



Clinical Efficacy Of *Bhudhatryadi Yoga* In The Management Of *Prameha Roga* W.S.R. To Diabetes Mellitus

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ABSTRACT: -

Background -In spite of all sorts of advancements of science, in this world, man is not able to sail himself in the boat of happy & healthy life. Unnatural ways of life style, increased population and moreover world of machines has created unlimited desires in human mind on the one hand, while on the other hand, it has originated anxiety, anger, hostility & grief directly or indirectly. So many diseases are there which are output of unnatural dietary habits, restless lifestyle and stress, one of such is Diabetes. The syndrome of Diabetes Mellitus is largely covered under the broad heading of *Prameha*. *Prameha* is a disease which is revealed by *Mutravaha Srotasa* [Urinary system].

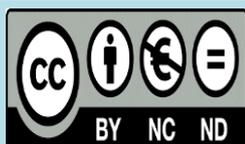
Aim- To assess the clinical efficacy of *Bhudhatryadi Yoga* in in the management of *Prameha Roga* w.s.r. to Diabetes Mellitus

Material and Method-30 Patients were selected randomly from OPD and IPD of Kayachiktisa Deptt. of Jammu Institute of Ayurveda and Research hospital. Selected patients were administered *Bhudhatryadi yoga* 3gm bid for a period of 45 days along with life style modifications. Weekly follow up of patients was done, while biochemical investigations were carried out before and after trial.

Result-. Marked Improvement was seen in 16.66% patients. 40% of cases presented Moderate Improvement and 36.66% were categorized as Mildly Improved after the treatment.

Conclusion- *Bhudhatryadi yoga* has better effects in reducing blood sugar level.

Keywords: *Diabetes Mellitus, Bhudhatryadi yoga, Gramya Ahara*



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INTRODUCTION

Ayurveda is one of the most ancient medical sciences of the world. It conceives and describes the basic and applied aspects of life process, health, disease and its management in terms of its own principles and approaches.¹ *Prameha* described in *Ayurvedic* literature have similarity with Type-2 Non-Insulin Dependent Diabetes Mellitus (NIDDM).² Here the study is focused on Type-2 Diabetic patients only to understand its etiopathogenesis and actual line of treatment from *Ayurvedic* view point. Diabetes Mellitus (DM) is a chronic disease marked by elevated blood glucose level.³ It affects 5-6% of the global adult population. Type 2 diabetes prevalence is rising at alarming rates worldwide because of increased urbanization, high prevalence of obesity, sedentary lifestyles and stress, among other factors.⁴ Up to 80% of type 2 Diabetes is preventable by adopting a healthy diet and increasing physical activity. India has the largest diabetes population in the world with an estimated 41 million people, amounting to 6% of the adult population. India is the kingdom of Diabetes, having more than 5 crore patients of it.⁵ Diabetes has shifted down a generation as with rapid increase in prevalence of diabetes, the age of susception is decreasing promptly and has touched the thirties which are economically most productive years. The study drug selected for this clinical trial is *Bhudhatryadi Yoga* stated by *Yoga Ratnakar*.⁶ The effect of the compound may be synergistic or antagonist depending upon the similar qualities and opposite qualities of the *Dravyas* respectively.⁷ The final effect of combination of substances having similar properties i.e. *Prakratismasamaveta* can be inferred due to similarity of properties of individual

exhibits synergistic effects while effect of combination of substances having different properties i.e. *Vikrativisamasamveta* can't be inferred through knowing properties of individual substances. Our Aim is to study the clinical efficacy of *Bhudhatryadi Yoga* in *Prameha Roga* (Diabetes Mellitus)

AIMS AND OBJECTIVE

To assess the efficacy of *Bhudhatryadi yoga* in *Prameha Roga* w.s.r. to Diabetes Mellitus

MATERIAL AND METHOD

Selection of Case

- 30 Patients were selected randomly from OPD and IPD of Kayachikitsa Deptt. of Jammu Institute of Ayurveda and Research hospital.
- All the patients were clinically diagnosed cases of Diabetes Mellitus and were properly registered.
- Details of examination and investigations were carefully recorded in the proforma.

Inclusion Criteria

- Mild to moderate cases of Diabetes Mellitus having fasting blood sugar within range:-
Mild –126 to 140mg/dl
Moderate –140 to 160mg/dl
- Patients above the age group of 18 years and below 60 years were selected.
- Patients within 1 yr of diagnosis for diabetes mellitus were selected for the study.

Exclusion Criteria

- Patients with type 1 D.M.

- Type 2 D.M. patients who were insulin dependent.
- Patients with F.B.S. more than 160mg/dl & P.P.B.S. more than 220mg/dl.
- Diabetic patients with severe complications like cardiovascular diseases, Nephropathy, Retinopathy, Diabetic foot etc.
- Patients of Gestational diabetes.
- Diabetes due to endocrinopathy e.g. Cushing's syndrome, Hyperthyroidism, Acromegaly etc.
- Patients with certain genetic syndromes which are sometimes associated with diabetes mellitus e.g. Down's syndrome, Klinefelter's syndrome, Turner's syndrome etc.
- Patients suffering from terminal sickness.
- Patients who don't adopt or follow the instructions regarding life style modifications during the trial period.

Investigations –

Following investigations were carried out in all the patients.

1. Fasting blood sugar (F.B.S) and Post prandial blood sugar (P.P.B.S.).
 2. Routine examination of blood like Hb%, T.L.C., D.L.C., E.S.R. , C.T, B.T. to exclude any pathology.
 3. Routine examination of urine.
- **Special investigation were done in few Patient ie.HbA_{1c}**

PLAN OF STUDY:

Patients randomly selected for the study were taken in single group. Research Proforma was filled. In the patients who were taking oral hypoglycemic drugs, blood sugar level at that time was taken as basal level. Study drug was administered. Effect of

study drug was observed in relation to basal sugar level and sign and symptoms.

Design:

It is a single blind clinical study with a pre-test and post-test design. In this study, 30 patients diagnosed of diabetes mellitus of either sex were subjected to clinical study.

Intervention:

Bhudhatryadi yoga was orally administered in a dose of 3gm twice daily after meals for 45days. Recently diagnosed patients, mild to moderate cases of type 2 Diabetes (NIDDM- *Apathya Nimittaja Prameha*) were kept on *Bhudhatryadi yoga* along with controlled diet and physical activity from *pathya* point of view.

These patients were provided a proper diet chart planned according to our classics.

Duration of study- 45days

Criteria for Assessment:

Assessment of result has been made on the basis of following criteria, after completion of treatment.

1. Sign and symptoms before and after treatment.
2. F.B.S. and P.P.B.S. before and after treatment.
3. Assessment of changes observed in sign and symptoms and biochemical parameter is done on the basis of specific scoring pattern.
4. Depending upon severity, following symptoms score was utilized and assessment of clinical sign and symptoms was done.

OBSERVATIONS

Total 30 patients were registered for the present study.

Table 1: Age wise distribution of patients:

Age(Years)	No. of patients	Percentage
0-10	0	0
11-20	0	0
21-30	0	0
31-40	3	10
41-50	15	50
51-60	12	40

Patients selected for study were in the range of 31-60 yrs of age. Maximum no. of patients i.e. 60% belonged to the age group 41-50 yrs. 30% of

patients belonged to 51-60 yrs age group and 10% of patients were in between 31-40 yrs of age.

Table 2: Ahara wise distribution of patients:

Ahara	No. of patients	Percentage
Veg.	17	56.67
Non-veg	0	00.00
Mixed	13	43.33

Out of 30 patients, 56.67% of patients were purely (Veg. & Non-veg.) diet. Vegetarian, 43.33% of patients were taking Mixed

Table 3: Addiction wise distribution of patients:

Addiction	No. of patients	Percentage
Tea	15	50
Coffee	0	00.00
Tobacco	4	13.33
Smoking	5	16.67
Alcohol	4	13.33
Soft drinks	0	00.00
No addiction	2	6.67

Maximum no. of patients (50%) were found habituated to Tea, 16.66% were addicted to Smoking, 13.33% were addicted to Tobacco and

Alcohol and 6.66% were not having any kind of addiction.

Table 4: Sleeping pattern wise distribution of patients:

Nidra (sleep)	No. of patients	Percentage
Samyaka (proper)	20	66.67
Asamyaka (improper)	10	33.33

Diwaswapa (day sleep)

No diwaswapa (day sleep)	10	33.33
Regular	15	50
Irregular	5	16.67

Ratrijagarana (awake during night)

No Ratrijagarana	23	76.67
Regular	1	3.33
Irregular	6	20

Data shows that 33.33% of the patients were having *Asamyaka Nidra* (improper sleep) and 66.67% were having *Samyaka Nidra* (proper sleep). 50% of the patients were having Regular *Diwaswapa*, 16.66% were having Irregular *Diwaswapa* (day sleep) and

33.33% of them were not habituated to *Diwaswapa* (day sleep). Max. no. of patients (76.67%) were not habituated to *Ratrijagarana*, 3.33% were having Regular *Ratrijagarana* and 20% were doing Irregular *Ratrijagarana*.

Table 4: Distribution of patients according to Nature of work:

Nature of work	No. of patients	Percentage
Sedentary	24	80
Active	4	13.33
Heavy	2	6.67

Data reveals that out of 30 patients, 80% of the patients were having Sedentary nature of work,

13.3% were performing Active work and 6.66% were having Heavy physical work load.

Table 5: Distribution of patients according to Bowel-habit:

Bowel-habit	No. of patients	Percentage
Regular	10	33.33
Irregular	5	16.67
Constipated	15	50

Table 5 shows that, 50% of the patients were having Constipated bowel habit, 33.33% of them were

having Regular bowel-habit and 16.67% had Irregular bowel-habit.

Table 6: Prakriti wise (Constitution) distribution of patients:

Prakriti (Sharira)	No. of patients	Percentage
Vata pitta	4	13.33
Vata kapha	10	33.33
Kapha pitta	16	53.34

Table 6 indicates that, 53.34% of patients were having *Kapha-pitta* dominance in their *Prakriti*,

33.33% were having *Vata-kaphaja Prakriti* and 13.33% had *Vata-pittaja Prakriti*.

Table 7: Aharashakti wise distribution of patients:

Aharashakti	No. of patients	Percentage
Abhyavaharanashakti		
<i>Pravara</i> (finest)	8	26.67
<i>Madhyama</i> (medium)	20	66.67
<i>Avara</i> (weak)	2	6.66
Jaranashakti		
<i>Pravara</i> (finest)	8	26.67
<i>Madhyama</i> (medium)	21	70
<i>Avara</i> (weak)	1	3.33

Table 7 gives information of *Aharashakti* of 30 patients which can be assessed with the help of *Abhyavaharanashakti* and *Jaranashakti*. Majority of patients i.e. 66.67% were having *Madhyama*

Abhyavaharanashakti, 26.67% had *Pravara* and 6.66% had *Avara Abhyavaharana-shakti*. 70% of the patients had *Madhyama Jaranashakti*, 26.67% had *Pravara* and 3.33% had *Avara Jaranashakti*

Table 8: Signs and Symptoms observed in patients:

Main Signs and Symptoms	No. of patients	Percentage
<i>Prabhuta mutrata</i> (Polyurea)	30	100
<i>Avila mutrata</i> (Turbid urine)	10	33.33
<i>Trishnadhikya & Gal-talu shosha</i> (excessive thirst and dryness of throat)	30	100

Table 8 indicates observations of Main Sign and Symptoms specific to *Prameha*. Data reveals that *Prabhuta mutrata* and *Avila mutrata* were found in

100% and 33.33% of patients respectively. *Trishnadhikya and Gal-talu shosha* were found in 100% of patients.

RESULT

EFFICACY OF TREATMENT

- Main Signs and Symptoms of *Prameha*.

Table 10: Effect on Prabhuta Mutrata (Polyurea):

	Mean Score		% Relief	S.D. (±)	S.E. (±)	t	P
	B.T.	A.T.					
N=30	1.86	0.53	71.50	0.479	0.087	15.23	<0.001

The table 21 shows that mean initial score for *Prabhuta mutrata* was 1.86, which reduced to 0.53, showing 71.50% improvement. Statistical analysis

shows that the improvement was highly significant at $P < 0.001$.

Table 11: Effect on Avila Mutrata (Turbid urine):

	Mean Score		% Relief	S.D. (±)	S.E. (±)	t	P
	B.T.	A.T.					
N=10	2.20	1.70	22.72	0.71	0.22	2.236	>0.05

In this group, mean score before starting treatment was 2.20 which reduced to 1.70 with 22.72% relief

and gives calculated t value 2.23 which is insignificant at $p > 0.05$

Table 12: Effect on Trishnadhikya & Gala-talu-shosha

	Mean Score		% Relief	S.D. (±)	S.E. (±)	t	P
	B.T.	A.T.					
N=30	2.20	0.93	57.72	0.45	0.08	15.42	<0.001

Table 12 shows mean score before starting treatment was 2.20 which reduced to 0.93 with relief

of 57.72% and calculated 't' value was 15.42 which was found highly significant at $P < 0.001$.

Table 13: Effect on F.B.S. :

	Mean Score		% Relief	S.D. (±)	S.E. (±)	t	P
	B.T.	A.T.					
N=30	147.96	109.33	26.11	4.73	0.86	44.66	<0.001

Mean score before starting treatment was 147.96 which reduced to 109.33 with relief of 26.11% and

calculated 't' value was 44.66 which was found highly significant at $P < 0.001$.

Table 14: Effect on P.P.B.S. :

	Mean Score		% Relief	S.D. (±)	S.E. (±)	t	P
	B.T.	A.T.					
N=30	195.23	154.40	20.91	2.26	0.41	98.95	<0.001

Mean score before starting treatment was 195.23 which reduced to 154.40 with relief of 20.91% and

calculated 't' value was 98.95 which was found highly significant at $P < 0.001$.

Table 15 OVERALL EFFECT OF THERAPY

- **Improvement In Signs and Symptoms:**

RESULTS	Patients	Percentage
Controlled	2	6.66
Marked Improvement	5	16.66
Moderate Improvement	12	40
Mild Improvement	11	36.66
Unchanged	0	0.00

2 patients (6.66%) assessed as controlled and 5 patients (16.66%) as Markedly Improved. Moderate Improvement was seen in 12 patients (40%) whereas Mild Improvement was observed in 11

patients (36.66%). All patients responded to treatment to some extent and no patient assessed as unchanged

Improvement In Blood Sugar Level

RESULTS	F.B.S.		P.P.B.S.	
	Patients	Percentage	Patients	Percentage
Controlled	7	23.33	3	10
Marked Improvement	10	33.34	6	20
Moderate Improvement	9	30	9	30
Mild Improvement	4	13.33	10	33.33
Unchanged	0	0	2	6.67

Control in F.B.S. was achieved by 7 patients (23.33%) and that of in P.P.B.S. by 3 patients (10%). Marked Improvement in F.B.S. was observed in 10 patients (33.34%) while 6 patients (20%) for P.P.B.S. was categorized under this grade. Moderate Improvement in F.B.S. and in P.P.B.S. was observed

in 9 patients (30%). Mild improvement in F.B.S. and in P.P.B.S. was observed in 4 patients (13.33%) and 10 patients (6.67%) respectively. P.P.B.S. of 2 patients (6.67%) remained unchanged.

DISCUSSION

Prameha (Diabetes Mellitus) has been mentioned as *Aanushangi Vyadhi* (hereditary disease) by *Maharishi Charaka*. *Chakrapani* explained the term *Aanushangi* as '*Punarbhavi*', means a disease that presents itself again and again.⁸ The rising burden of Type 2 diabetes and other non-communicable diseases which has occurred with modernization can be understood in the context of 'epidemiological

transition'⁹. Rapid socio-economic development and coca colonization have resulted in a life style transition from traditional to modern.¹⁰ In virtually all populations, higher fat diets and decreased physical activity have accompanied the benefits of modernization. Exercise has been engineered out of our daily lives, both in the work place & leisure. These lifestyle changes when combined with increasing longevity form the basis of the dynamic Type 2 diabetes epidemic that we are witnessing

today.¹¹ The western lifestyle must have unmasked the effects of pre-existing genes because the consistent result has been diabetes within a few decades. The present study was completed to evaluate the efficacy of an *Bhudhatryadi Yoga* in *Prameha Roga* (diabetes mellitus). The outcome of the study showed ample evidence in regard to the action of the drug. The drug was prepared using fresh ingredients. Ayurvedic pharmacology depends on five principles of *Rasa* (essence)- *Guna*- (quality), *Virya* (potency)- *Vipaka* (post-digestive effect) and *Prabhava* (special effect).¹² Acharya Charaka has mentioned that any *dravya* (drugs) can have similar *Rasa* (essence)- *Guna*- (quality), *Virya* (potency)- *Vipaka* (post-digestive effect) but a different mode of action which can be explained on the basis of *prabhava*.¹³ 50% patients belonged to age group 41-50 yrs. 60% were Males and 40% females. 53.34% of total cases were having *Kapha-pitta prakriti*. Majority of cases were having *Madhyama Samhanana* (medium) (66.67%) and *Madhyama Satva*(60%). Majority of patients were presenting *Prabhuta Mutrata*(polyurea) (100%) as chief complaint. *Trishnadhikya & Gala-talu-shosha* were also found in 100% patients. *Avila mutrata* was observed in 33.33% of the cases. Among Main Signs and Symptoms, highly significant relief ($P<0.001$) was obtained in *Prabhuta mutrata* (71.50%) and *Trishnadhikya & Galatalu- shosha* (57.72%). Effect on *Avila mutrata* (Turbid urine) was statistically insignificant. 6.66% patients obtained control over diseased condition 16.66% patients provided Marked Improvement, Moderate Improvement was observed in 40% of cases, 36.66% cases showed Mild Improvement in Signs and Symptoms. Total improvement in Fasting Blood Sugar was 26.11% and that of in Post-prandial sugar was 20.91% which are statistically highly significant. Among them, 23.33% patients obtained Control in F.B.S. value and 10% in P.P.B.S. value. Marked Improvement in F.B.S. was seen in 33.34% cases and 20% in P.P.B.S. Moderate Improvement in F.B.S. and P.P.B.S. was seen in 30% cases. P.P.B.S. of 6.67% patients remained unchanged. Not any adverse effects of *Brhutayadi*

yoga were reported in this study.

PROBABLE MODE OF ACTION :

As far as mode of action is concerned, Ayurvedic view has already been discussed in Drug Contribute. According to modern medical science, the mechanism of action of the drug may be one of these:

1. By decreasing absorption of glucose from the gut.
2. By increasing peripheral utilization of glucose.
3. By stimulating Beta cells to produce more insulin.
4. By increasing insulin sensitivity.

CONCLUSION

Present study was conducted with limited time, limited facilities and limited number of patients. A study of larger group of patients may help to comprehend the mode of action of the Study drug has capacity to improve signs-symptoms and biochemical parameters.

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Conflict of interest-None

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