



## Clinical Research

## Effects of Ayurvedic treatment on 100 patients of chronic renal failure (other than diabetic nephropathy)

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## Abstract

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. The conventional approach of management includes dialysis and renal transplantation, which are not affordable by Indian population mainly due to economic reasons. Therefore, exploration of a safe and alternative therapy is needed, which proves to be helpful in reducing the requirement of dialysis and in postponing the renal transplantation. A clinical study of 100 patients of CRF was conducted at OPD and IPD of PD Patel Ayurved Hospital, Nadiad. They were given *Niruha basti* of *Punarnavadi kvatha* daily with oral medicaments including *Goksuradi guggulu*, *Rasayana churna*, and *Varunadi kvatha* for 1 month period. The patients of CRF, having diabetic nephropathy as a cause, were excluded since a separate study for diabetic nephropathy is being conducted. Results were analyzed statistically using the “t” test. The symptoms and signs, serum creatinine, blood urea, urine albumin level were reduced, which were found to be statistically highly significant on “t” test.

**Key words:** Ayurveda, chronic renal failure, *Niruha basti*

## Introduction

Chronic renal failure (CRF) is a global threat to health in general and for developing countries in particular because therapy is expensive and lifelong. In India, 90% patients cannot afford the cost. CRF refers to an irreversible deterioration in renal function which classically develops over a period of years. Initially, it is manifested only as a biochemical abnormality. Eventually, loss of the excretory, metabolic and endocrine functions of the kidney leads to the development of the clinical symptoms and signs of renal failure, which are referred to as uraemia. When death is likely without renal replacement therapy (RRT), it is called end-stage renal failure (ESRF).<sup>[1]</sup> It would be interesting to know that the incidence of chronic kidney disease in India, which is a densely populated country with low income, different food, cultural traditions and lifestyle habits, is 7.85 million CRF patients of its 1 billion population and the prevalence rate is 0.78%.<sup>[2]</sup>

Over 1 million people worldwide are alive on dialysis or with

a functioning graft.<sup>[3]</sup> It is estimated that by 2010, 6 million people worldwide would need RRT costing US \$28 billion.<sup>[4]</sup> As per the December 2007 index declared by Rajya Sabha, the per capita income in India is ₹ 20,734 per annum. The total population is 113 crore of which 26% live below the poverty line (BPL) where the daily earning is ₹ 10 only.<sup>[5]</sup> The monthly cost of hemodialysis (HD) in most private hospitals averages ₹ 12,000 and the yearly cost of dialysis is ₹ 140,000.

The average cost of kidney transplant varies from ₹ 50,000 in a government set-up to ₹ 300,000 in an average private hospital. Also, the yearly maintenance cost post transplant for the drugs amounts to ₹ 120,000 per year or ₹ 10,000 per month. So, the social and economic consequences of CRF are considerable and the conventional approach of management includes dialysis and renal transplantation which is not affordable and acceptable by Indian population. Therefore, exploration of a safe and alternative therapy is highly needed, which proves to be helpful in reducing the requirement of dialysis and in postponing the renal transplantation. Several institutes and scholars are making possible attempts in this direction.

Prashanth *et al.* studied the role of *Punarnavadi* compound in the management of CRF in 2008–2009 and found it effective and safe.<sup>[6]</sup>

We obtained some encouraging results during the management of the patients of CRF with certain Ayurvedic treatments.

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These significantly correct uremia, which is the cardinal feature of CRF, and improve the renal function which is evident by reduction in serum creatinine and blood urea. In addition, the treatments also improve the general condition of the patient.

### Aims and objectives

1. To prove the efficacy of the Ayurvedic preparations in management of CRF.
2. To give the scientific establishment to the observations which show that certain Ayurvedic treatments significantly correct albuminuria and serum creatinine value, which are the cardinal features of CRF, and improve the renal function which is evident by reduction in serum creatinine and blood urea levels.
3. To provide a large human population suffering from CRF, a future possibility of a treatment which can be helpful in reducing the need of HD and to avoid or to delay renal transplantation.

### Materials and Methods

All the patients were selected from the OPD and IPD of the PD Patel Ayurved Hospital, Nadiad.

#### Criteria for inclusion

Patients with clinically positive history of CRF, having the clinical features of CRF like albuminuria, raised serum creatinine and blood urea, were included.

#### Criteria for exclusion

1. The patients having diabetic nephropathy were excluded from this study.
2. Patients who were on dialysis therapy.
3. Patients with other added complications.

#### Plan of study and management

1. The patients were treated in OPD as well as in IPD.
2. A total of 100 patients with CRF were registered for the study [Table 1].
3. The patients were treated with the following:
  - *Goksuradi guggulu* (compound Ayurvedic preparation: *Gokshura+Guggulu+Triphala+Trikatu+Musta*) 1 g three times a day.
  - *Rasayan churna* (*Gokshura+Amalaki+Guduchi* in equal quantities) 3 g two times a day.
  - *Varunadi kvath* (ingredients: *Varuna tvak+Bilva moola+Apamarga+Chitrak moola+Arani+Shigru+Bruhati+Kirattikta+Karanja+Shatavari*) 10 g two times/day.
  - *Niruha basti* of *Punarnavadi kvatha*<sup>[7]</sup> daily.
4. The patients were kept on normal healthy diet.
5. The doses of the continuous antihypertensive drugs of the patients were not interfered with.

#### Preparation of medicines

Medicines were prepared under expert supervision and purchased from Sunder Ayurveda pharmacy, Nadiad.

#### Duration of the treatment

The duration of the treatment was 1 month.

#### Assessment of the results

1. All the patients were clinically assessed before and after

treatment.

2. Changes in symptoms, albuminuria, serum creatinine, blood urea and hemoglobin were observed.
3. Observations were evaluated statistically.

### Results and Observations

The main causative factor for CRF in this study was hypertension; 86% patients were found in this group. 7% patients were having chronic nephritis and 5% were having polycystic kidney disease. Only 2% of the patients were found with obstructive nephropathy [Table 1]. Serum creatinine reduced by 20.71% and it was statistically highly significant. Blood urea reduced by 32.15% and it was also statistically highly significant. Albuminuria reduced by 36.70% and this was statistically highly significant. Hemoglobin increased by 4.65% and this was statistically highly significant [Table 2]. None of the patients had shown any new and unusual feature. Urine output increased by 56.54% and it was statistically highly significant. Out of 100 patients, edema was reported by 58 patients and it reduced by 71.56%. Nausea was reported in 46 patients and it was relieved by 68.75%. The 24 patients were found to have vomiting and it was relieved by 82.35%. Weakness was found in 85 patients and it reduced by 55.61%. The 53 patients were having loss of appetite, and appetite increased by 59.29%. Leg cramps were found in 17 patients and it reduced by 72%. Breathlessness was found in 27 patients and it was relieved by 64.29%. Hiccup was found in only one patient and was totally relieved. The 19 patients reported pruritus and it reduced by 66.66% [Table 3]. Reductions in all these symptoms were statistically highly significant.

### Discussion and Interpretation

As mentioned earlier, CRF 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. According to Ayurvedic principles of management of the disease, tissue damage can be prevented and repaired by *Rasayana* drugs because they have the capability to improve qualities of tissues and hence increase resistance of the tissues. On the other hand, blockage can be removed by *Lekhana* drugs having scraping effect on blocked channels.

*Goksuradi guggulu*<sup>[8]</sup> (combined Ayurvedic preparation) is *Rasayana* for *Mutravaha Srotas* and it has also *Lekhana* (scraping) effect because of *Guggulu*<sup>[9]</sup> (*Commiphora mukul*). *Varunadi kvath*<sup>[10]</sup> is also helpful to relieve the *Kapha* and *Vata doshas*. *Rasayan churna* has *Rasayan* properties.<sup>[11]</sup> *Niruha basti* is a minor alternative of dialysis. A total of 100 patients

**Table 1: Basic underlying cause of chronic renal failure**

Basic cause	No. of patients	Percentage
Hypertension	86	86
Chronic nephritis	07	07
Polycystic kidney disease	05	05
Obstructive nephropathy	02	02

**Table 2: Effect of Ayurvedic treatment on laboratory investigations of 100 chronic renal failure patients**

Investigation	Mean score		%	SD	SE	t value	P value
	BT	AT					
Serum creatinine (mg/dl)	6.054	4.8	20.71	1.73	0.138	9.114	<0.001
Blood urea (mg/dl)	111.3	75.5	32.15	39.38	3.938	9.085	<0.001
Albuminuria (g/l)	1.88	0.69	36.70	0.74	0.075	9.225	<0.001
Hemoglobin (g %)	10.06	10.5	04.65	1.06	0.106	4.380	<0.001

**Table 3: Effect of Ayurvedic treatment on symptoms and signs of 100 chronic renal failure patients**

Symptoms	Mean score		%	SD	SE	t value	P value
	BT	AT					
Urine output day (in ml)	817.5	1881	130.12	500.81	79.18	13.43	<0.001
Nausea	1.73	0.54	68.75	0.5	0.074	16.23	<0.001
Vomiting	1.41	0.25	82.35	0.48	0.098	11.86	<0.001
Loss of appetite	2.13	0.86	59.29	0.59	0.018	15.51	<0.001
Edema	1.87	0.53	71.56	0.51	0.067	19.89	<0.001
Weakness	2.30	1.02	55.61	0.64	0.070	18.25	<0.001
Dyspnea	1.55	0.55	64.29	0.39	0.075	13.25	<0.001
Insomnia	1.37	0.22	83.78	0.36	0.069	16.47	<0.001
Leg cramps	1.47	0.41	72.00	0.24	0.058	18.00	<0.001
Abdominal pain	1.63	0.47	70.96	0.37	0.085	13.47	<0.001
Pruritus	1.57	0.52	66.66	0.40	0.092	11.33	<0.001

of CRF were taken for the research study. In this study, it was found that serum creatinine reduced by 20.71% with treatment. This beneficial effect was statistically highly significant which is encouraging and shows improvement in kidney functions. Blood urea reduced by 36.15% with treatment and it was also statistically highly significant. Treatment resulted in reduction in albuminuria by 36.70% and increase in hemoglobin by 4.65%, which were statistically highly significant. Reduction in edema, weakness, leg cramps, increase in appetite, and relief from nausea, breathlessness and pruritus were statistically highly significant.

## Conclusion

With the help of clinical observations and the discussion made, it may be concluded that 86% patients of CRF have hypertension as a basic underlying cause. The result obtained may be attributed to the disease modifying effect of trial therapy by means of its *Rasayana* and anti *Vata-Kapha* properties.

The trial therapy is an ideal drug as a safe and effective alternative in case of CRF.

Serum creatinine, blood urea and albuminuria reduced 20.71%, 32.15% and 36.70%, respectively. Hemoglobin level and urine output increased by 4.38% and 56.54%, respectively. They were statistically highly significant. All the patients have shown more than 50% relief in all the signs and symptoms. In a difficult condition where conventional treatments are beyond the financial capacities of a common man of the country, this therapy can be hopeful and promising.

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## हिन्दी सारांश

# क्रोनिक रीनल फेल्योर के १०० रोगियों पर आयुर्वेद चिकित्सा का प्रभाव

मनीष वी. पटेल, एस. एन. गुप्ता, निमेष जी. पटेल

क्रोनिक रीनल फेल्योर (सी.आर.एफ.) में रोगी के वृक्क की कार्यक्षमता का हास हो जाता है और ये ज्यादातर न बदलने वाली तथा लगातार चलने वाली स्थिति है। प्रारंभ में रक्तगत जैवरासायनिक तत्वों के स्तर में ही त्रुटि रहती है। पश्चात मूत्रनिष्कासन प्रभावित होने से मल पदार्थों का उत्सर्जन नहीं हो पाता है और इसके कारण विविध लक्षणों का प्रादुर्भाव होता है। सी.आर.एफ. उस स्थिति को कहते हैं जब वृक्क का निष्पंदनक्रम (जी.एफ.आर.) ३० मि.ली./मिनट से कम हो जाता है। ऐलोपथी चिकित्सा में डायालिसिस और वृक्क प्रत्यारोपण समाविष्ट हैं जो हमारे देश के लोगों के लिये आर्थिक कारणों से सुसंगत नहीं है। हमें सी.आर.एफ. के रोगियों में आयुर्वेद चिकित्सा से उत्साहवर्धक परिणाम मिले हैं जिसमें तीव्र लक्षणों और रक्तगत यूरिया में कमी होते देखी गयी है। इस अध्ययन में चिकित्सार्थ सम्मिलित १०० रोगियों को प्रतिदिन पुनर्नवादि क्राथ की निरुह बस्ति दी गयी। साथ में गोक्षुरादि गुग्गुलु, वरुणादि क्राथ तथा रसायन चूर्ण दिया गया। डायालिटिक नेफ्रोपथी के रोगियों को इस अध्ययन में समाविष्ट नहीं किया गया। सभी लक्षणों में तथा रक्तगत क्रिएटीनीन, यूरिया, मूत्रगत आल्ब्यूमिन की मात्रा में कमी पायी गई जो सांख्यिकी के अनुसार उच्चतम गुणवत्ता युक्त है।

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