

Clinical Research

Effect of *Ayurvedic* management in 130 patients of diabetic nephropathyKalapi Patel¹, S. N. Gupta², Namrata Shah³¹Reader, Department of Panchakarma, ²Professor and Head, Department of Kayachikitsa, ³Medical Officer, J. S. Ayurveda College, Nadiad, Gujarat, India

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Abstract

Diabetic nephropathy is a specific form of renal disease. It is a major cause of renal insufficiency and ultimately of death. The present study has been carried out to prove the efficacy of Ayurvedic drugs in the management of diabetic nephropathy, which can be helpful in reducing the need of dialysis and avoiding or delaying renal transplantation. A total of 130 patients of this disease were treated in IPD (Group A) and OPD (Group B). Ayurvedic formulations including *Gokshuradi Guggulu*, *Bhumyamalaki*, *Vasa* and *Shilajitvadi Vati* were given to all the patients for 2 months. Group A patients were given special planned food. Results were analyzed statistically using “t” test. In group A patients, highly significant reduction was found in the values of serum creatinine, blood urea and urinary excretion of albumin. Marked improvement was found in the patients’ general physical well-being, together with reduction in symptoms, in group A patients. This shows the importance of *Pathyapathya* in Ayurvedic management of the disease. This management may bring some new hope to the patients of diabetic nephropathy, which usually terminates to chronic renal failure and ultimately to death. Further studies are being carried out in this regard.

Key words: Ayurveda, diabetic nephropathy, albuminuria

Introduction

Diabetic nephropathy is a specific form of renal complication of Diabetes Mellitus (DM), a major cause of death and disability among diabetics. It is observed that even the patients having well-controlled diabetes suffer from diabetic nephropathy. Diabetic nephropathy accounts for approximately 14% of all deaths in diabetic patients, and some 25% of those developing diabetes under the age of 30 die from renal failure due to diabetic nephropathy.^[1] This is also a major cause of chronic renal failure as it accounts for 20-40% patients of chronic renal failure.^[2]

The authors found some encouraging results in the patients of diabetic nephropathy with certain Ayurvedic treatments during clinical practice. These significantly correct albuminuria, which is the cardinal feature of diabetic nephropathy, and improve renal function which is evident by reduction in serum creatinine. In addition, the treatments also improve the general condition of the patient. Further studies are being carried out in this regard.

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Aims and objectives

1. To prove the efficacy of the Ayurvedic preparations in the management of diabetic nephropathy.
2. To give the scientific establishment to the observations which show that certain Ayurvedic treatments significantly correct albuminuria which is the cardinal feature of diabetic nephropathy and improve the renal function. This can provide a future possibility of a treatment to a large group of population suffering from diabetic nephropathy, which can be helpful in reducing the need of dialysis, avoiding or delaying renal transplantation.

Materials and Methods

Criteria for inclusion

1. All the patients were selected from the OPD and IPD of P. D. Patel Ayurveda Hospital, Nadiad, Gujarat.
2. Patients with a clinical positive history of type 2 DM having the clinical features of diabetic nephropathy like albuminuria, raised serum creatinine and blood urea were included.

Criteria for exclusion

1. Patients having any other associated clinical conditions, except complications of diabetes, were not included in the present study.

Management

1. The patients were being treated in OPD as well as IPD.

- A total of 130 patients of diabetes nephropathy had been registered for the study during the last 5 years.
- The patients were treated with the following: *Gokshuradi Guggulu* (containing mainly *Goksura*, *Guggulu*, *Triphala*, *Trikatu*, *Musta*): 1 g three times a day; *Bhumyamalaki*: 3 g two times a day; *Vasa* leaves' powder: 3 g two times a day; and *Shilajatvadi Vati* (modified) (containing mainly *Shilajatu*, *Guggulu* and *Guduchi*): 1 g thrice a day.
- The patients were kept under two categories. Group A patients, treated as indoor patients, were kept under strict supervision and were given a special planned diet (no grains except rice, no beans except mung beans, no oil except sesame oil, no ghee except cow ghee, cow's milk up to 350 ml/day, *chyavanprash* with milk in breakfast, no sharp spices, no sour food, no deep fried or fermented food, no *viruddhahara*). Group B patients were treated as outdoor patients. Group A included 94 patients and group B included 36 patients. Five patients from group A and 12 from group B were dropped out due to various reasons.
- The administration of antidiabetic drugs (if the patient was taking them) was 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 for 2 months.

Assessment of the results

- All the patients were clinically assessed before and after treatment.
- Changes in symptoms, albuminuria, blood urea and serum creatinine were observed.
- Results were analyzed statistically.

Results

The results obtained have been shown in Tables 1-4.

Discussion

In the diabetic patients, nephropathy develops mainly due to glomerular sclerosis and arteriosclerosis in kidneys. Kidney tissues get damaged after some period. According to *Ayurveda*,

nephropathy is a disease of *Mutravaha Srotas*. Though all the three *doshas* are involved in the disease, *Kapha* is responsible in blocking microvessels and developing microangiopathy. Damage in tissue can be repaired and prevented by the use of *Rasayanas* as they improve the nourishment, maintain the patency of the *Srotas* and improve the resistance of the tissues against any adversity. Any blockage can be removed by the preparations having *Lekhana* (scraping) effect on blocked microvessels as well as macrovessels.

Gokshuradi Guggulu (a combined Ayurvedic preparation) is a well-known and commonly used medicine in diseases of *Mutravaha Srotas*. It is specially indicated in *Prameha*, *Mutrakriccha* and *Mutraghata* along with other indications of *Mutra* and *Shukravaha Srotasa*.^[3] *Gokshura*, the main ingredient, is well known for its *Rasayana* effect, especially on *Mutravaha Srotas*. *Guggulu* (*Commiphora mukul*), another main ingredient, is a *Rasayana*^[4-6] and it has *Lekhana*^[7-8] (scraping) effect also. In addition, *Guggulu* has *Tridosahara*^[9-10] property also, by which it pacifies all the three *doshas*. *Bhumyamalaki* (*Phyllanthus niruri*) is a *Rasayana*^[11] and has been described as *Mutraroga Nashini* as well as *Pittameha Nashini*^[12] in *Rajnighantu*. *Vasa* (*Adhatoda vasica*) is described as *Mehahara*^[13-14] and *Rasayana*^[15-16] in classics. Practically, it is found effective in preventing albuminuria. *Shilajatvadi Vati*^[17] is indicated for *Prameha*. Since it is a combination of *Shilajatu*, *Guggulu* and *Guduchi*, it also works on *Mutravaha Srotas*. Hence, these preparations have been selected for the treatment of diabetic nephropathy.

During the assessments, it was observed that the patients of group A who were under strict supervision benefited well, whereas the patients of group B who were treated as outdoor patients and were not under strict supervision and did not follow instructions for diet and regimen did not benefit well.

Table 1 shows that in group A, serum creatinine reduced by 14.79%. This beneficial effect was statistically highly significant. Blood urea reduced by 23.41% and it is also statistically highly significant. This is encouraging and shows improvement in kidney functions. Urine albumin also significantly reduced by 18.88%. Serum total protein and serum albumin increased slightly around 4%, whereas serum globulin decreased by 2.71% which is expected. Though the effects on serum proteins are statistically insignificant, the results are promising.

Table 2 shows that all the signs and symptoms improved significantly in group A patients.

Table 3 shows that in Group B patients, the results were not

Table 1: Effect on laboratory investigations in group A

Investigation	Mean		%	SD	SE	t	P
	BT	AT					
Serum creatinine (mg/dl)	5.21	4.56	14.79	0.98	0.11	7.3	<0.001
Blood urea (mg/dl)	106	79.2	23.41	35.99	4.13	6.02	<0.001
Hemoglobin (g %)	9	9.1	0.45	1.23	0.14	0.28	>0.05
Post prandial blood sugar (mg/dl)	202	168	13.59	55.65	7.95	3.45	<0.001
Urine albumin (g/l)	1.5	1.3	18.88	0.85	0.1	3.03	<0.001
Urine sugar (g/l)	0.66	0.57	10.75	0.94	0.11	0.66	>0.05
Serum protein (mg/dl)	6.01	6.3	4.53	0.65	0.18	1.59	<0.05
Serum albumin (mg/dl)	3.15	3.26	3.3	0.68	0.19	0.57	>0.05
Serum globulin (mg/dl)	3.03	2.95	2.71	0.59	0.17	0.48	>0.05

BT - Before treatment; AT - After treatment

Table 2: Effect on signs and symptoms in group A

Symptoms	No. of patients reported	Mean		%	SD	SE	t	P
		BT	AT					
Urine output (l)		1	1.68	21.54	0.53	0.06	6.51	<0.001
Edema	74	1.97	0.61	69.01	0.89	0.1	12.76	<0.001
Nausea	26	2	0.19	90.39	1.02	0.2	9.03	<0.001
Vomiting	20	1.75	0.25	85.71	1.14	0.26	5.84	<0.001
Weakness	80	1.78	0.59	66.9	0.55	0.06	19.2	<0.001
Fatigue	20	1.3	0.25	80.77	0.6	0.14	7.76	<0.001
Loss of appetite	70	1.6	0.32	76.07	0.61	0.07	17.39	<0.001
Breathlessness	27	1.56	0.59	61.9	0.65	0.13	7.71	<0.001
Muscle cramps	11	1.45	0.18	87.5	0.79	0.24	5.37	<0.001
Hiccup	4	0.25	0	100	-	-	-	-
Pruritus	5	1.4	0.6	57.14	-	-	-	-
Drowsiness	2	1.5	0	100	-	-	-	-

Table 3: Effect on laboratory investigations in group B

Investigation	Mean		%	SD	SE	t	P
	BT	AT					
Serum creatinine (mg/dl)	5.65	7.3	22.6	1.5	0.3	5.39	<0.001
Blood urea (mg/dl)	108.66	113.8	3.9	34.48	7.52	0.59	>0.05
Hemoglobin (g %)	9.6	8.5	11.53	1.6	0.34	3.24	<0.05
PPBS (mg/dl)	197.33	174.6	10.92	43.79	11.3	1.9	>0.05
Urine albumin (g/l)	1.53	2.05	25.61	1	0.23	2.33	>0.05
Urine sugar (g/l)	0.74	0.64	12	0.96	0.23	0.38	>0.05
Serum protein (mg/dl)	7.16	6.63	7.67	-	-	-	-
Serum albumin (mg/dl)	3.68	3.33	9.52	-	-	-	-
Serum globulin (mg/dl)	3.6	3.3	8.33	-	-	-	-

Table 4: Effect on signs and symptoms in group B

Symptoms	Reported no. of patients	Mean		%	SD	SE	t	P
		BT	AT					
Urine output (l)		1	1.38	19.73	0.41	0.08	3.25	<0.01
Edema	22	2.05	1.24	37.74	0.81	0.17	4.46	<0.001
Nausea	7	1.71	0.71	58.33	1.4	0.54	1.87	>0.1
Vomiting	5	2.2	0.2	90.9				
Weakness	24	1.75	1.08	38.89	0.56	0.13	5.78	<0.001
Fatigue	4	2	0.5	75				
Loss of appetite	15	1.73	0.47	73.07	0.79	0.2	6.14	<0.001
Breathlessness	7	2.14	1.29	40	0.9	0.34	2.52	<0.01
Muscle cramps	3	1	1	0	-	-	-	-
Hiccup	1	2	0	100	-	-	-	-
Pruritus	3	2.33	1.67	28.57	-	-	-	-
Drowsiness	4	1.5	0.75	50	-	-	-	-

encouraging. In this group of patients, serum creatinine raised by 22.6% and blood urea increased by 3.9%. Urine albumin raised by 25.61%, whereas total serum protein decreased by 7.16%, serum albumin decreased by 9.52% and serum globulin decreased by 8.33%. All the results in this group were statistically insignificant except the rise in serum creatinine.

Table 4 shows that in this group also, signs and symptoms like urine

output, edema, weakness and loss of appetite significantly improved, but % of improvement was less in comparison to group A patients.

Conclusion

Ayurvedic preparations used in the present study are very much effective in improving the kidney functions and retarding the progression of diabetic nephropathy, especially with strict diet

restriction and regimen. It may be concluded that treatment is effective if the patient is on healthy food which is supportive enough to act against disease process. This type of food may be creating a favorable atmosphere in the body for better activity of the medicaments being used. This management may bring some new hope to the patients of diabetic nephropathy which usually terminates to chronic renal failure and ultimately to death.

Further studies to get much more data to establish the facts with more statistical and scientific strength are needed.

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