni* etc. having *Tikta Rasa* and *Rooksha Guna* which help in drying of *Ama*, bring out a clear *Rasa Dhatu* and clear the *Srotus*, further helping in good circulation making way for proper *Dhatu* nourishment.

Especially *Punarnava*, *Gokshura* are recommended exclusively in the disorders of *Mootravaha Samsthana*. These drugs should be accepted as *Naimittika Rasayana* for kidney and other organs of *Mootravah Srotas*. *Rasayana* drugs bear the property of anti-oxidant and work as free radical scavengers.^[8]

Also, the above mentioned drugs have *Mutral* properties which resolve the problem of *Mutrakriccha*.

Renogrit tablet - Since, chronic kidney disease has a *Pitta* dominant *Tridosha* in its pathology, *Renogrit* is a compound containing extracts of *Varun*, *Kasni*, *Pashanbheda*, *Punarnavamoola*, *Gokshur*, *Varuna*, *Apamarg* specifically has *Pitta Shamaka* properties, *Tridosahara Guna*, *Madhur Vipaka* with *Mutral* properties and having *Tikta Rasa* predominant drugs, having properties of igniting *Jatharagni* to correct out the invariably presenting *Mandagni* in CKD; thus, brings *Niramata*.

Keeping in mind, *Haritaki Churna* have *Anuloman* property, thus helps in balancing *Apana Vaayu*, which relieves a symptom of constipation. The use of such *Mridu Virechan Dravya* is recommended in *Vata* predominant disorders and diseases situated in central locations of *Vata Dosh*.^[9]

Punarnavadi Mandoor - Since *Panduta* (Paleness) as well as *Shotha* (Edema) with *Alpa Rakta* is also a major sign of patients with kidney failure, to combat this, *Punarnavadi Mandoor* was advised to the patient which also acts as *Rasayana* for *Vrikkas*.

Though, *Punarnavadi Mandoor* is the best formulation told by *Acharyas* specifically on *Pandu*. Key ingredients of *Punarnavadi Mandoor* are useful in *Pandu Roga Chikitsa*. It also contains drugs that improve liver functioning which is very useful to remove toxins from the body. So, there is proper functioning of *Rasa Dhatwagni* and *Raktadhatwagni* which is a very important factor to cure the disease.^[10]

Vrikkdoshhar Kwath - As the name says, it contains drugs such as *Dhak* (*Butea monosperma*), *Pittpapda* (*Fumaria indica*), *Punarnavamool* (*Boerhaavia diffusa*), *Pashanbhed* (*Saxifraga ligulata*), *Varun* (*Crataeva nurvala*), *Kulthi* (*Dolichos biflorus*), *Apamarg* (*Achyranthus aspera*), *Kasni* (*Cichorium intybus*), *Peepal* (*Ficus religiosa*), *Neem* (*Azadirachta indica*), *Makoy* (*Solanum nigrum*), *Gokharu* (*Tribulus terrestris*), *Dhamasa* (*Fagonia arabica*), *Kush* (*Desmostachya bipinnata*), *Kas* (*Saccharum spontaeum*), *Dhan* (*Oryza sativa*), *Sarkanda* (*Saccharum officinarum*), *Ekh* (*Saccharum munja*), *Untkatara* (*Echinops echinatus*), *Giloy* (*Tinospora cardifolia*), *Arni* (*Premna integrifolia*), *Amaltas* (*Cassia fistula*), *Bala* (*Sida cordifolia*), *Shatavari* (*Asparagus racemosus*), *Vidari* (*Pueraria tuberosa*), *Kateri Chhoti* (*Solanum xanthocarpum*), *Kateri Badi* (*Solanum indicum*), *Jou* (*Hordeum vulgare*), *Kutaki* (*Picrorhiza kurroa*) which have effect on *Vrikka* (Kidneys).

Since this *Kwath* includes *Mutral Dravyas* mentioned as *Mutravirechaniya Dashemani* of *Charak Acharya* are considered as best diuretics. It is helpful in treating the infections inside the kidney and other kidney related diseases.^[11]

Sarvakalp Kwath - It contains *Punarnava* (*Boerhaavia diffusa*), *Bhumi Amla* (*Phyllanthus niruri*), *Makoy* (*Solanum nigrum*) helps in conditions of reduced urine content, stomach and pelvis pain, indigestion, lack of appetite and others. Since these drugs are considered as best hepatoprotective agents as per *Ayurveda* texts,

thus helps in strengthening liver which results in proper formation of *Aadhyarasa Dhatu*. *Phyllanthus niruri* is one of the commonly used species of this family for the treatment of liver and kidney disorders.^[12] *S. nigrum* L. also known as “*Makoy*” contains several steroidal glycosides, steroidal alkaloids and steroidal oligoglycosides that also act as antioxidants reducing hepatic injuries through amelioration of oxidative stress^[13,14]

Mukta Vati extra power - It contains *Gajwa* (*Onosma bracteatum*), *Brahmi* (*Bacopa monnieri*), *Shankhpushpi* (*Convolvulus pluricaulis*), *Ghodbach* (*Acorus calamus*), *Ashwagandha* (*Withania somnifera*), *Malkangani* (*Celastrus paniculatus*), *Saunf* (*Foeniculum vulgare*), *Pushkarmool* (*Inula racemosa*), *Ustekhaddus* (*Lavandula stoechas*), Fine Powders of *Jata Manasi* (*Nardostachys jatamansi*), *Sarpagandha* (*Rauwolfia serpentina*), *Mukta Pishti*. Among these, *Brahmi* and *Shankhpushpi* possess antihypertensive, antidepressant and anti-anxiety properties. Anti-hypertensive activity of reserpine which is major phyto-constituent of *Sarpagandha*. Significant reduction in systolic and diastolic blood pressure with *Malkangani*. *Vacha* possesses anti-hypertensive effect mediated through Ca^{+2} antagonism and NO pathways.^[15]

Overall, this drug cures high blood pressure or heart disease caused by the disorders of the kidneys etc. So, this was chosen to control hypertension which ultimately prevents kidneys.

Corighan Tablet - It contains extract of *Coriandrum sativum*, an important medicinal plant, is known for its hepatoprotective, diuretic, carminative, digestive and Antihelminthic potential. Moreover, the plant was also reported to treat jaundice.

Treatment with *Coriandrum sativum* extract prevented a rise of urea, creatinine and blood urea nitrogen in serum. *Coriandrum sativum* is a potential source of nephroprotective phytochemical activity, with flavonoids and polyphenols as the major components.^[16]

Gokhru Kwath - contains *Yavakuta* powder of *Gokhru*. Its ethanolic extract has already proved as

hepatoprotective and nephroprotective action.^[17]

Pathya-Apathya diet^[18]

Pathya diet was recommended by keeping in mind the dietary plans for *Mootravaha Sroto Vikaras*-

Table 6: Pathya-Apathya

Pathya diet	Apathya diet
<i>Mudgarasa</i> -once weekly	Protein diet - including milk/dairy products except <i>Takra</i>
<i>Yava Anna Sewan</i>	<i>Godhum</i>
<i>Patol Sewan</i> , <i>Urvaruk</i> (snake cucumber) and boiled vegetables	Heavy pulses
<i>Saindhav Lavana</i>	Packed items
Fruits - Apple, Papaya	Citrus fruits
Strict fluid intake - 1 to 1.5litres/day	Spice and pickles

CONCLUSION

In this case, treatment of the patient was also focused on strictly following *Pathya* diet, thereby preventing from *Nidana* and further possibility of *Dushti* of *Dhatu*s and *Doshas*, which lead to tremendous results in small period of time.

The disorder of *Mutravaha Srotas* has resemblance with the description of urological disorders of modern parlance. On the basis of history and clinical presentation, the patient was diagnosed as case of CKD, its treatment with *Ayurveda* was found encouraging.^[19] In all types of urine disorders, *Vata dosha* is the prime causative factor collaborating with *Pitta* and *Kapha*. Hence, general treatment is applied considering *Tridoshas*, drug and disease,^[20] especially *Vata* and *Kapha Shamak Dravyas* were chosen for management of this case to break the *Samprapti Chakra*, hence emitting the symptoms, thus preventing kidneys from its failure to perform its vital functions. Also, the drugs chosen showed promising results in parameters pertaining to quality of life. So, it shows

that the patient must strictly follow proper dietary habits with proper *Dincharya* and *Ritucharya* which is equally important along with the conservative treatment. As the disease nowadays has to be focused due to its high prevalence rate, this case study becomes a ray of hope for the patients suffering from the same.

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