

## NIDAN PANCHAKA OF CHRONIC RENAL FAILURE – A SURVEY STUDY

Rucha Joshi<sup>1</sup>, Madhuri Bhide<sup>2</sup>, Yashashree Joshi<sup>3</sup>

<sup>1</sup>PG Scholar, <sup>2</sup>Prof. (MD PhD), <sup>3</sup>Prof. (MD PhD)  
Department of Samhita and Basic Principles of Ayurveda,  
Bharati Vidya Peeth College of Ayurved, Pune,  
Maharashtra, India

Email: [dr.joshirucha@gmail.com](mailto:dr.joshirucha@gmail.com)

### ABSTRACT

Chronic Renal Failure (CRF) refers to an irreversible deterioration in renal function, which develops over a period of years. CRF is considered when glomerular filtration rate (GFR) falls below 30 ml/min. The conventional approach of management includes dialysis and renal transplantation, which are tedious and unaffordable by Indian population. Thus the *Nidanpanchaka* of renal failure is selected for study in Ayurveda perspectives. 100 pre diagnosed CRF patients irrespective of their age are thoroughly examined. Hetus were studied with keen observation of their diet and lifestyle. Sign and symptoms present in the patient were observed. The patients were divided in to two groups such as patients taking only allopathic treatment and patients taking allopathic treatment along with Ayurvedic treatment. *Ajirna / Aam, vikrutkleda, vayu pratilomatva* if persist for long duration are responsible for improper urine formation and Renal failure. The collected data was statically analysed to obtain role of *aam, kleda* and *pratilomavayu* in CRF.

**Keywords:** CRF, *Aam, Kleda, Pratilomvayu*

### INTRODUCTION

*Ayurveda* does not individually suggest the causes and treatment for CRF. The morbidity of the diseases is grave. The CRF patients treated with *Ayurveda* may prolong dialysis or reduce its frequency. It also maintains the stage without further damage. This enhances their quality of life through *Ayurveda*. The CRF can be studied

with these baselines to define precise causes for pathogenesis (*dosha dushti*) as well the preliminary symptoms are important to maintain the disease at primary level rather than leading in to end stage. Thus it will aid in prevention and avoid further multisystem involvement.

**Prakrut mutrautpatti -**

Formation of urine mainly occurs from the *kitta* portion of *ahara*. The food we eat and drink gets digested and after digestion gets converted in to *sara* portion and *kitta* portion. The action of separation of *sara* and *kitta* portion occurs in *grahani* that is *Aampakwashaya antarat*<sup>1</sup>. Thus there is difference in the thought process of disease development between Ayurveda and biomedical science. Digestive system that is *aampakwashaya* is initially responsible for disease development rather than kidney.

#### **Factors responsible for formation of urine are -**

**Prakrut Pachan** - According to *Ayurvedic* fundamentals the formation of urine begins from the *aampakwashaya mdhya* that means *grahani*. Hence any initial disorder or dysfunction in the metabolism may further lead to *vikrut mutra utpatti*. The same principle is reflected in the *jeerna aahar lakshana*. As *Acharaya* says, inference of *prakrut pachan* can be concluded from *samyaka mutra pravrutti*.

**Prakrut Aahara Rasa** – Attributes of *rasa* are *pram sukshma* that means very tiny particles which can easily flow through the *sukshma srotas*<sup>2</sup>. It should be *tanu, dravanusri, and niraam*. This type of *aahara rasa* flows continuously through every *avayava, dhatu, malashaya*.

**Prakrut Kleda** – As *Rakta kleda* and *Mamsa kleda* are mentioned in the *pittaja nanatmaja vikaras*<sup>3</sup> which indicate that formation of *kleda* takes place due to increase of *pitta* which cannot be named as any disease but condition prior to disease. The *kleda* which is formed all over the body is carried out with the help of *mutravaha srotas* to *basti* for elimination.

**Prakrut Vayu** - If *vayu* moves unimpaired and located in its own site as well as in the natural state then a person lives for hundred years without any disease. Thus the *avyahata gati* of *vayu*

<sup>4</sup> is very essential if there is any obstruction to that *gati* will results in many diseases.

There are some factors which, in the state of their wholesome combination, are responsible for the creation of living being, in the state of their unwholesome combination are responsible for various diseases<sup>5</sup>.

Thus, after referring the many references related to *mutrautpatti* it has been inferred and conclude that following *bhav padarthas* are responsible for *mutra vikruti* also.

**Aam** - Due to etiological factors formation of *aam* takes place. This *aam* is carried through *rasa* and sited to all proximal and distal tissues of the body. Since the *rasa* is *saam* where ever it will carried it will create the different pathogenesis in different organs<sup>6</sup>. Whenever it is associated with *mutravaha srotas* it will percolate with *mutravikruti*<sup>7</sup>. In CRF, Glomerular Filtration Rate is less than 5ml/min. Glomerular filtration rate depends upon liquidity and texture of the fluid coming as a filtrate. It should be protein and fat free. Approximate size of protein 70 *kleda* can be filtered. Presence of large amount of protein albumin in urine is pathological condition.

**Kleda** - As the properties of *kleda* are *snigdha, guru, picchila, drava, sara, manda* permutations and combinations of these properties responsible for various effects or phenomenon in the body. There are mainly 4 stages of *vikrut kleda* such as *Ardrikaran Vikledan, Atikledan, Utkledan*. These *vikruties* are in ascending order of progression of diseases. The *aprpakwa aam* and *kleda* alongwith vitiated *vata pitta* and *kapha* and *meda* causes the obstruction in the *basti* and stays there will finally result in the *mala-sanchaya* and *asadhyata*. Diabetic Nephropathy is common cause of End Stage of Renal Failure. Pathologically it includes thickening of Glome-

ular Basement Membrane and accumulation of matrix material in the mesangium which will result in reduced Glomerular Filtration Rate and finally in to Renal Failure.

#### **Pratiloma Vayu-**

If any of the *vata* is deranged it will either cause pathology related to its place or action. If persist for longer duration it may result in *asadhya awastha* and finally in death<sup>8</sup>. *Avyahat gati* of *vayu* can be correlated with net filtration pressure as said in biomedical science the net filtration pressure is 10 mm of Hg. This pressure is very essential for the maintenance of GFR. If GFR is reduced then it may cause renal failure.

**Teekshna Aushadhi** - *Teekshana Aushadhi* is one of the etiological factors for the diseases of *mutravaha srotas*<sup>9</sup>. Toxic renal damage may occur by variety of mechanisms. Very commonly, drugs contribute to development of acute tubular necrosis as one of multiple insults. Nu-

merically reactions to NSAIDs and ACE inhibitors are most important.

#### **Aim –**

Establishment of *Nidan Panchaka* of Chronic Renal Failure with Ayurvedic Perspective.

#### **Objectives –**

To find out *Nidanpanchak* of Renal Failure in Ayurvedic perspective.

#### **Inclusion criteria –**

100 pre diagnosed CRF patients of all age group were considered.

#### **Exclusion Criteria –**

1. Renal failure due to Trauma.
2. Patients having cancer, congenital anomalies, morbid conditions.

#### **Materials and Methodology -**

100 pre diagnosed CRF patients irrespective of their age are thoroughly examined. Hetus were studied with keen observation of their diet, lifestyle. Sign and symptoms present in the patient were observed.

#### **Observations-**

**Table 1** - Details of Hetu with Percentage

Hetu - Aamaja	Percentage
<i>Vidahi aahar</i>	73%
<i>Ratri jagaran</i>	50%
<i>Adhyashan</i>	49%
<i>Prushit aahar</i>	45%
<i>Vishamashan</i>	11%
Hetu kledaja	Percentage
<i>Abhishyandi aahar</i>	78%
<i>Viruddha aahara</i>	78%
<i>Avyayam</i>	73%
<i>Diwaswap</i>	35%
<i>Atyambupan</i>	53%
<i>Lavan rasa adhikya</i>	27%
Hetu pratiloma vayu	Percentage
<i>Yanayan</i>	32%
<i>Mutra veg vidharan</i>	23%
<i>Mala veg vidharan</i>	13%
<i>Kshudha veg vidharan</i>	9%

Hetu teekshna aushadh	Percentage
Anti-Hypertensive drugs	93%
Anti-Diabetic drugs	45%
Diuretics	39%
Painkillers	13%

**Lakshanas** – The symptoms were divided in to 3 steps of chronological order as A, B, C. A and B denotes all the symptoms in *sanchay* and *prakopa awastha* of *doshas*. The ‘C’ denotes the

vyakti and *bhed awastha*. For the frequency of the symptoms the symptoms divided according to severity that is 1+ which indicates once a week, 2+ means twice a week.

**Table 2:** Detail of Symptoms with Percentage

Symptom	Absent	A (%)	B (%)	C (%)	1+ (%)	2+ (%)	3+ (%)
<i>Asharddha</i>	28	15	37	20	67	05	00
<i>Aruchi</i>	27	16	38	19	65	08	00
<i>Shwasa</i>	17	00	10	73	75	08	00
<i>Tiktasyata</i>	76	05	14	05	24	00	00
<i>Amlasyata</i>	87	02	08	03	13	00	00
<i>Uroudardaha</i>	59	24	14	03	35	06	00
<i>Hrullas</i>	15	22	54	08	78	06	00
<i>Angagaurav</i>	62	11	24	03	35	03	00
<i>Anagamarda</i>	73	10	14	03	24	03	00
<i>Jwar</i>	86	06	08	00	14	00	00
<i>Pandu</i>	67	03	27	03	33	00	00
<i>Chardi</i>	28	13	45	14	62	10	00
<i>Amlapitta</i>	09	63	25	03	80	11	00
<i>Adaman</i>	26	28	45	01	68	06	00
<i>Aatop</i>	37	24	39	00	59	04	00
<i>Ahovatanuloman</i>	60	14	26	00	38	02	00
<i>Udarshool</i>	63	14	22	01	32	05	00
<i>Udagarbahulya</i>	84	03	13	00	14	02	00
<i>Grahani</i>	69	09	21	01	28	03	00
<i>Bhrama</i>	88	03	04	05	11	01	00
<i>Timir</i>	89	01	06	04	10	01	00
<i>Sandhishool</i>	84	14	02	00	16	00	00
<i>Sandhi shoth</i>	88	11	01	00	12	00	00
<i>Ubhaypada shoth</i>	25	02	12	61	71	04	00
<i>Mukhasoatha</i>	68	02	05	25	31	00	01
<i>Sarvangasoath</i>	95	01	03	01	04	01	00
<i>Annabhilasha</i>	62	10	25	03	37	01	00
<i>Bharkshaya</i>	51	00	14	35	48	00	01
<i>Anucchata</i>	62	02	12	24	36	01	01
<i>Daurbalya</i>	33	01	11	48	64	04	01

## DISCUSSION

As *Nidanpanchaka* of CRF is not mentioned in Samhitas, hetus found from the survey study and references found in Samhitas are taken in to consideration and an effort has done to establish *Nidanpanchaka* of CRF.

### Nidan –

**Aam nirmitikar Hetu** – *adhyashan*(49%), *vihsamashan*(11%), *ratri jagaran* (50%), *vidahi* (73%), *paryushit* (45%)

**Kleda vriddhikar Hetu** - *lavan rasa* (27%), *Avyayam* (73%) *abhishyandi* (78%), *atyambupan* (53%), *viruddha aahara*(78%), *Diwaswap* (35%).

**Vayu pratilomakar Hetu** – *yanayan* (32%), *veg vidharan* (27%)

**Teekshana Aushadhi Hetu.** – Anti-Hypertensive drugs (93%), Anti-Diabetic drugs (45%), diuretics (39%), painkillers (13%)

### Purvarupa -

From this data, the various *purvaroopas* obtained such as *Asharddha*(72%), *Aruchi* (73%), *Tiktasyata* (24%), *Amlasyta* (13%), *Angamarda* (27%), *Amlapitta* (91%), *Grahani* (31%), *Adhaman* (74%), *Aatop* (64%), *Anga gaurav* (38%).

### Rupa –

Symptoms includes *Shwasa* (83%), *Ubhaypadashoth* (75%), *Mukhashoth* (32%), *Chardi* (72%), *Bharkshaya* (49%), *Hrullas* (84%), *Anannabhilasha* (38%), *Daurbalya* (69%), *Pandu* (33%),

### Upashay –

The survey study reveals that patients taking Ayurvedic treatment alongwith dialysis showed markedly reduction in serum creatinine and serum urea levels in certain symptoms. This confirms that Ayurvedic treatment like *aam-pachanadi*, *deeepan*, *shodhan*, *langhan* etc are essential to break the *samprapti*.

### Samprapti –

The factors such as *aam*, *kleda*, and *vitiated doshas* get stagnated in the *muravaha srotas* results in the symptoms like *mutrasanga*, *mutrakruccha*. Whenever *aam* associated with *mutravah srotas* it will percolate with *mutra vikruti*. When this *aam* and *vikrut kleda* steps forward in the kidney results in the obstruction in the free flow filtrate, *Dusti of rasa*, *Rakta*, *Aam* and changes in attributes of *pravahi kleda* proceeds towards the formation of *upalepan*. This *upalepan* reflects as the stagnation type of *samprapti* of CRF.

### Analysis of Symptoms with Dialysis –

Certain symptoms were reduced after dialysis that means those have significant association with dialysis. These symptoms are *Asharddha* (p – 0.000), *Aruchi* (P – 0.000), *Anannabhilasha*, *Daurbalya*, *chardi*, *grahani*, *amlapitta*, *aatopa*, *tiktasyata*, *Ubhayapadashoth*, *Mukhashoth*, *Shwas*. To rule out role of *Aam* and *Kleda* in the pathogenesis of CRF the analysis between symptoms found in patient and dialysis has been done. There is significant association p -0.000 between dialysis and *aruchi* symptom indicates that higher percentage of cases have *aruchi* symptom among those on dialysis.

**Table 3:** Analysis of Symptoms with Dialysis

Symptoms	Dialysis p value	Symptoms	Dialysis P value	Symptoms	Dialysis P value
<i>Asharddha</i>	0.000	<i>Uroudardaha</i>	NS	<i>Aatopa</i>	0.03
<i>Aruchi</i>	0.000	<i>Hrullas</i>	0.08	<i>Ubhaypada shoth</i>	0.000
<i>Daurbalya</i>	0.002	<i>Amlapitta</i>	0.08	<i>Mukha Shoth</i>	0.01

<i>Anga gaurav</i>	NS	<i>Grhani</i>	0.05	<i>Shirashool</i>	0.08
<i>Annabhilasha</i>	0.036	<i>Chardi</i>	0.002	<i>Pratishaya</i>	NS
<i>Angamarda</i>	NS	<i>Amlasyata</i>	NS	<i>Bharkshaya</i>	NS
<i>Jwar</i>	NS	<i>Tikasyata</i>	0.014	<i>Bhrama</i>	NS
<i>Anucchata</i>	NS	<i>Adhaman</i>	NS	<i>Shwasa</i>	0.000

### Analysis of Symptom with Serum Creatinine level

There is significant association between serum creatinine level and *aruchi lakshans* indicates that higher percentage of cases having *aruchi*

among who have higher serum creatinine levels. Like *Aruchi* the significance is observed in other symptoms such as *Daurbalya, Annuchahata, Chardi, Tikasyata, Shwas and Ubhay-padashoth.*

**Table 4:** Analysis of Symptom with Serum Creatinine level

Symptoms	Serum creatinine P value	Symptoms	Serum creatinine P value	Symptoms	Serum creatinine P value
<i>Ashrddha</i>	NS	<i>uroudardaha</i>	NS	<i>Aatopa</i>	NS
<i>Aruchi</i>	0.05	<i>Hrullas</i>	NS	<i>Ubhaypada shoth</i>	0.008
<i>Daurbalya</i>	0.004	<i>Amlapitta</i>	NS	<i>Mukha Shoth</i>	NS
<i>Anga gaurav</i>	NS	<i>Grhani</i>	NS	<i>Shirashool</i>	NS
<i>Annabhilasha</i>	NS	<i>Chardi</i>	0.02	<i>Pratishaya</i>	NS
<i>Angamarda</i>	NS	<i>Amlasyata</i>	NS	<i>Bharkshaya</i>	0.05
<i>Jwar</i>	NS	<i>Tikasyata</i>	0.014	<i>Bhrama</i>	NS
<i>Anucchata</i>	0.04	<i>Adhaman</i>	NS	<i>Shwasa</i>	0.000

### Analysis of Symptom with Serum Urea level:

To rule out role of *Aam, kleda, and srotorodh* in the pathogenesis of CRF the analysis between symptoms and serum urea level has been done. There is significant association between serum urea level and *aruchi lakshans* indicates that higher percentage of cases having *aruchi* among

those Anti-Diabetic drugs have higher serum urea levels.

Like *Aruchi* significance is observed in symptoms like *Asharddha, Daurbalya, Annabhilasha, anucchahata, Amlapitta, Grahani, Chardi, Tikasyata and Aatop.*

**Table 5:** Analysis of Symptom with serum urea level

Symptoms	Serum urea P value	Symptoms	Serum urea P value	Symptoms	Serum urea P value
<i>Ashrddha</i>	0.004	<i>uroudardaha</i>	NS	<i>Aatopa</i>	0.01
<i>Aruchi</i>	0.001	<i>Hrullas</i>	NS	<i>Ubhaypada shoth</i>	0.000
<i>Daurbalya</i>	0.006	<i>Amlapitta</i>	0.01	<i>Mukha Shoth</i>	0.003
<i>Anga gaurav</i>	NS	<i>Grhani</i>	0.02	<i>Shirashool</i>	NS
<i>Annabhilasha</i>	0.009	<i>Chardi</i>	0.009	<i>Pratishaya</i>	NS
<i>Angamarda</i>	NS	<i>Amlasyata</i>	NS	<i>Bharkshaya</i>	0.01
<i>Jwar</i>	NS	<i>Tikasyata</i>	0.004	<i>Bhrama</i>	NS
<i>Anucchata</i>	0.08	<i>Adhaman</i>	NS	<i>Shwasa</i>	0.000

The group of symptoms found significant with both serum creatinine and serum urea are *Aruchi, Daurbalya, Chardi, Tiktasyata, Shwas, Ubhaypadashoth, and Bharkshaya*.

#### **Statistical analysis between patients taking Ayurvedic treatment along with allopathic and patients consuming only allopathic treatment-**

The comparison of these two groups is done with the help of serum levels and *lakshanas*. To rule out role of *pachanadi* treatment in the CRF, analysis between these two categories and serum levels has been done. The type of treatment taken from the patients was classified in to categories such as *Aampachan, Kledahara, Vatanuloman, Shodhan* followed by *Rasayan*. Statistically it is proved that P - 0.000 for serum creatinine and P - 0.000 for serum urea indicate that patients who are consuming Ayurvedic along with allopathic treatment have shown lower levels of serum creatinine and serum urea as compared to patients who are consuming only allopathic treatment.

#### **Statistical Analysis of symptom with serum creatinine and urea levels in patients consuming Ayurvedic treatment-**

Statistically it is proven that p value 0.002 for serum creatinine, p value 0.018 for serum urea and *asharddha* symptom indicates that patients who are consuming Ayurvedic treatment along with allopathic treatment have shown lower levels of serum creatinine and serum urea. There is also significance with other symptoms like *Aruchi, Hrullas, Angagauravata, Angamarda, Chardi, Amlapitta, Adhaman, Aatop, Annabhilasha, Adhovatanuloman, Daurbalya*.

### **CONCLUSION**

- CRF is *Santarpanjanya Vyadhi*, with blends of *dushti of Rasavaha srotas, Annavaha,*

*Udakavaha, Medovaha, Mutravaha srotas* and mainly *Kaphaja* among *Tridoshas*.

- *Aam, kleda, Pratiloma vayu and Teekshana Aushadhi* are the four main *hetus* for the formation of CRF. *Amlapitta, hrullasa, chardi* if persist in patient is the cardinal sign of progression towards CRF.
- *Aamaj lakshanas* like *Asharddha, Aruchi, Tiktasyata, Anannabhilasha* are seen in most of the patients and have significant p value with serum creatinine and urea levels.
- *Aam, Kleda, Pratilom Vayu, and Srotorodh* create spectrum of diseases such as *Grahani, Amlapitta, Udar, Pandu* persist as *Vyadhi-sankar* or CRF.
- In this survey study the patients consuming *Ayurvedic* treatment alongwith *Allopathic* treatment has shown significant reduction in severity of CRF.

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