

An Ayurvedic intervention in the management of Pramehajanya Upadrava Vis-a-Vis Diabetic Nephropathy with Special reference to Microalbuminuria: A Pilot Study

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Abstract

Diabetes Mellitus is a multifactorial Clinical Syndrome affecting multiple systems and Organs. Type-1 DM is an autoimmune disease Characterized by antibody mediated and cell mediated destruction of pancreatic cells while Type-2 DM is Characterized by relative deficiency and resistance to insulin action. One of the micro vascular Complication of Diabetes mellitus is Diabetic Nephropathy also known as Diabetic Kidney disease (D.K.D.) leading to End Stage Renal disease (E.S.R.D.) in due course of time.

In Ayurveda classical texts, although there is no any direct reference in prameha Chapter of renal complications, but in 'Mutraghata Chapter' few Similar Conditions are explained and hence may be Co- related with nephropathies. The disease prameha happens due to derangement into Tridoshas (three humors) and especially Vata dosha dominance in etiopathogenesis leads to Madhumeha; the nearest Co- relate of D.M.

In the present study pre diagnosed patients of Type-2 D.M were randomly selected and Screened for microalbuminuria levels i.e. the albumin Levels in urine ranging between 30-300 mg/24 hr. urine. An Ayurvedic drug 'Gokshura - Brihatyadi Kashaya' was administered in the dose of 50 ml twice daily for 60 days. The subjective and objective parameters were assessed before Treatment and after completion of 60 days which shows significant reduction in both type of parameters.

Keywords: Diabetic Nephropathy; Gokshura Brihatyad Kashayam; Complications of DM; Type 2 DM.

1. Introduction

Diabetic Nephropathy is a microvascular Complication meaning affecting mostly at Capillary level of renal vasculature which eventually leads to Glomerular basement membrane thickening, Mesangial cells proliferation and glomerulosclerosis [1]. The four major pathological pathways due to hyperglycemia, are a) non enzymatic glycosylation, b) Polyol pathway, (c) Hexose monophosphate shunt pathway and d) protein Kinase-c pathway resulting in over production of super oxides leading to increased Oxidative stress and glomerular damage.[2] Diabetic Nephropathy is one of the leading Cause of end stage renal disease and accounts for 25%-40% of all Cases of ESRD'S[3]

In a cross sectional epidemiological Study in Diebetics, prevalence of microalbuminuria was found to be 39.8% and the prevalence of macroalbuminuria was 18.8%.[4] Egyptian renal data system (1996- 2001), evaluated for the prevalence of Diabetic Nephropathy, showed gradual increase from 8.9%, in 1996, to 14.5%. in 2001.[5] Renal failure is Second leading Cause of death in Diabetics.[6]

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Although angiotensin Converting enzyme (ACE) Inhibitors and angiotensin receptor blockers (ARB's) are used for prevention of nephropathies, these drugs are not always safe and effective. Hemodialysis significantly impairs quality of life and Renal transplants is having its own limitations. [7]

In the present study, the earliest manifestation of Diabetic Nephropathy- microalbuminuria i.e. Urinary excretion of albumin i.e. 30-300mg/ 24hr urine is considered as a central parameter [8] and analysed for the effect of An Ayurvedic Intervention 'Gokshura- Brihatyadi Kashaya' mentioned by Acharya Vagbhata in 'Ashtanga Hridayam'[9] Whole idea behind the study is to prevent the stage of Overt nephropathy and thereby prevent the progress of the disease. 6 patients of Type-2 DM were screened for microalbuminuria studies on the basis of inclusion - exclusion Criteria and Aurvedic drug was administered in prespecified dosages.The subjective and objective assessment after 60 days showed encouraging results.

1.1. Aim and objective

To evaluate the efficacy of 'Gokshura Brihatyadi Kashaya' in Pramehajanya upadrava vis-a-vis Diabetic Nephropathy with special reference to microalbuminura.

2. Material and methods

2.1. Study Design

prospective, Single arm, Clinical trial.

2.2. Location of Study

O.P.D and I.P.D. of LKR Ayurved College, Hospital

2.3. Sample Size -

No Standard method was used to calculate sample Size. 6 patients were selected for pilot study.

2.4. Preparation of Medicine

As per the textual reference in Ashtang Hridayam, raw drugs required to prepare the medicine were selected and purchased from GMP Certified pharmacy. The Kashaya was prepared under expert Supervision at R.S.B.K dept of home Institute.

Table showing drug details[10]

Table 1 Intervention Details

Sr. No.	Name of Drug	Latin Name
1	Brihati	Solanum indicus Linn.
2	Kantakari	Solanum Suratteense burm F.
3	Kutaja phala	Holarrhena Antidysevtrica Linn.
4	Patha	Cissampelos Pariera Linn.
5	Madhuka	Glyeerhiza glabra Linn.
6	Gokhsura	Tribulus Terrestris Linn.

2.5. Administration of drug

The patients were advised to take 25gm of Coarse powder and to add 400ml water in it. Then to boil it till it gets reduced to 1/8th quantity

i.e. 50ml. Kashaya prepared is to be taken twice a day before food[11]

2.5.1. Inclusion Criteria

patients of either sex and Age between 40 to 70 yrs.

pre diagnosed patients of type-2 DM with positive retinal changes on fundoscopy.

patients of Diabetic Nephropathy up to stage overt Diabetic Nephropathy with or without Changes in Sr. albumin Sr. Creatinine, & blood urea.

2.5.2. Exclusion Criteria

patients of type-1 DM and of type-2 on Insulin therapy.

patients having C.C.F., Cardiomyopathies, C.K.D, HTN, morbidly obese and other severe Systemic illnesses like HIV, TB etc

2.6. Subjective and Objective parameters.

Table Showing Subjective and objective parameters with gradation.

Table 2 Subjective and Objective parameters with gradation

Sr No.	Symptoms ^[12,13]	Gradation	Gradation
1	AkshikutaSh otha (Periorbital oedema)	Grade 0	No Oedema
		Grade 1	Oedema reducing to normal within 1hr
		Grade 2	Oedema reducing to normal within 1-6 hr
		Grade 3	Persistent Oedema
2	Pada shotha (Pedal Oedema)	Grade 0	No Oedema
		Grade 1	Occasional oedema
		Grade 2	Only visible in evening Hours
		Grade 3	Persistent oedema throughout day and night
3	Sarvanga Shotha (Anasarca)	Grade 0	No Oedema
		Grade 1	Minimal oedema
		Grade 2	Moderate oedema
		Grade 3	Sever oedema
4	Mutralpata (scanty Micturition)	Grade 0	2000 ml and above in 24 hrs
		Grade 1	2000 to 1500 ml in 24 hrs
		Grade 2	1500 ml to 1000 ml in 24 hrs
		Grade 3	Below 1500 ml
5	Kshudhalpata (Loss of appetite)	Grade 0	Desire to eat
		Grade 1	Decreased desire to eat with no nausea
		Grade 2	Decreased desire to eat with nausea
		Grade 3	No desire to eat with serve nausea
		Grade 0	No nausea

6	Hrillas / Chhardi (nausea & Vomiting)	Grade 1	nausea Without Vomiting
		Grade 2	nausea Without Vomiting Occasionally
		Grade 3	nausea Without Vomiting persistently
7	Microalbuminuria	Grade 0	0-29mg / 24hr urine
		Grade 1	30- 99 mg / 24hr urine
		Grade 2	100-199 mg / 24hr urine
		Grade 3	200-300 mg / 24hr urine

2.7. Observation and result

Table Showing Percentage wise relief in subjective & objective Parameters.

Table 3 Percentage wise relief in subjective and objective parameters

Sr No.	Symptoms	Percentage wise relief
1	Akshikuta Shotha (Periorbital oedema)	75 %
2	Pada shotha (Pedal Oedema)	53.49%
3	Sarvanga Shotha (Anasarca)	50%
4	Mutralpata (scanty Micturition)	56%
5	Kshudhalpata (Loss of appetite)	67%
6	Hrillas / Chhardi (nausea & Vomiting)	46%
7	Microalbuminuria	27%

Table 4 BT and AT relief after 60 days of intervention

Sr. No.	Akshikuta Shotha		Pada shotha		Sarvanga Sotha		Mutralpata		Kshudhalpata		Hrillas / Chhardi		Microalbuminuria (mg/24 hr urine)	
	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT
1	2	1	1	0	0	0	1	0	1	0	1	0	256	232
2	2	0	1	0	1	0	0	0	2	0	2	0	265	234
3	2	1	2	1	0	0	1	0	3	1	3	1	126	116
4	1	0	2	0	1	0	2	0	2	1	1	0	127	114
5	1	1	1	0	0	0	1	0	2	0	1	0	129	116
6	1	0	1	0	1	0	1	0	2	0	2	0	157	134

3. Discussion

In this study 6 individuals fulfilling the Criteria for diagnosis were selected. It is Observed that in most of Subjective parameters there is more than 50%, relief.

Sarvang shotha was mild grade & Present in 3 patients only. Hrillas and Chhardi symptoms are reduced by 46%. Microalbuminuria levels showed decrease showing that glomerular alterations are stable or declining.

3.1. Probable made of action

Brihatyadi Gana drugs are stated tridosha Shamak, Pachaneeya, Hridrogaghna and mutrakrichrahara by Acharya Sushruta and Acharya Vaghhata.

Drugs like Brihati, kantakari and patha having Katu, tikta rasa dominance with ushna Virya. These durgs are especially tridosha Shamak, Deepaneeya and pachaneeya, and having diuretic action.

Drugs like madhuka and Gokshura are rasayana & diuretic and detoxifier.

With these properties this unique Combination may be helpful in reducing hyperglycemic effect on glomerulus and thereby maintaining a normalacy to glomerular basement membrane it restricts Progression of glomerulosclerosis.

4. Conclusion

The Study Concludes that 'Gokshura Brihatyadi Kashaya' in the dose of 50ml twice a day help in restricting albumin loss in urine and thereby delaying the progression of glomerulosclerosis. Alongwith Preserving renal functions it pacifies other symptoms.

The present study is a pilot study on a small Sample. In future multicentric studies with larger Sample size may be required to validate nephroprotective effect of the trial drug.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

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