

**CLINICAL STUDY OF "GOKSHURADI YOGA" FOR THE  
MANAGEMENT OF CHRONIC RENAL FAILURE****<sup>1</sup>\*Dr. Sharda Tak and <sup>2</sup>Prof. Mahesh Chandra Sharma**<sup>1</sup>M.D., Ph.D, Medical Officer, Govt. B.D.M. Hospital, Kotaputli, Jaipur, Rajasthan, India.<sup>2</sup>M.D., Ph.D, Ex Director, National Institute of Ayurveda, Jaipur, Rajasthan, India.Article Received on  
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Hospital, Kotaputli, Jaipur,  
Rajasthan, India.**ABSTRACT**

There has been a dramatic increase in the incidence of CHRONIC RENAL FAILURE during the past two decades. The only treatment for CRF is Dialysis and Kidney Transplantation which being unaffordable and problematic and is not preferred. To overcome such problems there is need of research for certain Ayurvedic Drugs for the management of CRF. So this study was aimed to provide a feasible and cost effective Ayurvedic medicine for society. The study is done to evaluate the the effect of certain medicinal plants in a formulation named GOKSHURADI YOGA and The same along with Punarnava Arka which prepared in cow urine on CRF. In this trial work

Gokssuradi Yoga is given in two groups of patients of 30 in each group. In group A Gokshuradi Yoga is given 2 tablets TDS for three months. In group B Gokshuradi Yoga along with Punaravadi Arka 10 ML TDS for three months. The results in objective parameters in Group A – Hb gm%, ESR, Blood Urea showed highly significant (<0.001), TLC was also highly significant (<0.005), Se. Creatinine showed significant (<0.025), Albumin in urine also showed significant (<0.050). The results in objective parameters in Group B – Hb gm%, ESR, Se. Creatinine, Blood Urea showed highly significant (<0.001), TLC and Albumin in urine shows significant (<0.010). The results as we compared, the percentage of relief in subjective as well as objective parameters in both the groups, the group B showed better results as compare to group A. Thus this study proved that in the management of CRF, these drugs are safe and effective without any harmful effect. This formulation is also beneficial to the people who are unable to afford the cost of Dialysis and kidney transplantation.

**KEYWORDS:** Chronic Renal Failure, Gokshuradi Yoga, Punarva Arka.

## INTRODUCTION

In the present world, Renal Failure becomes the greatest problem to the medical science due to its wide range of etiology, clinical manifestations, presentations and its mortality rate per year all over the world. The Incidence rate is - ~ 0.78%. The only treatment for Chronic Renal Failure is Dialysis and Kidney Transplantation which being unaffordable & problematic, that's why it is not preferable.

Thus, keeping this in mind the present study was done to exploit a herbal treasure of Ayurveda for the management of Chronic Renal Failure on the basis of Ayurvedic Pharmacological principles of certain medicinal plants which are able to improve renal function as well as rejuvenator.

## AIMS AND OBJECTIVE

- To evaluate the efficacy of certain Ayurvedic drugs named Gokshuradi Yoga in the management of Chronic Renal Failure in comparison to Gokshuradi Yoga along with Punarnava Arka.
- To provide a cost effective medicine for society.

## CLINICAL STUDY

### MATERIAL AND METHODS

In the present study, clinical trial was undertaken to assess comparative clinical effects of 'Gokshuradi Yoga' & 'Gokshuradi Yoga along with Punarnava Arka.

### Study Design

Comparative Trial.

### Selection of patients

The study was conducted on sixty numbers of patients out of them fifty were continued for three months. They were selected from O.P.D. of Dravya Guna Deptt. of Arogyashala, NIA, Jaipur & from B.B.S. Panchgavya Chikitsa Evam Anusandhan Kendra, Durgapura, Jaipur. Detailed history was taken after registration of patient.

### Inclusion Criteria

All the patients presenting with the sign & symptoms of Chronic Renal Failure & whose serum creatinine level reported up to 10mg/dl after laboratory investigation were included in the present clinical trial.

- Age - No restriction
- Sex - No restriction
- Disease - Diagnosed patients after Renal function test, renal failure of renal origin only.

### Exclusion criteria

Following patients were excluded in present trial

- Acute Renal Failure
- End stage Renal Disease
- Refusal of patients
- Disease – Renal Tuberculosis, Renal cell carcinoma etc.

### DIAGNOSTIC CRITERIA

All the patients in the study were studied under following headings.

1. History – Complete case history, history of past illness, family history and present history were recorded.
2. Physical examinations – Complete physical examination of patients was performed on the principles of both modern & Ayurvedic aspect before and after trial.

Specific examinations were also carried out in all the selected patients as per concept of Ashtavidha Pariksha, Dashvidha Pariksha & Prikriti mentioned in the ayurvedic texts.

3. Laboratory investigation – In this study all the patients were investigated before and after trial of three months as follows.
  - Routine blood test (Hb% in gm, TLC, DLC, ESR)
  - Serum Creatinine
  - Blood urea.
  - Routine and Microscopic Urine Analysis.

### Group designing

In order to evaluate the effects of Gokshuradi yoga & the same with Punarnava Arka, the clinical study was studied in two groups, having 24 in Group 'A' and 26 in group 'B'.

- Group A – 'Gokshuradi yoga' (2 tab TDS).
- Group B – Same as in group B along with Punarnava Arka 10ml TDS.

**Route of Administration**

- Orally (both the Gokshuradi yoga & Arka were administered orally).
- Duration of Clinical Trial - 3 months.

**Dose**

The patient were advised to take the Ghan vati 3gm/day in three equal divided dose, 2Tab (1gm) TDS with water in Group A. Those patients who were in Group B advised to take Ghan vati with 10ml Punarnava Arka TDS.

**Diet**

All the patients were advised not to take Protein, Sodium & Potassium rich diet.

**Follow up**

- Patients were followed on every 15th day till 3 months.
- Improvement & other effects were specifically elicited and noted according to signs & symptoms.

At every follow up through history was taken for any discomfort or illness. Pulse rate & B.P. was recorded. All the laboratory investigations were repeated at every follow up and after completion of Trial.

**Discontinuation Criteria**

- Patient developing any major complication during the course of trial.
- If patient have moderate to severe Hypertension.

**Parameters for Assessment**

The patients enrolled for the study were assessed by the following criteria

- Subjective Criteria
- Objective Criteria

**Subjective Criteria**

A special scoring pattern has been adopted according to the severity of sign or symptoms for the sound statistical analysis, so as to present and discuss the results objectively. In this particular research work subjective criteria as given below on the basis of (B. R. 93 Vrikka Roga & diseases related to CRF). These main symptoms were taken as subjective parameters.

- Alpa Mutrata (Oliguria)

- Mutra Kricchrata (Dysuria)
- Chardi (Vomiting)
- Pada shotha (Pedal Oedema)
- Akshikoota shotha (Infra orbital Oedema)
- Prishtha Shoola (Back ache)
- Shirah Shoola (Headache)
- Agnimandhya (loss of appetite - Anorexia)
- Jwar (Fever)
- Pandu (Anaemia)
- Shwas Kricchrata (Dyspnoea)
- Alpa Nidra (Insomnia)
- Twakrokshya (Dryness of skin)
- Klama (Fatigue)
- Pindikodweshtana (Cramps)
- Vibandha (Constipation)

## DISCUSSION

The clear cut description on the term ‘CRF’ (Chronic Renal Failure) is not available in Ayurvedic classics. Only Bhaishajya Ratnavali Adhyaya 93 says about “*Vrikka Roga*” with its Nidana, Purvarroopa, Lakshana, Upadrava and Chikitsa, which is similar as CRF. On the other hand, there is a vivid description in Ayurveda about urinary and renal disorders such as.

1. Mutrakricchra
2. Mutraghata
3. Mutra Ashmari
4. Prameha (Especially Madhumeha)
5. Mutravaha Srotodushti
6. Abhyanthara Vidradhi – Vrikka Vidradhi
7. Granthi – Vrikka Granthi

All the above diseases may create the pathogenesis of CRF individually or severally.

## SELECTION OF DRUGS

A formulation named Gokshuradi Yoga containing four herbs were selected. The *Diuretic*, *Anti-inflammatory*, *Anti-oxidant*, *Antitoxic*, *Rejuvenator* & *Aphrodisiac* properties of above

said drugs have been reported by many scientists but these in combined formulation especially in the management of Chronic Renal Failure has not been reported yet.

1. Gokshura - *Tribulus terrestris*
2. Punarnava - *Boerhavia diffusa*
3. Guduchi - *Tinospora cordifolia*
4. Ashwagandha - *Withania somnifera*

*Punarnava Arka* was prepared from Punarnava where Go-mutra was taken in place of water and used as an Anupana of the formulation in Group B.

On thorough study of Ayurvedic classics, we can assumed that in this disease, two types of treatments are required, the one is 'URJASKAR' (ÅtZLdj) and the second is ROGNUT ('jksxuqr~) The above selected 5 drugs – Gokshura, Punarnava, Guduchi, Ashwagandha and Go-mutra having both these properties.

Besides this in Charaka Samhita, it is stated that success is based on 'qfDr' (proper planning) and knower of proper plan (of drugs) always stands at the top among the knowers of drugs as quoted in (Ch.Su. 2/16).

So keeping in mind the Yukti of drugs, we have used these drugs in the combined form as Gokshuradi Yoga and Punarnava Arka. Punarnava Arka is prepared by using Go-mutra instead of water.

Punarnava is among those drugs which contains active principles in the form of volatile oil. Hence, by using such drugs if kwatha is prepared while doing preparation itself active ingredients may get vaporised. So arka is prepared with it and also stability period of arka kalpana is comparatively more than Swarasa, Kalka, and Kwatha etc. Arka possess good palatability and attractive colour, hence, its acceptance is more.

In Ayurveda it is also explained that formulation is getting a higher potency when proper drugs are combined that is "Yoga Prabhava".

Cow urine is commonly used to prevent and cure diseases from ancient time and it has many properties according to ayurvedic classics. It is depicted best among all types of mutra and also indicated best in Udara roga. Acharya Bhava Prakasha also indicated in vatika roga and mutra rodha as quoted in - (B.P. Mutra Varga/1-5).

In this disease both (vata and mutra avrodha) are the prominent causes for the pathogenesis of CRF. Besides this, Go-mutra also subside sign and symptoms which occur in CRF. That's why Punarnava Arka is prepared by using Go-mutra instead of water.

### **THE PROBABLE MODE OF ACTION**

In ayurveda, there is no apparent references are available regarding to mode of action of drugs. It is mentioned that some drugs act by means of Rasa other by Veerya and other by Guna, Vipaka or Prabhava. In addition some substances either migrate or aggravate the doshas by there ownself (dravya). Some others do so by their veerya, some else by there rasa and yet others by there Vipaka. As given in (Ch.Su. 26/71).

In this combination most of them are tikta, kashaya, and katu in rasa, but they also have madhur vipaka and ushna veerya, so they are vata shamaka.

In the ayurvedic classics Gokshura is depicted the best mutrala and vatahara dravya as in (Ch.Su. 25/40).

Punarnava is also depicted as basti shodhaka and mutrala dravya in all ayurvedic text.

Due to basti shodhaka and mutral properties these may eliminate the mutra visha (Creatinine & Urea) and detoxified the blood and may play a role in the control of CRF.

Most of these drugs have deepana pachana property due to tikta rasa and ushna veerya and may relieve the complaint of agnimandya.

Among the five selected drugs most of them have madhura vipaka, so may perform rasayana karma as well as balavardhaka and pushtikar which is necessary for the patient of CRF.

In the group B, Punarnava Arka used as an Anupana and we know that use of Anupan according to disease enhances the effect of an Aoushadha. In Punarnava Arka two drugs are used - Punarnava and Go-mutra. Both these drugs having required properties. So Punarnava arka as a carrier (Anupan) increases the efficacy of Gokshuradi yoga.

Since general weakness occur in patients. This is also quoted in Bhaishajya Ratnavali that there is no permanent cure for Vrikka Roga so rasayana dravyas should be used there as in (B.R. 93/24).

So in this way after studying all the related diseases to CRF, we have assumed that Vata is pradhana dosha in this disease and this is a yapya disease, it cannot be cured, but it can be controlled on the basis of causes, sign & symptoms and use of Rasayana dravyas. so the line of treatment may be.

- Vata shamaka
- Mutrala and basti shodhana
- Deepana pachana
- Rakta shodhaka
- Balya & pushtikara

### OBSERVATIONS AND RESULTS

**Table No. 1 Showing the effect on Objective Parameters (Hb gm%, TLC, ESR) in Group A & Group B, Before and After Trial.**

S.No.	GROUP A						GROUP B					
	Hb%		TLC		ESR		Hb%		TLC		ESR	
	B.T.	A.T.	B.T.	A.T.	B.T.	A.T.	B.T.	A.T.	B.T.	A.T.	B.T.	A.T.
1.	10	11	8600	8500	15	10	9	9.5	7500	7400	10	10
2.	11.1	11.5	8700	7300	20	10	10.5	10.9	10500	10300	20	15
3.	12.4	13	7700	6300	30	25	11.5	11.9	10900	11000	20	20
4.	12.1	12.5	7100	5800	25	20	12.5	13.1	8000	7900	5	5
5.	8.9	10	7200	7900	10	10	13.4	14	11000	10700	25	15
6.	10	10.9	8700	8500	15	10	9.1	10	10600	10200	40	30
7.	12.8	13.1	5300	5100	10	10	12	12.4	8000	7600	15	10
8.	12.9	13.2	9000	8000	35	20	8.2	9.5	8200	8000	20	15
9.	11.4	12.2	11500	9400	65	35	9.3	10.2	7200	6500	10	5
10.	11.6	12.1	10500	9300	35	25	8.2	10	6900	6800	30	20
11.	9.8	11	9200	9100	40	30	7.9	9.1	8300	8200	10	5
12.	11.6	11.9	5800	6100	15	10	9.6	10.7	7000	7500	15	10
13.	13.2	13.5	7900	6800	10	5	11.5	12.5	10400	10300	15	15
14.	8.4	9.5	7200	7100	15	15	12	11.9	7000	6800	30	20
15.	13.5	14	8900	8700	30	20	10.1	10	6500	6600	15	15
16.	8	9.2	7500	7600	25	20	10.1	11.1	10900	10500	35	20
17.	9.5	10.1	10400	8900	25	20	11.1	11	8900	8700	20	15
18.	8.9	10	8700	8200	15	10	12	12.5	6000	6100	10	10
19.	11.5	13	9000	8700	10	10	8.2	8.9	9000	9200	15	20
20.	7.9	9.4	10600	10200	40	30	7.9	9.9	8000	7500	20	10
21.	9.9	10.2	10500	10000	30	25	11.5	12.1	5900	5800	10	10
22.	10.1	11.2	7500	7500	15	10	12.5	13.1	7800	7700	20	15
23.	11.4	11	8000	8200	10	10	9.4	10.9	6900	6800	15	5
24.	9.7	10.3	8100	7800	20	10	11.8	12.6	8800	8500	35	20
25.	-	-	-	-	-	-	10.4	12.4	11500	9400	40	35
26.	-	-	-	-	-	-	11.3	12.7	10700	9600	30	20
<b>Total</b>	<b>256.6</b>	<b>273.8</b>	<b>203600</b>	<b>191000</b>	<b>560</b>	<b>400</b>	<b>271.0</b>	<b>292.9</b>	<b>222400</b>	<b>215600</b>	<b>530</b>	<b>390</b>



<b>Diff.</b>	<b>17.2</b>	<b>12600</b>	<b>160</b>	<b>21.9</b>	<b>6800</b>	<b>140</b>
<b>%</b>	<b>6.29</b>	<b>6.19</b>	<b>28.57</b>	<b>7.49</b>	<b>3.06</b>	<b>26.42</b>

**Table No. 2 Showing the effect on Objective Parameters (Se. Creatinine & Urea) in Group A & Group B, Before and After Trial.**

S. No.	GROUP A				GROUP B			
	Se. Creatinine		Urea		Se. Creatinine		Urea	
	B.T.	A.T.	B.T.	A.T.	B.T.	A.T.	B.T.	A.T.
1.	8.5	7	160	100	9	8.5	210	170
2.	3.5	2	90	60	7.4	7	170	120
3.	7.8	7	130	92	8.5	6	180	125
4.	8	7.4	190	120	6.8	3.2	120	60
5.	4.5	3.5	120	99	5.2	4.5	100	70
6.	8	9.3	190	110	3.8	3	90	62
7.	2.9	1.5	68	40	8.9	9	170	140
8.	5.8	4.8	100	72	7.8	7.2	160	135
9.	4.6	4	102	80	5	5.2	110	85
10.	10	8.5	210	165	2.6	2	62	40
11.	8.9	8	170	135	3.8	4	90	65
12.	9.2	9	190	150	10	8.8	190	155
13.	7.8	8.8	140	95	9.2	8.5	180	130
14.	9.8	9	155	150	7.8	7.1	145	115
15.	8.8	7.5	200	165	6.7	6	150	125
16.	3	4.85	68	54	5.8	5.5	110	90
17.	4.2	3	85	60	7.3	6.8	140	85
18.	7.4	6.7	138	110	8.9	9	150	115
19.	9.7	8.4	180	165	3.7	3.2	80	55
20.	9.9	10.5	200	190	9.3	8.5	220	165
21.	10	10	220	195	7.9	7	125	85
22.	8.2	8.75	190	160	6.6	5.8	140	90
23.	4.8	4.5	100	86	8	6.5	180	156
24.	8.3	7.8	178	148	4.7	3.9	85	70
25.	-	-	-	-	6	6.5	150	155
26.	-	-	-	-	9	8.7	195	150
<b>Total</b>	<b>173.6</b>	<b>161.8</b>	<b>3574</b>	<b>2801</b>	<b>179.7</b>	<b>161.4</b>	<b>3702</b>	<b>2813</b>
<b>Diff.</b>	<b>11.8</b>		<b>773</b>		<b>18.3</b>		<b>889</b>	
<b>%</b>	<b>6.80</b>		<b>21.63</b>		<b>10.18</b>		<b>24.01</b>	

**Table No. 3** Showing the effect on Objective Parameters (Albumin in Urea) in Group A & Group B, Before and After Trial (Nil = 0, + = 1, ++ = 2, +++ = 3, ++++ = 4).

No. Of Patient	ALBUMIN GROUP A		ALBUMIN GROUP B	
	B.T.	A.T.	B.T.	A.T.
1.	0	0	1	0
2.	2	1	4	3
3.	1	0	2	0
4.	0	0	1	1
5.	1	1	0	1
6.	1	1	2	2
7.	1	0	1	0
8.	0	0	1	1
9.	3	2	3	0
10.	3	3	3	2
11.	2	0	2	2
12.	1	2	1	1
13.	1	1	0	0
14.	1	0	1	0
15.	1	1	3	3
16.	2	2	2	1
17.	2	1	1	1
18.	2	3	1	1
19.	1	0	0	1
20.	4	3	3	2
21.	3	1	1	1
22.	4	2	1	0
23.	2	2	0	0
24.	0	1	1	1
25.			1	0
26.			1	0
<b>Total</b>	<b>38</b>	<b>27</b>	<b>37</b>	<b>24</b>
<b>Diff.</b>	<b>11</b>		<b>13</b>	
<b>%</b>	<b>28.95</b>		<b>35.14</b>	

**Table No. 4:** Showing the Results on Objective Parameters in Group A.

Group A	No. of Patient	Mean		Mean Dif.	M.D%	S.D.	S.E.	t	P	Results
		B.T.	A.T.							
Hb gm %	24	10.73	11.41	-0.68	-6.29%	0.49	0.10	-6.75	< 0.001	H.S.
TLC	24	8483.33	7958.33	525.00	6.19%	689.20	140.68	3.73	< 0.005	H.S.
ESR	24	23.33	16.67	6.67	28.57%	6.37	1.30	5.13	< 0.001	H.S.
Se. Creatinine	24	7.23	6.74	0.49	6.80%	0.94	0.19	2.57	< 0.025	S
Blood Urea	24	148.92	116.71	32.21	21.63%	18.90	3.86	8.35	< 0.001	H.S.
Albumin (Urine)	24	1.58	1.13	0.46	28.95%	0.98	0.20	2.30	< 0.050	S

Table No. 5: Showing the Results on Objective Parameters in Group B.

Group A	No. of Patient	Mean		Mean Dif.	M.D%	S.D.	S.E.	t	P	Results
		B.T.	A.T.							
Hb gm %	26	10.48	11.27	-0.78	-7.49%	0.61	0.12	-6.61	< 0.001	H.S.
TLC	26	8553.85	8292.31	261.54	3.06%	481.73	94.47	2.77	< 0.010	S
ESR	26	20.38	15.00	5.38	26.42%	5.08	1.00	5.40	< 0.001	H.S.
Se. Creatinine	26	6.91	6.21	0.70	10.18%	0.84	0.16	4.29	< 0.001	H.S.
Blood Urea	26	142.38	108.19	34.19	24.01%	12.31	2.41	14.16	< 0.001	H.S.
Albumin (Urine)	26	1.42	0.92	0.50	35.14%	0.95	0.19	2.69	< 0.010	S

Overall Comparative Statistical Analysis on Subjective and objective parameters in both Group A and Group B.

- The result in subjective parameters in Group A - Pandu, Agnimandya, Mutrakricchrata showed highly significant (<0.001), Chardi, Akshikoot shotha, Pada shotha, Shirah shoola, Jwara, Alpamutrata showed significant (<0.010), Twakrukshyata, Pristhashoola, Alpanidra, Shwasa Kricchrata, Klama, Vibandha showed significant (<0.025) and also Pindikodweshtana showed significant results (<0.050).
- The result in subjective parameters in Group B – Akshikoot shotha, Pada shotha, Pandu, Twakrukshyata, Agnimandya, Mutrakricchrata, Alpamutrata, Shwasa Kricchrata, Vibandha showed highly significant (<0.001), Chardi, Shirah shoola, Jwara, Pristhashoola, Pindikodweshtana, Alpanidra, Klama showed significant (<0.010).

Table No. 6: Showing the Comparative results on subjective parameter in both groups.

S.No	Subjective parameter	Mean % of relief in group - A	Mean % of relief in group - B
1	Chardi	39.53%	51.02%
2	Akshikoot Shotha	42.11%	76.00%
3	Padashotha	45.00%	73.91%
4	Shiraha Shool	42.86%	48.57%
5	Jwara	45.00%	66.67%
6	Pandu	83.33%	85.00%
7	Twakrokshyta	57.69%	86.84%
8	Agni Mandaya	90.91%	92.16%
9	Prishtha Shool	51.72%	58.82%
10	Mutrakricchrata	79.55%	95.56%
11	Alpamutrata	55.81%	94.23%
12	Pindikodweshtana	48.28%	60.00%
13	Alpanidra	45.16%	57.14%
14	Shwaskricchrata	48.48%	79.17%
15	Klama	56.67%	58.06%
16	Vibahandha	52.78%	91.89%

- The results in objective parameters in Group A – Hb gm%, ESR, Blood Urea showed highly significant ( $<0.001$ ), TLC is also highly significant ( $<0.005$ ), Se. Creatinine showed significant ( $<0.025$ ), Albumin in urine also showed significant ( $<0.050$ ).
- The results in objective parameters in Group B – Hb gm%, ESR, Se. Creatinine, Blood Urea showed highly significant ( $<0.001$ ), TLC and Albumin in urine showed significant ( $<0.010$ ).

Showing the Comparative results on subjective parameter in both groups

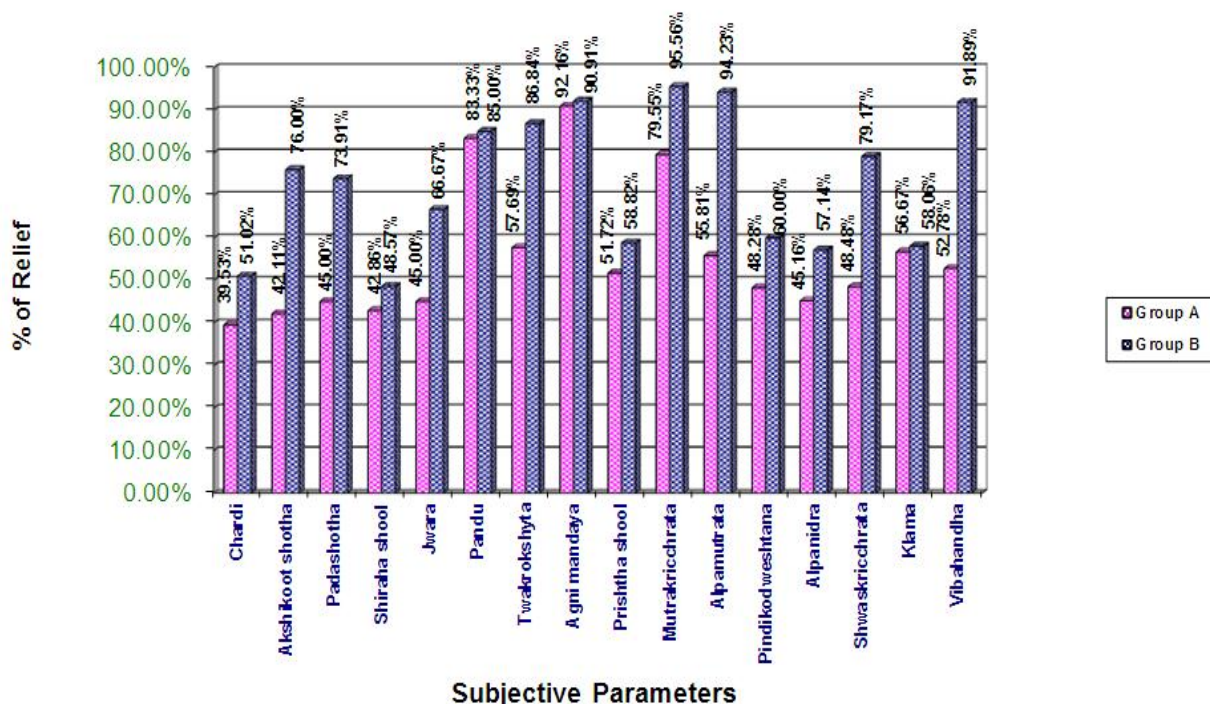
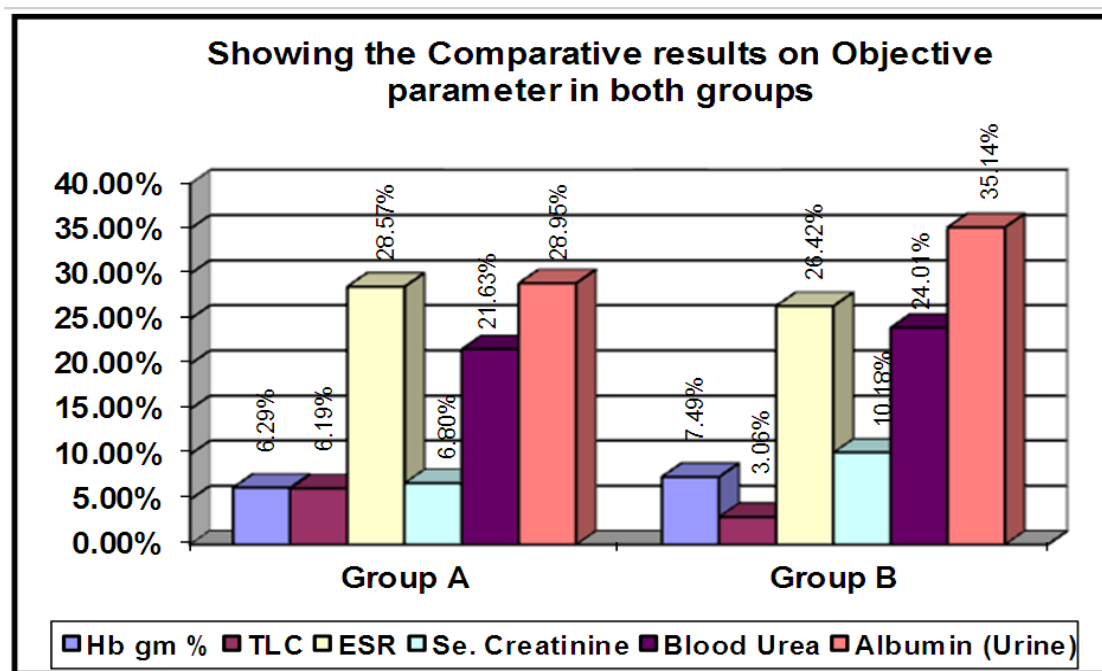


Table No. 7: Showing the Comparative results on Objective parameter in both groups.

S.No	Objective parameter	Mean % of relief in group - A	Mean % of relief in group - B
1	Hb gm %	6.29%	7.49%
2	TLC	6.19%	3.06%
3	ESR	28.57%	26.42%
4	Se. Creatinine	6.80%	10.18%
5	Blood Urea	21.63%	24.01%
6	Albumin (Urine)	28.95%	35.14%



## CONCLUSION

- From the study we conclude that Ayurvedic formulations Gokshuradi yoga and Punarnava Arka is very helpful in the management of Chronic Renal Failure.
- If we compare the percentage of relief in subjective as well as objective parameters in both the groups, finally we reach in a conclusion that Group - 'B' (Gokshuradi Yoga along with Punarnava Arka) showed better results as compare to Group – 'A' i.e. only Gokshuradi yoga.
- Thus we conclude that in the management of CRF, Ayurvedic drugs could be used safely and effectively without any harmful effects. This formulation is also very much beneficial to the people those who were unable to afford the cost of Dialysis and Kidney transplantation.

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