Case Study

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AYURVEDIC MANAGEMENT OF CHRONIC KIDNEY DISORDER: A CASE STUDY

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ABSTRACT

Chronic Kidney Disorder (CKD) is an abnormality of the Kidney characterized by the variation in Glomerular Filtration Rate (GFR) where proteinuria is a sensitive marker and Albumin is the most profuse urine protein. The complaints of CKD can be included under Bastigata Vikara. A 71-year male, with generalized swelling, breathing difficulty, decreased urine output associated with general weakness for 3 months with the variation in urea and creatinine which was 56. 2 mg/dl and 1.7 respectively and patient was diagnosed as grade three chronic kidney disease. This case was managed with Shotha Chikitsa Siddhanta (treatment principles of inflammatory diseases) with administration of combination of the powder of Haritaki (*Terminalia chebula)* and Shunti (*Zingiber officinale*), Butter Milk and Chandraprabha Vati. The improvement was observed with decrease in symptoms and urea and creatinine.

Keywords: Chronic Kidney Disorders, CKD, Shotha, Haritaki, Shunti, *Terminalia chebula*

INTRODUCTION

Chronic Kidney Disorders (CKD) are the structural or functional abnormalities of the Kidney with or without decreased Glomerular Filtration Rate (GFR) which manifest due to Pathological composition of Blood or Urine. Among all the investigations proteinuria is considered as an early and sensitive marker and Albumin (molecular weight [MW] = 68,000 daltons) which is the most profuse urine protein in chronic kidney disease. The consequence of CKD includes dialysis and renal transplantation which is not affordable and acceptable by majority of Indian population. The average cost of kidney transplant varies from Rs 50,000 in a government set-up to Rs 300,000 in an average private hospital. Exploration of a safe and alternative therapy is needed to prevent the progress of the disease and palliate the abnormal state of bodily humor and tissues.

The purpose of presentation of this study is to develop alternative protocol in Ayurveda in the management of CKD. Also, to establish the role of Ayurveda treatments in reduction of the blood urea and serum creatinine value in the present case study treated by Late Dr Mallika KJ, Professor, Department of Ayurveda Samhita and Siddhanta.

MATERIAL AND METHODS

A Case of 71-year male, complaining of generalized swelling, difficulty in breathing along with decreased urine output for 15 days, associated with general weakness, inability to do routine work over duration of 3 months was reported to the tertiary Ayurveda Health care unit. Patient was a known case of Hypertension and Diabetes Mellitus for 13 years and 3 months respectively. As per patient's statement, Diabetes Mellitus was diagnosed, after administering steroid for the management Nephrotic syndrome with renal dysfunction. As blood sugar was not under normal limit, he was started with Human Mixtard Insulin. The urine output was 150 ml per day and BMI was 25.40 kg/m^2.

During admission urea and creatinine was 56. 2 mg/dl and 1.7 mg/dl respectively. The Patient was diagnosed as grade three chronic kidney disease which was progressed due to improper management of 13 years of Hypertension.

As per Ayurveda as Basthi Vikara can manifest due to progressive pathogenesis of diseases involving increase of Kleda Dhatu in bodily tissues shall be managed with Shotha Cikitsa. After receiving written consent, the combination of Haritaki 50 gm and Shunti 15 gm was administered in the dose of 7.5gm with butter milk twice a day along with continuation of Medicaments wysolone 20 mg 2 tablets once a day, Injection Human mixtard 12- and 5-units morning and night respectively.

Patient was restricted with diet Butter Milk morning 250 ml and in the noon and evening soft rice with same quantity of buttermilk. Inj Human Mixtard insulin was discontinued on 2nd day of admission as blood sugar level was under normal limit, which was monitored thereafter periodically. Also, corticosteroid 20 mg was gradually tapered every 4th night and continued 10 mg per day for three months after discharge.

Water (1 liter per day) and salt (1 gm per day) was restricted during the course of treatment.

Palliative treatment continued with Chandraprabha Vati one tablet thrice a day along with the reduced dose of powder combination (3 gm noon and night) with butter milk.

RESULTS

Significant reduction of blood and other clinical parameters was observed after 60 days of Medication (Table 1).

Table 1: Changes in the Blood parameters on Medication

Test	Normal	Day 0	Day 4	Day 30	Day 40	Day 50	Day 60	Day 75
Blood Urea	15-45 mg/dl		56.2	40.9	42.2	31.1	38.7	35.9
Serum Creatinine	0.9-1.4 mg/dl	1.7	1.4	1.3	1.2	1.4	1.3	1.5
RBS	Up to 140 mg/dl	175.3		129.3	130.8	143.4		114.9
RUS		0.5		Absent		Absent		Absent
Hb	12-14 gm							
Urine albumin		Trace		+	++	++	++	
Serum Sodium	135-155 mmol/L	142.1						
Serum Potassium	3.5 to 5.5 mmol/L	3.7						
Serum Chloride	95 to 115 mmol/L	110.7						

However, increase of blood urea and creatinine was observed, when patient has left the present practice of medicine (Table 2).

Table 2: Changes in the Blood parameters on after discontinuing Medication

Test	10^{th} month	13^{th} month	14^{th} month	17^{th} month
Blood Urea	35.9	59.9	56.2	66.8
Serum Creatinine	1.5	2.1	2.3	2.5
Random Blood Sugar	114.9	PPBS 140.6	101.7	141.8
Random Urine Sugar	Absent	Absent	Absent	Absent

DISCUSSION

Symptoms in the stage three of CKD are Fatigue, Fluid retention, swelling (edema) of extremities and shortness of breath, Urinary changes (foamy; dark orange, brown, tea-colored or red if it contains blood; and urinating more or less than normal), Kidney pain is felt in their back and Sleep problems due to muscle cramps or restless legs.

According to previous research development of CKD is due to uncontrolled diabetes or high blood pressure. By keeping their glucose level under control and maintaining a healthy blood pressure can help them to preserve their kidney function. In many cases, the correct treatment and proper lifestyle can help to keep a person and their kidneys healthier longer.

However, the diseases which are not explained in Ayurveda should be tried to comprehend by the nature of the disease (dosha), the site of its manifestation and etiological factors then the treatment shall be initiated; as per Ayurveda CKD shall be understood in three ways.

i. The Congenital kidney diseases shall be understood as diseases which manifests in Bastimarma. The Basti Marma Comprises of whole renal system, mentioned as urinary bladder stated to be located amidst several organs like sthula-guda (rectum). Destruction of which causes death and partial injury leads to affliction of serious diseases. Also, Acharyas highlights about its protection from external injury and afflictions by vayu, etc. Hence the primary line of treatment of diseases involving Basti is Panchakarma i.e. Niruha and Anuvasana Basti[1].
ii. Shotha also manifests secondary to the other Chronic systemic diseases[2]. Due to progressive pathogenesis of hypertension and diabetes, renal disease pathogenesis may set in. In general, Shotha can be managed with treatments which are opposite to cause, dosha and Season. If Ama is caused then fasting, treatment which enhances metabolism and if more dosha then purificatory therapies shall be planned. Otherwise this can be treated by considering site, dosha and dushya involved in the pathogenesis[3].
iii. Due to long term usage of medication in disease which are either under control or not; improper medication of disease; drug overdose leading functional impairment of renal system. This condition shall be considered as Gara Visha and can be managed either through purification or palliative medicine[4].

In this case CKD is considered as a Nidanartakara Roga, which involves progressive pathogenesis from Hypertension and Diabetes. In Ayurveda Hypertension is interpreted in many ways like, Symptoms due to Vitiation of blood, Avarana of Vata by Vata and Vata which is vitiated entered in Rakta. Here Agnimandhya leading to Rakta Dushti is considered as pathogenesis of Hypertension. The Diabetes in Ayurveda generally Sahaja Prameha is considered as Juvenile Diabetes and Prameha as Diabetes. Prameha is explained as progressive disease which manifests due to simultaneous vitiation of all the dosha. In these diseases common things are decrease of Agni and involvement of kleda in the pathogenesis.

However, in the management of Kapha predominant Shotha, Hartiaki along with cow's urine is emphasized. Also, the other formulations enumerated in the treatment of Shotha also included Haritaki as one of the main drugs. Haritaki possess five tastes, hot in potency and eliminates dosha. It is having capacity of stimulating and enhancing the power of digestion. It also possesses the carminative and laxative effect. It also helpful in the diseases like Udavarta, Grahani Dosha, Prameha, Udara, Svayatu and other condition which involves Avarana and Srotorodha[5].

Studies are evident that *T. chebula* possesses a wide variety of action like antibacterial, antifungal, anti-viral, anti-carcinogenic, antioxidant, adaptogenic, anti-anaphylactic, hypolipidemic, hepatoprotective, cardio protective, anti-diabetic, wound healing, immunomodulatory and chemo preventive[6].

The fruits of *T. chebula* are rich in tannins (about 32 %-34 % -14 components of hydrolysable), phenolics (chebulinic acid, ellagic acid and anthraquinones), poly phenols (corilagin, galloyletc), purgative principle of anthraquinone and twelve fatty acid[7].

Significant effect of tannin - epicatechin 3-O-gallate at a dose of 5 or 10 mg/kg body weight/day for 24 days on the glomerular filtration rate, renal plasma flow and renal blood flow were observed in rats. Administration of 5 mg of procyanidin B-2 3, 3'-di-O-gallate also led to a significant increase in renal functional parameters.[8]

Fruit of *T. chebula* possessed high antioxidant activity and phenolics were found to be responsible for this activity. Aqueous extract of *T. chebula* inhibited xanthine/xanthine oxidase activity and was also an excellent scavenger of DPPH radicals[9].

Ischemia leads to increased oxidative stress and decrease in antioxidant potential of cells. Increased oxidative stress play a major role in the etiology of diabetic complications. A reduction in mean level of plasma antioxidant concentration and elevated lipid per oxidation were observed in a study. *T. chebula* at dose of 400 mg/kg showed a higher degree of elevation in catalase enzyme concentration, GSH level and significant reduction in lipid per oxidation whereas TC 4 elevated the SOD level and brought it to almost normal (22.67 ± 1.26).

T. chebula in a poly herbal formulation inhibited free radical induced hemolysis and also significantly inhibited nitric oxide release from lipopolysaccharide stimulated murine macrophages[10]. *T. chebula* fruit and seeds exhibited dose dependent reduction in blood glucose of streptozotocin induced diabetic rats both in short term and long-term study and also had reno protective activity[11].

A study has been established the treatment using *T. chebula* can prevent diabetic nephropathy caused by ischemia in diabetic rats. *T chebula* was able to control the elevated blood glucose level supporting its anti-hyperglycemic effect; the effect may be due to presence of phytoconstituents such as alkaloids, glycosides and flavonoids resulting in insulinogenic effect.

Haritaki was advised with powder of ginger as it is unctuous, promoter of digestion, aphrodisiac, hot in potency, alleviator of Vata as well as Kapha, sweet in post digestion effect, cardio-tonic and palatable. If administered in proper form and dose, it is said to combat the excess of Vata in the gastrointestinal tract and regulate the digestive functions.

Textually Vardhamana Prayoga (Gradually increasing Dose) of equal quantity of Shunti and Jaggery is explained in texts in the dose of half Phala till it reaches to five Phala for ten days in disease like Shotha, Prameha. After the medicine is digested, the patient should take food along with milk[12]. Also, if the patients are suffering from the constipation or undigested material if present in stool in the disease Shotha then jaggery added with wet ginger are the medicaments.[14]

The single and multiple doses of herbal preparation – trikatu in rabbits was proved to enhance the bioavailability and pharmacokinetics of rifampicin[13]. Ginger being a component of Trikatu and it also consists of volatile principles, by which it increases the bio availability of drug.

However, a study is also evident that the extracts of ginger improves kidney functions by inhibiting inflammatory mediators and normalizing the kidney histopathological architecture. Studies have shown that it also reduces the levels of urine protein, water intake and urine output and reverse proteinuria in nephropathy induced by CCl_4 through scavenging free radicals.[15]

In present study the butter milk was advised as a main component of diet. Butter milk was prepared with the addition of curd and water with the ratio 1:2. Morning, noon and evening the patient was advised with 250 ml of butter milk. Whereas the Buttermilk is useful in edema, piles, sprue, anuria, obstinate abdominal disease including ascites, anorexia, anemia and affliction with gara type of poison. It is also useful for alleviating the complications of oleation therapy. Daily intake of butter milk maintains health by its Agni Deepaka and Tridoshahara Property.

Because the uremia is seen in advanced renal insufficiency, the diet must take into account not only by means of the protein content but also the acid-base balance and fluid and electrolyte balance too. However, most milk and milk products are high in potassium and phosphorus, after observing the serum electrolyte skimmed buttermilk shall be advised.

In Sarangadhara Samhita, the tablet Chandraprabha was specified as Sarvarogapranashini – advisable for reducing diseases. Its Indications are the diseases of Urinary System, Diabetes, Benign and Malignant tumor. It controls all three dosha, provides benefit of Vrushya and Rasayana. Its major ingredients are Shilajatu – *Asphaltum* – 96 g, Guggulu – Indian bedelium – *Commiphora mukul* – 96 g, Sita – Sugar - 48 g, loha Bhasma – Iron Bhasma – 24 g, 12 g fine powder of each of Trivrit – *Operculina turpethum*, Danti – *Baliospermum montanum* etc.

Shilajitu and Guggulu are the drugs of choice for the disease Shotha, Mutra Roga, Prameha and Hypertension. It is astringent in taste and pungent in post digestion effect. It is neither hot nor very cold in potency. Shilajatu having the smell of cow's urine are useful all types of therapies for the disease caused by Vata Pitta and Kapha. Effectiveness of shilajatu along with the decoction of triphala is advised in all vareity of Shotha Chikitsa.

It consists of principle component fulvic acid which provides anti-inflammatory and diuretic effect. Secondarily it also possesses action as appetizer, increases metabolism and carminative. Shilajit enhances protein and nucleic acid metabolism that acts as a catalyst for the energy proving reactions. It is a strong kidney tonic.

In the present case the symptoms and blood parameters are increased after discontinuation of medicine (Table 2), hence this disease comes under palliative medicine. The diseases are palliative in which the patient will survive for a certain period by following the wholesome regimen and enjoy a little relief but even a slightest carelessness might instantaneously aggravate the condition.

CONCLUSION

The chronic kidney disease shall be understood in Ayurveda under three heading - Congenital Kidney Disease as Basthi Marma Ghata Vikara, Nidanarthakara Vyadhi – due to progressive pathogenesis of Kleda Pradhana Vyadhi and Controlled state of disease with improper management or uncontrolled state of Hypertension, Diabetes etc. The present case is a documentary evidence of successful management of CKD manifested due to Nidanartakara Samprapti by advising the treatment of Shotha. Skimmed milk is advisable as diet adjuvant in management of CKD after evaluating serum electrolyte. Context of explanation of Chandraprabhavati itself is under Prameha and Mutra Vikara hence used as palliative medicine to reduce the symptoms and rejuvenate the system. As the patient not followed regular medicine in due course of time, increase of Urea and Creatinine was observed. Hence there is a need of medication for longer course of time as the disease falls under Yapya State.

REFERENCES

1. Acharya YT, (5thed). Charaka Samhita of Agnivesha. sthana; Trimarmeeya Siddhi Adhyaya; 9th chapter, Varanasi: Chaukhambha Sanskrit Sansthan; 2001. p. 718.
2. Acharya YT, (5thed). Charaka Samhita of Agnivesha. sthana; Trishoteeya Adhyaya; 18th chapter, Varanasi: Choukhambha Sanskrit Sansthan; 2001. p. 106.
3. Acharya YT, (5thed). Charaka Samhita of Agnivesha. sthana; Shotha Chikitsa Adhyaya; 12th chapter, Varanasi: Chaukhambha Sanskrit Sansthan; 2001. p. 484.

4. Acharya YT, (5thed). Charaka Samhita of Agnivesha. sthana; Vishachikitsa Adhyaya; 23rd chapter, Varanasi: Chaukhambha Sanskrit Sansthan; 2001. p. 578.
5. Acharya YT, (5thed). Charaka Samhita of Agnivesha. sthana; Rasyana Adhyaya; 1st chapter, Varanasi: Chaukhambha Sanskrit Sansthan; 2001. p. 377.
6. Anil D. Mahajan, Nandini R. Pai. Development and Validation of HPLC Method for Quantification of Phytoconstituents in Haritaki Churna, International Journal of Chem Tech Research, CODEN (USA): IJCRGG ISSN: 0974-4290, Vol.3, No.1; 2011. p. 329-336. http://sphinxsai.com/Vol.3No.1/chem_jan-mar11/pdf/CT=53(329-336)%20JMCT11.pdf
7. Yokozawa T, Fujioka K, Oura H, Nonaka G, Nishioka I. Effects of rhubarb tannins on renal function in rats with renal failure. http://www.ncbi.nlm.nih.gov/pubmed/8336394
8. Naik GH, Priyadarsini KI, Naik DB, Gangabhagirathi R, Mohan H. Studies on the aqueous extract of *Terminalia chebula* as a potent antioxidant and a probable radio protector. Phytomedicine 2004; 11(6): 530–538. Pub Med
9. Mahesh R, Bhuvana S, Begum VM. Effect of *Terminalia chebula* aqueous extract on oxidative stress and antioxidant status in the liver and kidney of young and aged rats. Cell Bio chem Funct 2009; 27(6): 358–363. Pub Med.
10. Kannan VR, Rajasekar GS, Rajesh P, Balasubramanian V, Ramesh N, Solomon EK, *et al*. Anti-diabetic activity on ethanolic extracts of fruits of *Terminalia chebula* Retz. Alloxan induced diabetic rats. Am J Drug Discov Dev 2012; 2: 135–142.
11. Senthilkumar GP, Subramanian SP. Biochemical studies on the effect of *Terminalia chebula* on the levels of glycoproteins in streptozotocin-induced experimental diabetes in rats. J Appl Biomed 2008; 6: 105–115.
12. Acharya YT, (5thed). Charaka Samhita of Agnivesha. sthana; Shothachikitsa Adhyaya; 12th chapter, Varanasi: Chaukhambha Sanskrit Sansthan; 2001. p. 486.
13. Effect of trikatu, an Ayurvedic prescription, on the pharmacokinetic profile of rifampicin in rabbits – Research Gate. http://www.researchgate.net/publication/12934854_Effect_of_trikatu_an_Ayurvedic_prescription_on_the_pharmacokinetic_profile_of_rifampicin_in_rabbits [accessed Nov 12, 2015].
14. Acharya YT, (5thed). Charaka Samhita of Agnivesha. sthana; Shothachikitsa Adhyaya; 12th chapter, Varanasi: Chaukhambha Sanskrit Sansthan; 2001. p. 485.
15. Heidi Stevenson, Gingers many Evidence Based Health Benefits Revealed, http://www.greenmedinfo.com.

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