

ROLE OF MUSTADI YAPAN BASTI IN THE MANAGEMENT OF DIABETIC NEPHROPATHY

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ABSTRACT

Diabetic nephropathy is a progressive kidney disease caused by damage to the capillaries in the kidney's glomeruli. It is due to longstanding diabetes mellitus and is a prime reason for dialysis in many developed countries. The aim of present study was to evaluate the efficacy of *Mustadi yapan basti* in Diabetic Nephropathy. 30 Patient with sign and symptom of Diabetic nephropathy were selected as per inclusion criteria. Each patient were treat with *Mustadi yapan basti* given per rectal. The dose of *basti* given per rectal is 500 ml to 600 ml as per required for the period of 16 days. Follow up of the patient done per weekly. Assessment was done before treatment, during treatment, after treatment and after follow up period. Statically analysis was done which leads to conclusion that *Mustadi yapan basti* was effective in reducing the clinical sign and symptom of Diabetic Nephropathy.

Key words: Diabetic Mellitus, Diabetic Neuropathy, *Mustadi yaapan basti*.

INTRODUCTION

Diabetic Mellitus is silent killer, which is spreading as an epidemic all over the world. It is a metabolic disorder of carbohydrate, fat & Protein metabolism caused because of absolute or relative deficiency of insulin secretion and insulin action or both.

Diabetes is fast gaining the status of a potential epidemic in India with more than 6 million diabetic individual currently diagnosed with the disease.[1][2] Major concern for this huge increase is modernization of society, altered habits of life style and immense stress caused because of dreadful competitions. Diabetic Nephropathy is a life threatening complication of Diabetic Mellitus. It is a specific form of renal disease caused as manifestation of microangiopathy and contributes a major role in causing death

among diabetes. About 25% to 40% of the death which occurs in Diabetes which is the last stage of Diabetic Nephropathy. About 44 % of the patients of DM develop Diabetic Nephropathy. [3]

Diabetic nephropathy is a progressive kidney disease caused by damage to the capillaries in the kidney's glomeruli.[4] It is mainly characterized by the gross proteinurea which leads to symptom like puffiness on face, Oedema over legs and hypertension i.e. nephrotic syndrome and diffuse scarring of the glomeruli. It is classified as a small blood vessel complication of diabetes. As the disease become more chronic, symptom like azatoemia, weakness anemia dyspnea on exertion develops.

The drugs in the *Mustadi yapan basti* might be able to break the pathophysio-

ology of diabetic nephropathy. All Ayurvedic principles were kept in mind while preparing *Basti*. The present study aims the effect of *Muatadi Yapan Basti* [5] in Patients of Diabetic Nephropathy.

AIMS AND OBJECTIVES:

1. To review the literature of *Madhumehajanya upadrava* in reference to (Diabetic Nephropathy).
2. To review the literature of *Mustadi yapan Basti* in Ayurvedic text.

Musta (*Cyperus rotundus*),
Bala (*Sida cordifolia*),
Rasana (*Pluchea lanceolata*),
Katurohini (*Picrorhiza kurroa*),
Punarnava (*Boerhavia diffusa*),
Gudhuchi (*Tinospora cordifolia*),
Prushnaparni (*Uraria picta*),
Kantakari (*Solanum xanthocarpum*),
and *Madanphala*. (*Randia spinosa*).

Kalk drugs used are :

Shatpushapa (*Foeniculum vulgare*),
Madhuyasti (*Glycyrrhiza glabra* linn.),
Kutaja (*Holarrhena antidysentrica* linn),
Rasanjana (*Berberis aristata*),
Saindhava and *Priyangu* (*Prunus mahaleb*) with milk, *Mudhu* (*Honey*), *Ghee* and *Mansarasa*.

Kwatha drugs used are *Musta* (*Cyperus rotundus*).

Preparation of *Basti*:

Bharad churana of all *kwath dravya* mention above are taken with crushed powder of *madan phala* and then water added to it.

By giving heat to the above liquid decoction is prepared adding the milk the decoction is further heated till the watery contains was evaporated and still milk is left alone.

The above medicated milk taken and mix with the *maansarasa*, *madhu*, *ghrita* along with all *prakshepa* dravyas. Mix all the contains and lukewarm the decoction and used for *Basti*.

3. To evaluate the efficacy of *Mustadi Yapan Basti* in Diabetic Nephropathy.

MATERIALS AND METHODS:

Drugs used for *basti* is '*Muastadi yapan basti*'.

Snehan and *swedan* done as per patients. Drugs used in *Muastadi yapan basti* as *kwatha dravya* are :

Ushira (*Vetiveria zizanioidis*),
Aragvadha (*Cassia fistula*),
Bibhitaka (*Terminalia bellirica*),
Trayamana (*Jentiana kuroo*),
Manjistha (*Rubia cordifolia*),
Shaliparni (*Desmodium Genticum*),
Gokshur (*Tribulus terrestris*),
Bruhati (*Solanum indicum*).

Source of data and method of collection :

The 30 patients were randomly selected as per inclusion criteria from O.P.D. & I.P.D. of department of *Kayachikitsa*, *K.G. Mittal Ayurved Mahavidhyalaya*.

Research design: Open controlled clinical Study is done. Assessment is done initially, during and after the treatment. Final assessment done at the end of one month.

Informed consent: Patient fulfilling criteria for selection were included under the study after receiving their written consent.

Ethical approval: The institutional ethical committee had been approved this research work.

Inclusion criteria:

- Patients having age above 30 years were considered irrespective of sex.
- Patients having sign and symptoms of diabetic nephropathy.

- Patient with wash effect of previous allopathic drugs minimum of several days.
- Patient having fasting Blood Sugar up to 300 mg /dl and post prandial up to 400mg/dl

Exclusion Criteria:

- Patient with chronic disease like Koch's.
- Patients with Renal Calculi , Renal Tumor, Polycystic Kidney or Nephrocalcinosis.
- Patient with HIV, other cause of CRF , Juvenile Diabetes Mellitus or patient with Insulin Depended Diabetes Mellitus.

INVESTIGATION: The investigation done which includes ; CBC/ESR (Hb), FBS, PLBS, Sr. Creatinine , BUN, Sr. Cholesterol, Sr. Triglyceride, Urine al-

bumin, Urea, Urine ketone bodies, Urine pus cells.(as per required)

Treatment schedule: Required assessment done before treatment, after treatment and after follow up of 16 days.

Drug used: *Mustadi Yapan Basti*.

Time of Administration: Before lunch (*Prabhukta kala*) between 10.00 am to 10.30 am.

Dose of Drug: 500 ml to 600 ml

CLINICAL ASSESSMENT: Following grading pattern were adopted for the subjective as well as objective parameters for the assessment of clinical condition of patient before treatment (BT) and after treatment (AT).

1) Akshikutshotha (Swelling around eyes):

Grade 0	No swelling around eyes
Grade 1	Morning infra orbital facial Oedema reducing to normal within one hour.
Grade 2	Swelling around eyes persistent for 1 – 6 hours from morning
Grade 3	Persistent swelling around eyes. Swelling around eyes persistent for 1 – 6 hours from morning

2) Anasarka (Sarwangshotha) :

Grade 0	No Swelling
Grade 1	Morning whole body swelling reducing to normal within one hour
Grade 2	Morning whole body swelling persistent for 1 – 6 hours from morning
Grade 3	Persistent swelling throughout the day.

3) Pedal Oedema ;

Grade 0	No Swelling
Grade 1	Occasional pedal Oedema
Grade 2	Pedal Oedema only visible in evening hours.
Grade 3	Persistent pedal Oedema throughout day and night

4) Weakness (Daurbalya) :

Grade 0	Normal with the best efficacy in walking fast for long distance.
Grade 1	Able to walk for 1 – 2 kilometer.

Grade 2	Able to walk for one kilometer.
Grade 3	Unable to walk and work for even routine minor.

5) Paleness / Anemia (Panduta) :

Grade 0	Hb% in Male 17 gms. And in Female 15 gms.
Grade 1	Hb% in Male between 13 – 17 gms and in female between 11 – 15 gms.
Grade 2	Hb% in Male between 10 – 13 gms and in female between 8 – 11 gms.
Grade 3	Hb% in Male less than 10 gms and in female less than 8 gms.

6) Headache (Shirshoola) :

Grade 0	No Headache.
Grade 1	Headache is on and off type.
Grade 2	After getting from bed , during evening time.
Grade 3	Headache is severe than difficulty in doing work.

7) Loss of appetite (Shkudamanya) :

Grade 0	Normal appetite.
Grade 1	Intermittently avoiding food.
Grade 2	Not feeling hungry but eating few food.
Grade 3	Not feeling hungry at all.

8) Nausea & Vomiting (Hrillas and Chardi) :

Grade 0	Absent.
Grade 1	Occasional Nausea or vomiting.
Grade 2	Intermittently after eating.
Grade 3	Continuous nausea and vomiting.

9) Urine output (Mutralpata) :

Grade 0	Normal urine output i.e. 2000 ml and above in 24 hours.
Grade 1	Urine output 2000 ml and 1500 ml in 24 hours.
Grade 2	Urine output 1500 ml and 1000 ml in 24 hours.
Grade 3	Urine output below 1000 ml.

Table no. 1] Assessment of Objective Criteria:

Sr. No	Investigation	Before Treatment			After Treatment		
		Good	Fair	Poor	Good	Fair	Poor
1	CBC/ESR (Hb)	13 - 17 (M) 11 - 15 (F)	10 – 13 (M) 8 to 11 (F)	Less than 10 (M)	13 - 17 (M) 11 - 15 (F)	10 – 13 (M) 8 to 11 (F)	Less than 10 (M)
2	FBS	70 - 110	110 – 150	Above 150	70 - 110	110 - 150	Above 150
3	PPBS	90 - 130	130 – 180	Above 180	90 - 130	130 – 180	Above 180
4	Sr.Triglyceride	25 - 150	150 – 200	Above 200	25 - 150	150 – 200	Above 200
5	Sr.Cholesterol	140 – 200	200 – 270	Above 270	140 – 200	200 - 270	Above 270

6	Sr.Creatinine	0.7 – 1.4 (M) 0.6 – 1.2 (F)	0.7 – 1.4(M) 0.6 – 1. (F)	Above 3.5 (M) Above 3.3 (F)	0.7 – 1.4(M) 0.6 – 1.2 (F)	0.7 – 1.4 (M) 0.6 – 1. (F)	Above 3.5 (M) Above 3.3 (F)
7	BUN	6 – 21	21 – 50	Above 50	6 – 21	21 - 50	Above 50
8	Urea	13 – 45	45 – 70	Above 70	13 – 45	45 - 70	Above 70
9	Urine Albumin	Nil	Trace +	++ Above	Nil	Trace +	++ Above
10	Urine Ketone Bodies	Nil	Trace +	++ Above	Nil	Trace +	++ Above
11	Urine pus cells	5 – 6 /hpf	6 – 105	Above 15	5 – 6 /hpf	6 - 105	Above 15

Statically Analysis: The efficacy of treatment was analyzed by calculating the mean, standard deviation of the parameters t & p values were found using paired 't' test.

Table no. 2] Analytical values of 't test' of symptoms:

Sr. No	Lakshana	Means score		Mean Diff.	S.D.	S.E.	't'	'p'
		B.T.	A.T.					
1	Swelling around face (<i>Mukhashotha</i>)	2.0	1.067	0.9333	0.739	0.135	6.911	0.0001
2	Anasarca (<i>Sarvang shotha</i>)	0.466	0.366	0.366	0.305	0.055	1.795	0.0001
3	Pedal oedema (<i>Pa-dashotha</i>)	1.800	1.100	1.100	0.535	0.0976	7.167	0.0001
4	Headache (<i>Shirosh-ula</i>)	0.533	0.433	0.433	0.3051	0.0557	1.795	0.083
5	Nausea , Vomiting (<i>Hrillas, Chhardi</i>)	0.300	0.133	0.133	0.379	0.0692	2.408	0.031
6	Pallar (<i>Panduta</i>)	1.83	1.800	1.800	0.3198	0.0583	0.570	0.2863
7	Weakness (<i>Daurbal-ya</i>)	2.067	1.567	1.567	0.5085	6.0928	5.385	0.0001
8	Urine Output (<i>Mu-tral-pata</i>)	1.167	0.9667	0.9667	0.406	0.0742	2.693	0.0058

In above observation the symptom like Swelling around face, Anasarca, Pedal Oedema and Weakness shows significant results. There was significant increase in the urine output. No significant result

OBSERVATION, ANALYSIS AND INTERPRETATIONS:

Data related to response to the treatment:

was seen in symptom like pallor, Headache, Nausea and vomiting.

Table no.3] Analytical value of 't test' in Investigation :

Sr. No	Investigation	Mean Score		Mean Diff.	S.D.	S.E.	't'	'P'
		B.T.	A.T.					
1	CBC/ESR (Hb)	1.76	1.60	0.1667	0.4611	0.0841	1.980	0.028
2	FBS	1.73	1.26	0.4667	0.628	0.114	4.065	0.0002
3	PPBS	2.33	2.133	0.200	0.406	0.0742	2.69	0.0058
4	Sr.Triglyceride	1.56	1.53	0.0033	0.1826	0.033	1.00	0.162
5	Sr.Cholesterol	1.50	1.40	0.100	0.3051	0.0557	1.795	0.015
6	Sr.Creatinine	2.10	1.93	0.1667	0.3790	0.069	2.40	0.0113
7	BUN	1.60	1.50	0.100	0.3051	0.0357	1.795	0.415

						1		
8	Urea	1.63	1.50	0.1333	0.3457	0.0631	2.1 12	0.021
9	Urine Albumin	1.96	1.73	0.2333	0.4302	0.0785	2.97	0.0030
10	Urine Ketone Bodies	1.10	1.67	0.033	0.1826	0.033	1.00	0.1628
11	Urine pus cells	1.50	1146	0.033	0.4901	0.089	0.372	0.3561

Result: There is significant result seen in objective assessment in serum creatinine, BUN, Serum Urea, Urine Albumin while extremely significant seen in Fasting Blood Sugar (FBS).

DISCUSSION

Diabetes Mellitus is a metabolic disorder of carbohydrate, fat & Protein metabolism caused because of absolute or relative deficiency of insulin secretion and insulin action or both[6]. Ayurvedic principles of treatment mainly aim in correcting the underlying pathology of the disease rather than symptomatic management. So Ayurveda can offer better solution in the management of chronic condition like Diabetes and its complications. According to Ayurveda principal Kidney is *Rakta meda prasadaka*[7] i.e. its structure and function maintain by *Rakta dhatu and meda dhatu*. Diabetic nephropathy is cause due to *Kapha dosha vridhi* which cause the *meda* and *mansa dhatuagani kshya* and vitiation of *abaddha*(Abnormal) *meda dhatu* and cause obstruction in *mootravaha strotas* which cause *apaan vayu karma vikruti and Vruksya*(Kidney) *rachanatamak* (Anatomical) and *kriyatamaka*(Functional) *vikruti*(Abnormalities). Due to which Diabetic nephropathy occur in long standing Diabetes Mellitus. Now our choice of drug is a drug which can remove the *avarodha* formed by *meda* and *kleda*, which is *kaphashamak* and also *balya* for *mootravaha strotas* can give symptomatic relief in Diabetic Nephropathy.

Mustadi yapan basti with its *Laghu, Ruksha guna* and *ushna virya* [8] might

able to break the *avarodha* of *meda kleda*, as it is given in form of *Basti* it will normalised the *vyana vaayu*. The above properties of *Basti* are suited for the condition of *dosha dushya* of the disease. The drugs in the *Mustadi yapan basti* might be able to break the pathophysiology of Diabetic Nephropathy.

The study was carried out on 30 patients Diabetic Nephropathy. Clinical effect of *Mustadi Yapan Basti* was check in case of Diabetic Nephropathy. The Basti show's significant result to the symptoms like swelling around eyes and on face (*Mukhoshotha*), Anasaraka (*Sarvangshotha*), Pedal oedema (*Padashotha*), Weakness (*Durbalya*), Urine output (*Mutralpata*) while in other symptoms shows no significant results.

An objective assessment sugar level specially FLBS, Serum Creatinine, BUN, Serum Urea, and Urine Albumin shows considered significant results.

CONCLUSION:

The disease Diabetic Neuropathy one of the the chronic complication of Diabetes so far there is no established therapy for it. It is one of our trial to treat the disease by knowing the *Dosh - Dushya* involvement in the *Samprapti* like Swelling around face, Anasarca, Pedal Oedema and Weakness shows significant results. There was significant increase in the urine output. No significant result was seen in symptom like pallor, headache, nausea and vomiting. There was significance changes seen in blood sugar level, Sr. Creatinine and urine albumin excretion, investigation in patient of diabetic

nephropathy . While no specific changes were seen in hemoglobin, serum Triglyceride, serum cholesterol and urine pus cells. In this study shows clinical improvement in 45% and pathological improvement 40% and there is no specific radiological changes were seen. *Mustadi yaapan basti* reduced the clinical sign and symptom of Diabetic Neuropathy.

ACKNOWLEDGEMENT:

The author is very much thankful to the Guide and Professor, Department of Kayachikitsa. I am also very much thankful to the hospital staff, Laboratory staff and the patient of IPD and OPD , Smt. K.G.M.P. Ayurved Hospital for their co-operation during the study.

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Source of support: Nil

Conflict of interest: None Declared