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REVIEW ARTICLE

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VRUKKAROGA & RENAL DISEASE: A CRITICAL REVIEW

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Abstract

10% of the population worldwide is affected by chronic kidney disease & millions of people die each year due to kidney disease. Number of cases of kidney failure is increasing disproportionately in developing countries like India as number of elderly people is increasing. Kidney disease is one of the common causes of premature death worldwide. Role of medical sciences like Ayurveda in the management of renal disorders is neglected; hence Use of traditional medicines of *Ayurveda* in the management of renal disorders is the need. According to modern science renal disorders are considered as diseases of urinary system; But according to *Ayurveda* kidneys or *Vrukka* are not related with urinary system in the body as they are the part of *Medovaha srotas*. *Charaksamhita*, *Sushrutsamhita*, *Ashtangsamgraha* & *Ashtanghridaya* have not mentioned *Vrukkaroga* (Renal disease) anywhere in the texts but concepts about formation of urine & diseases related with urine are well explained in the texts; while *Bhaishajyaratnavali* includes a separate topic named *Vrukkarga*. Current paper includes an innovative approach towards explanation of *Hetu* (Cause), *Samprapti* (Pathogenesis), *Lakshana* (Symptoms) & *Chikitsa* (Treatment) of renal disorders as per *Ayurveda*.

Keywords: Vrukkaroga, Chronic Kidney Disease.

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INTRODUCTION

Origin of *Vrukka* (Kidneys)^[1]

The vrukkas (Kidneys) are formed by the essence of blood & fat (*Rakta & med dhatu*)

Acharya Charaka & Acharya Vagbhata mentioned site of *Vrukka* as *Koshta*, but *acharya Shusruta* has not mentioned *Vrukka* in the definition of *Koshtha*^{[2][3][4]}.

According to *Acharya Sushruta*, *Meda* carrying channels are two, their root is both sides of waist & *vrukka*^[5].

According to *Acharya Charaka*, *Medovaha srotas* have their root in *Vrukka & Vapavahan(Omentum)*^[6].

Concepts of Urine formation according to *Ayurveda*.

Though situated its mouth downwards, the urinary bladder gets filled from all its sides through the minute channels carrying urine, which are secreting without break continuously throughout day and night^[7].

Urine carrying channels existing in intestines fill the bladder with urine constantly as rivers do for sea; thousands of opening of these channels are not visible due to minuteness. Bladder is filled up with oozing of urine day & night, by the channels from the region between stomach and intestines. When a new earthen pot kept in the water tank, which is surrounded by the water up to the neck of pot. Is slowly filled with water from sides into

the pot, in the same way bladder is filled with urine^[8].

Vit & Mutra (Faeces and urine) are formed as a *Kitta Bhaga* (Waste products) of food^[9].

Samana vayu is located near the *Agni(Digestive fire)* & maintains its normal functions. It also moves inside the large intestine, channels of the *Doshas, Malas, Shukra, Artava* and *Ambu*; supports them in their functions, checks the functions like retaining food, digestion, separation of essence & waste (*Sara & Kitta*) & moving the waste products downwards. *Apan Vayu* is located in the rectum, moves along the urinary bladder, pelvis, penis, scrotum & groin, attends the elimination of faeces, urine, semen, menstrual fluid, foetus & such other functions^[10].

Pitta situated between *Pakwashaya & Amashaya* by invisible mechanism, digests four types of foods & drinks, separates *Dosha, Rasa, Vit&Mutra*. *Pitta* by staying there itself supports remaining seats of *Pitta* with its innate power^[11].

Cause of diseases related with urine

Seat of urinary disorders is *Basti* (urinary bladder), it is described as a *Marma*(vital part), though having its mouth below, it receives the fluid known as *Mutra*(urine) from thousand & odd innumerable minute channels known as *Mutravaha Nadi* constantly, just like a new mud pot kept immersed in water^[12].

If *Apan Vayu* get vitiated it causes severe diseases of urinary bladder^[13].

When *Vayu* is favourable in bladder, urine is excreted properly; but when it is in opposite direction various disorders appear. Types of *Mutraghata*, *Prameha*, *ShukraDushti*&*Mutravikruti* all these are located in bladder^[14].

Cause of Mutravaha Srotodushti.

Mutravaha srotas are affected due to drinking of water, having food & coitus during urge for micturition, suppression of urge for micturition, suppression of urge for micturition particularly when wasted & wounded^[15].

Root of Mutravah Srotas& effect of injury.

Urine carrying channels are two, their root being urinary ladder & penis; if injured it

causes hardness of urinary bladder, retention of urine & stiffness of penis^[16].

Root of Mutravaha Srotas& Symptoms of Vitiatio.

Mutravaha Srotas having their root in *Basti* & *Vankshana*. Symptoms of their morbidity are these such as-excessive urination, excessive obstruction or suppression, vitiated, diminished or frequent thick urine with pain^[17].

Causes of Renal Disorders (Vrukkaroga) according to Ayurveda.

Over intake of cold food items or over use cold measures causes diseases related with kidney. *Vrukkarogas* are also seen as a complication of *Masurika*, *Visuchika*, *Aamvat* & *Puranjwara*. Cause of renal disorders is mainly change in constituency of *Rakta*^[18]

Sampraptigathaka of vrukkaroga

Table no: 1: Samprapti Ghataka

<i>Dosha</i>	<i>Vatadosha</i>
<i>Dushya</i>	<i>Dhatu-Medadhatu, Raktadhatu</i> <i>Upadhatu-Sira Mala-Mootra</i>
<i>Agni</i>	<i>Mandagni</i>
<i>Marga</i>	<i>Madhyam rogmarga(Marmagat vyadhi)</i>
<i>Srotas</i>	<i>Medovaha, Mootravaha</i>
<i>Srotas dusthi prakar</i>	<i>Atipravritti, Sang, Vimargagaman</i>
<i>Adhishthan</i>	<i>Basti</i>
<i>Vyadhi swabhava</i>	<i>Chirkari</i>

Embryological development of Kidney.

In embryological stage, development of nephrons (nephrogenesis) occurs through several stages like classical epithelial/mesenchymal type of interactions. Nephrogenesis continues up to the late fetal period (GA week 34-35). In the fetal stage, kidney does produce urine in very less quantity. After birth the glomerular filtration rate (GFR) increases rapidly due to a postnatal drop in the kidney vascular resistance and an increase in renal blood flow. The urinary system is developmentally and anatomically associated with genital development, often described as the "Urogenital System". Nephron development involves 3 pairs appearing in sequence within intermediate mesoderm during development namely Pronephros, Mesonephros and Metanephros¹⁹.

Chronic Kidney Disease: A view.

A condition in which hampering of normal kidney functions is called as CKD. Hemodialysis is most common form of the treatment in the conventional medicine. Renal replacement is another option which may offer endurance of some years in patients with ESRD²⁰. Though both these treatments are effective, they are not affordable and approachable, hence not acceptable by Indian population. Etiology of CKD in India is diabetic nephropathy (31.2%), undetermined (16.4%),

chronic glomerulonephritis (13.8%), hypertension (12.8%), tubulointestinal disease (7%), obstructive uropathy (3.4%), autosomal dominant polycystic kidney disease (2.5%), renovascular diseases (0.8%), kidney transplant graft loss (0.3%), others (11.7%). Mostly diabetes mellitus and hypertension together account for most of the patients being treated for ESRD. Clinical manifestation of CKD include fluid, electrolyte and acid base disorders, distributed potassium homeostasis, metabolic acidosis, disorders of calcium and phosphate metabolism, cardiovascular abnormality include ischemic heart diseases, heart failure, hypertension, left ventricular failure & pericardial diseases. Hematological abnormalities include anemia, neuromuscular abnormalities, GIT & nutritional abnormalities, endocrine and metabolic disturbances etc²¹.

Stages of chronic kidney disease²².

CKD stage 0: GFR is above 90ml/min per 1.73m², with risk factors for CKD.

CKD stage 1: GFR is above or equal to 90ml/min per 1.73m². With demonstrated kidney damage (eg. Persistent proteinuria, abnormal urine sedimentation, abnormal blood & urine chemistry, abnormal imaging study)

CKD stage 2: GFR is 60-89ml/min per 1.73m².

CKD stage 3: GFR is 30-59ml/min per 1.73m².

CKD stage 4: GFR is 15-29ml/min per 1.73m².

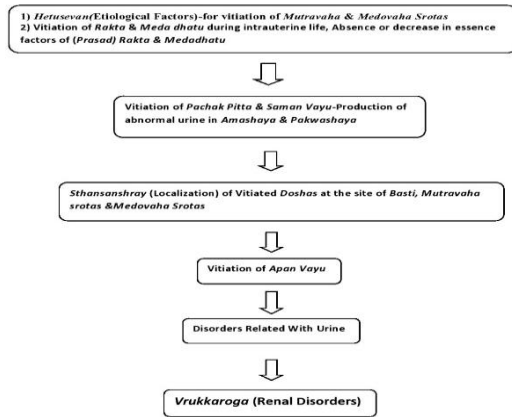


Fig: Samprapti of Vrukkaroga (Renal Disorders Ayurvedic Management of Renal Disorders

Treatment of Renal disorders can be done on the following basis.

- 1) *Nidana Parivarjana* (Avoidance of causative & precipitating factors of disease)- Avoidance of causative & precipitating factors of *Mutravaha & Medovaha srotas*.
- 2) The *vrukkas* (Kidneys) are formed by the essence of blood & fat (*Rakta & meda dhatu*). *Sira* plays vital role in transport of urine, *Sira* are *Upadhatu* of *Rakta*; hence treatment of renal disorders should be done with *Raktaprasadkara* drugs (*Dravya*).
- 3) Treatment of vitiations of *Saman Vayu* is *Shaman*^[23]; formation of urine is from food with the help of *Pachak Pitta & Saman Vayu*. *Saman Vayu* is near to *Agni*; hence treatments like *Agnideepan & Aampachan* are useful in renal disorders.
- 4) *Apan Vayu* should be led downwards^[24]; Seat of all the diseases related with urine is *Basti* & cause of diseases related with urine is movement of *Vayu* in opposite direction.

Hence for both these problems & treatment of *Apan Vayu, Basti* is the best treatment.

5) Drugs from various groups (*Gana*) in

Charaksamhita can be used according to the condition of the patient:-

Mutravirechaniya Gana^[25]-*Vrikshadani, Gokshur, Vasuk, Shira, Pashanbheda, Darbha, Kusha, Kash, Gundra, Itkatmul*; these ten are *Mutravirechaniya* (Diuretics-helps in excretion of urine). Action of these drugs can be expected on the Distal convoluted tubules.

Mutravirajniya Gana^[26]- *Padma, Utpala, Nalina, Kumuda, Saugandhika, Pundarika, Shatapatra, Madhuka, Priyangu & Dhataki*; these ten are urinary depigmenters. Action of these drugs can be Expected over the Loop of henle.

Mutrasangrahaniya Gana^[27]- *Jambu, Amra, Plaksha, Vata, Kapitana, Udumbara, Ashwattha, Bhallataka, Ashmantaka, Somavalka*; these ten are antidiuretics. Action of these drugs can be expected over the Glomerular Filtration.

6) Treatment of *Vrukkaroga* according to *Bhaishajyaratnawali* is as follows^[28].

a) *Raktamokshan* (Bloodletting)- After proper examination & considering (*Bala*) of the patient bloodletting procedure should be done with *Shring, Alabu, Jalauka* or *Siravyadha* according to type *Dosha* vitiations as *Vata, Pitta* or *Kapha*. *Sira* are *Upadhatu* of *Raktadhatu* &

plays important role in transport of urine hence *Raktamokshan* (Bloodletting) is important in renal disorders.

b) Virechan (Therapeutic purgation) & Swedan-should be done appropriately.

c) Drugs increasing formation of urine (Mutrala)-should be administered.

d) Drugs & dietary regimen causing purification of blood, increasing potency of *Rasa, Rakta Dhatus*, increasing strength of *Agni* should be taken. (It reduces vitiation of *Saman Vayu & Pachak Pitta*).

e) As Mercury is nephrotoxic & increases diseases of kidney; formulations prepared from mercury should be avoided in renal diseases.

f) If patient is suffering from obstruction of faeces or constipation *Sneha Basti* (Enema with oil or ghee) should be given, in case of calculus it should be removed surgically.

g) Sarvatobhadra Vati

Dosage- 2 tablets of 125 mg each (2 *Ratti-250mg*)- Morning & Evening

Anupan (Vehicle)- *Varuntwak Kwath*

Indications- All kidney disorders & diseases related with *Basti*.

h) Maheshwar Vati

CONCLUSION

From above references following few conclusions can be made according to *Ayurveda* literature.

Dosage- 1 tablet of 250 mg each (2 *Ratti-250mg*)- Morning & Evening

Pathya- Cow milk & Rice

Indications- *Vrukkarog, Jalodara, Pandu, Vishamjwara, Shotha, Moorcha*

l) *Rasayana* (Promotive treatment) should be taken.

j) In case of renal diseases (*Vrukkarog*) life of the patient should be preserved by careful examining factors like *Kala & Bala*. Treatment should be given under close observation of experienced *Vaidya* & foods which are easily digestible.

7) Treatment of renal disorders can be summarised at follows.

Table no: 2: Treatment of renal disorders

1	<i>Nidana Parivarjana</i>
2	Biopurification (<i>Samshodhana</i>)- <i>Raktamokshan, Basti</i>
3	<i>Samshamana</i> (Palliative Remedies)- <i>Deepan, Aampachan, Maheshwar vati, Sarvatobhadra vati, Mutravirechaniya Gana</i>
4	<i>Pathyavyavastha</i> (Health promoting regimen)- <i>Rasayana, Easily digestible food</i>

- *Mala & Mutra* (Faeces & Urine) are the waste products of food.
- Formation of urine occurs in *Amashaya & Pakwashaya*. Urine is Carried from

there upto the *Basti* by minute channels.

- Digestion of foods produces two parts; first is *Sarabhaga*(Essence part)& second is *Kittabhaga* (Waste product). Formation of urine & Faeces is from *Kitta part*. This process occurs at *Amashaya & Pakwashaya* & done by *Pachak Piita & Saman Vayu*.
- Ancient *Ayurveda* texts has mentioned exactly & correctly about site, appearance & number of kidneys (*Vrukka*) but explained its relation with *Medadhatu* & having no relation with formation of urine.
- *Hetusevan* causes vitiation of *Medovaha & Mutravaha srotas*. Vitiation of *Mutravaha Srotas* causes diseases related with urine formation.
- Vitiation *Medovaha Srotas* may cause diseases related with *Vrukka* or kidney; as it is a root of *Medovaha Srotas*.

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