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Research Article

A CONTROLLED EVALUATION OF EFFECT OF *MADHUMEHA NASHINI GUTIKA* IN *STHULA PRAMEHA* WITH REFERENCE TO TYPE II DIABETES MELLITUS

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ABSTRACT

Ayurveda the science of life is eternal which deals with the healthy as well as diseased individual. *Prameha* described in Ayurvedic literature is very much similar to the diabetes mellitus of modern medicine with the abrupt change in the modern life style the prevalence of all types of diabetes is on the rise in the world's population. *Charak* has mentioned that *Sthula Pramehi* where *Kleda Meda* and *Kapha* are vitiated *Apatarpan* should be given. Properties of *Madhumeha Nashini Gutika* prompted us to select the drug in the management of *Sthula Prameha*. **Methodology-** The present study is open labelled randomized control trail. The study duration was 12 weeks from the day of recruitment of patients. Group A (trail group) comprised of 20 patients to whom *Madhumeha Nashini Gutika* 500mg BID was given while in Group B (control group) also comprised of 20 patients treated with tablet metformin in a dose of 500mg BID after food along with drinking water. All the patients were strictly examined according to the criteria of diagnosis having BMI more than 25 were included in the study randomly. **Analysis-** The outcome measures of this study was to evaluate the effect of therapy on the symptoms of *Prameha* in terms of % of relief, on physical characters of body such as wt in kg and BMI and biochemical markers such as blood sugar level, HbA1c before and after treatment in both the groups. **Results and Conclusion-** Overall % of relief in treated group was 73.61% which was more than control group where it was found to be 58.59%. Reduction in weight of patients of treated group was highly significant as t was 8.09 (p<0.001) as compared to control group where t was 0.2525 (p>0.1). Highly significant reduction in BMI values was also noted in treated group as t was 8.83 (p<0.001) as compared to control group where t=0.1625 (p>0.1) so we came at the conclusion that *Madhumeha Nashini Gutika* might be working on *Bahudrava Shleshma* and *Bahu Abaddha Meda dhatu*.

INTRODUCTION

Ayurveda being *Upaveda* of *Atharv Veda* deals with the prevention as well as treatment of the disease. Description of the disease *Prameha* has been found since *Vedic* era. The disease was known as *Asrava*.^[1] The first incidence of *Prameha* was seen after the consumption of *Havish* special fond offered at the *Yagyna*, organized by *Daksha Prajapati*.^[2]

The prefix '*Pra*' means- '*Prakarshena*' suggested excessive urination with increase in quantity and frequency. The verb '*Mih*' means '*Sinchane*' i.e., to flow, the another meaning is '*Ksharane*' suggested loss of vital *Dhatu*s through urine. *Prameha* is defined as "*Prakarshen Mehati Prabhutam Varam Varamva Iti Prameha*".^[3] The cardinal symptom of *Prameha* is '*Prabhuta Mutrata*' and '*Avil Mutrata*'.^[4] *Charaka* has described 20 types of *Prameha* depending upon *Doshik* predominance.^[5] Over indulgence in *Hetus* leads to vitiation of all the three *Doshas* especially *Kapha Dosh* *Dushyas* predominantly *Meda* and *Mamsa* along with *Rakta*, *Shukra*, *Ambu*, *Vasa*, *Lasika*, *Majja*, *Rasa*, and finally *Ojas* are involved in

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pathogenesis of *Prameha*. *Kaphaj* and *Pittaj* *Prameha* if left untreated end up in *Madhumeha* which explains us chronicity of the disease.^[6] Diabetes mellitus a clinical syndrome defined as disturbance of intermediary metabolism manifesting a chronic sustained hyperglycemia primary due to either an absolute or relative lack of insulin.^[7] There is probably not a single tissue in the body that escapes the effect of high blood sugar of diabetes. We need insulin to convert glucose to energy. As previously believed diabetes is not always due to lack of insulin but is results due to ineffective insulin which we call insulin resistance. As overweight or obesity is the main cause of insulin resistance losing weight certainly helps in reducing the blood sugar level and it can prevent diabetes in vulnerable persons. Indians are more prone to diabetes than almost any other population in the world. Due to increase in following western dietary habits, unsuited for our environs, adopting sedentary life style and exposed to psychosocial stress. Diabetes mellitus is the leading cause of end stage renal failure, non-traumatic amputations, responsible for 30% of preventable diabetic blindness and a leading cause of cardio vascular mortality. Diabetes mellitus impose a tremendous burden on individual and health care system. The concentration of glycosulated haemoglobin is taken as an index of protein glycosylation. It reflects the state of glycemia over the preceding 2-3 months. Obesity and overeating plays an important role in type II DM, and there is a co relation between the disease and the increasing age. Two metabolite defects characterize type II DM. A) a derangement in insulin secretion that is delayed or insufficient relative to the glucose load B) an inability to the peripheral tissues to respond to insulin action. *Prameha* is *Mahagada* which is *Asadhya* may be manifested in two ways. They are termed as '*Sahaja*' i.e., *Bijadoshokrit* and '*Doshajnya*' i.e., *Apathya nimittaja*. *Sahaj pramehi* are *Krish* and have dominantly *Ruksha* properties, these patients have the habit of taking less amount of food (*Alpashi*), and are always thirsty (*Pipasu*). While *Apathya Nimittaja Prameha* is caused by *Ahitkar Ahara* and *Vihara*, these patients are *Sthula* and have dominance of *Snigdha* properties also these patients are indulged in sedentary work and excessive sleeping.^[7] For the manifestation of the disease three vital factors are responsible such as '*Nidana*' '*Dosha*' '*Dushya*'. Collaboration of these three factors is termed as '*Vicar-Vighatakar-Bhava-abhava*'.^[8] This *Vikar Vighatkar Bhava Anubandhitva-Nanubandhitva* will manifest in disease or healthy (non-disease) condition of a person. *Baliyansi Nidanadi bhava* will cause *Balvan Vyadhi*. *Anubandhi* means *Anukula*

when *Hetus* with same properties as that of *Dosha* are indulged vitiates *Dosha* after that vitiates *Dushyas*, thus *Sammurchana* between *Dosha* and *Dushyas* manifest in *Vyadhi*. *Nidana* of *Prameha* are classified into two groups: a) *Samanya Nidana* b) *Vishesh Nidan*.

Samanya Nidana:-*Bahudrava Shleshma* is the main causative factor in the pathogenesis of *Prameha*.^[9] Hence *Hetus* which predominantly vitiates *Khapa Dosha* are described. The individuals who have the habit of excessive eating irrespective of their *Agni*, *Satmya*, *Asatmya* are prone to *Prameha*. Food stuffs having *Guru*, *Sheeta Sandra Sthira*, *Pichchila guna*, *Madhura*, *Amla*, *Lavana* rasa having *Dosha Anubandhitva* to *Kapha*, vitiates *Kapha* and *Medo dhatu*, the main key factor. So also *Dadhi Guda Ikshu Vikara*, *Anup Audaka*, *Gramya mamsa*, *Dugdha Payasa* and its *Vikara*, *Surapan* are also responsible. ^[10] The main *Apathyakara Viharaj hetu* is *Swapnasukha*. Persons indulged in luxurious sitting not performing any hard work, *Diwaswapa*, *Atinidra*, are prone to *Prameha*. Any causative factor *Shleshma Medo Mutra Sanjanana* is responsible for vitiation of *Kapha dosha* along with *Medo* and *Mamsa dhatu*. Above *Nidana* cause *Apathya Nimittaja Prameha* which occurs latter in life. ^[11] Acharya Bhela has termed it as *Swakritja*.

Vishesh Nidana: *Hetus* responsible for vitiation of specific *Doshas* and finally manifest in *Doshaj* type of *Prameha*. *Kapha Prakopjanaka Ahara Vihar* vitiates specifically *Kapha dosha* which is *Bahudrava* in characteristics. Thus excessive amount of *Kaph Dosha* having *Drava gunatva* circulates in the body and combines with *Medo dhatu* which is *Bahu Abadhdha* in nature both in tern get mixed with *Mamsa* and *Sharirstha Kleda*. This collaboration further increases *Mamsa* and *Kleda* with defective quality. *Kleda* is waste metabolite which is formed due to *Skukshma Pachana* and *Sthula Pachana*. In *Prameha* due to *Sharira Shithilya* and *Dhatwagni Mandya Sukshma Keda Pachan* is increased. This vitiated *Kleda* along with *Mutra* is carried towards *Basti* through *Mutravaha strotas*. As function of *Mutra* is to excret *Kleda*, results in *Prabhuta Avil Mutrata*. ^[12] *Sushruta* explained that *Aparipakva dosha* along with *Medo dhatu* comes near *Basti Mukha* and causes various types of *Prameha*. *Vagbhata* is of the opinion that the predominance of the *Vata*, *Pitta*, *Kapha* in three types of *Prameha* is only due to relative predominance of three *Doshas*. The primary cause is said to be vitiated *Kapha* along with respective *Dushyas*. *Kaphaj Prameha* is *Sadhya* because of *Samkriyatvat*. *Pittaja Prameha* is *Yapya* i.e., it can be controlled with treatment. The reason behind this being *Vishamkriyatvata*. *Vataj Prameha* is *Asadhya* because of *Mahatyayatvata* and *Virrodhdhopkramatvata*.

Sahaj Prameha is also *Asadhya*.^[13] All *Prameha* converted to *Madhumeha* are *Asadhya*.^[14] *Kaphaj* and *Pittaj Prameha* presented with very few *Purvarooopa* and *Vataj Prameha* without prodromal symptoms are *Asadhya*.^[15] If *Pidakas* are manifested in *Prameha* it is *Asadhya*. *Prameha* with *Upadrava*, *Arisht lakshana* and *Atiprabhut Mutrata* is *Asadhya*.^[16]

Management of Prameha: *Ahara Vihara* and *Aushadhi dravayas* play pivotal role to relieve the patient from abnormal imbalance in *Dhatu*. In *Prameha* pathogenesis three *Doshas*, ten *Dushyas* along with *Agni* is also hampered, this makes the disease difficult to treat. The rationale for the treatment is as follows: 1) To eliminate vitiated *Doshas* especially *Bahu Drava Shleshma*. 2) To counter vitiated *Dhatu*, the chief being *Meda* and *Mansa*. 3) To control loss of major *Dhatu*s and *Oja* via urine. 4) To control *Dhatu Shaithilya*. 5) Replenishment of lost *Dhatu*s and *Ojas* via urine 6) To maintain good quality of life. 7) To enhance production of *Dhatu* with proper strength. *Charaka* has classified patients of *Prameha* as *Sthula Prameha* and *Krish Prameha*.^[17] *Charaka* has explained *Brihan Chitiktisa* for *Krishaprameha* by which increased *Vata dosha* can be alleviated as well as vital elements of body such as *Dhatu* will be increased. *Vagbhata* stated that *Shamana* should be given to *Krish Pramehi*.^[18] He has told several *Shamana Yogas* for the treatment of *Prameha*. Most of these drugs have action as *Santarpan*.

Chikitsa of Sthula Prameha: *Charaka* has enlighten that *Shodhana* in the form of *Vamana* and *Virechana* should be given to those patients who have *Balvan Dosha* and *Sharira*.^[19] However *Sthula Prameha* patients having *Alpa* or *Madhyam* type of *Sharira* and *Dosha Bala*, *Langhan* and *Langhan-Pachan* mode of treatment should be used.

Role of Apatarpana In Sthula Madhumeha: In *Sthula Prameha Apatarpan Chikitsa* is given in such as that *Agni* of patient should not be increased. To maintain this equilibrium of *Dosha Dushya* and *Agni Guru Apatarpan* concept of management of *Sthaulya*

as stated by *Vagbhata* in *Ashtangasangraha*^[20] should be advised to control excessive *Medadhatu*. In *Sthula Pramehi Shushruta* has explained importance of *Shilajeeta*.

AIMS AND OBJECTIVES

Prameha is *Santarpanjanya Vyadhi* managed with *Apatarpana*. In *Sthula Pramehi Bahudrava Kapha*, *Bahiabadhdha Meda* and *Kleda* are involved. Thus the concept of *Apatarpana* is applied here. 1) To evaluate the effect of *Madhumeha Nashini Gutika* on *Prameha lakshana*. 2) To evaluate blood sugar level lowering capacity of *Madhumeha Nashini Gutika* in patients of *prameha*. 3) To find out and or to propose the mechanism of action of *Madhumeha Nashini Gutika*. 4) To clinically correlate *Prameha* and diabetes mellitus as also modalities of treatment.

MATERIALS AND METHODS

Design of Study: Open randomised control study. We planned to study 40 pts of *Madhumeha* in which 20 pts were in study group (*Madhumeha Nashini Gutika* was given), another 20 pts included in control group (*metformin* was given) with follow up of 12 weeks. Clinical evaluation was done to evaluate symptomatic improvement after every 2 weeks and blood sugar and urine sugar were investigated after 4 weeks. HbA1c and other investigations were carried out after 12 weeks.

Criteria of Selection: Patients with classic symptoms of *Prameha*, BMI more than 25 were selected. 1) Fasting plasma glucose in between 110mg%-250mg% 2) Post prandial plasma glucose in between 140mg%-450mg% 3) Type II DM patients 4) Uncomplicated 5) Both sexes 6) Age between 40-65 yrs old.

Criteria of Rejection: 1) Blood glucose level (pp)>450mg%. 2) Age below 45yrs and above 65yrs. 3) Pregnancy and lactating mothers. 4) All patients with acute complication like hyperglycemic coma, ketoacidosis and infection like gangrene were also not considered.

Groups of Management	Treatment group	Control group
Drug	<i>Madhumeha Nashini Gutika</i>	Metformin
Dose and Duration	500mg BID	500mg BID
<i>Anupana</i>	Lukewarm water	Lukewarm water
Duration	12 weeks	12 weeks

Investigations: CBC, ESR, LFT, RFT, lipid profile, HbA1c values were estimated before and after completion of treatment.

Criteria of Assessment: Over all relief was checked on objective and subjective measures.

Subjective Parameter- Following 10 symptoms of *Prameha* were graded from 0-3 (as shown in table 8).

Values were noted before and after treatment and evaluated in terms of % of relief. 1. *Daurbalya* 2. *Kshudhavridhi* 3. *Kshudhamandya* 4. *Pipasa atipravritti* 5. *Ayasen Shwasa* 6. *Prabhut-Mutrata* 7. *Nakta-Mutruta* 8. *Pindikodvesthtena* 9. *Swedati Pravritti* 10. *Hast-padtalaDaha*.

Objective Parameter- Blood sugar level 1. Fasting and 2. Post prandial 3. Average blood sugar level 4. Urine sugar level 5. HbA1c 6. Weight 7. BMI. All these values were noted before and after treatment.

Assessment of Tolerability: Effects of the drugs were observed on patients along with side effects, unwanted effects and complication.

Analysis: The students "t" test was applied to the data. Thus statistical analysis was done to find out significant improvement. Statistical analysis was done on demographic and other details were obtained from case records and were described in tabulated form.

Drug Under Trial: The drug is defined as the one which acts with the help of its qualities. [21] In *Sthula pramehi* the drug is given having opposite properties of vitiated *Kapha*, *Meda* and *Kleda*. Drug used in this study is described by Acharya Yadavji Trikamji named "*Madhumeha Nashini Gutika*". This drug has *Trivanga bhasma*-1 part, *Gudmara churna*-3 part, *Nimba churna*-3part and *Shilajatu*-6part. [22]

OBSERVATION AND RESULTS

Table 1: Showing Age Wise Distribution of 40 Patients of Prameha

S. No	Age Group	Treated Group		Control Group		Total No. of Pts.	Percentage
		No. of pts.	%	No. of pts.	%		
1)	Tarunavastha (17-40 yrs)	1	5%	3	15%	4	10%
2)	Praudhavastha (41-60 yrs)	19	95%	16	80%	35	87.5%
3)	Vridhdhavastha (Above 60 yrs)	0	0%	1	5%	1	2.5%

Table 2: Showing Sex Wise Distribution of 40 Patients of Prameha

S. No	Sex Group	Treated Group		Control Group		Total No. of Pts.	Percentage
		No. Of pts.	%	No. of pts.	%		
1)	Male	6	30%	13	65%	19	47.5%
2)	Female	14	70%	7	35%	21	52.5%

Table 3: Showing Dominant Rasa in Aahar of 40 Patients of Prameha

S. No	Dominant Rasa In Aahar	Treated Group		Control Group		Total No. of Pts.	Percentage
		No. of pts.	%	No. of pts.	%		
1)	<i>Madhur</i>	20	100%	20	100%	40	100%
2)	<i>Amla</i>	15	75%	10	50%	25	62.5%
3)	<i>Lavan</i>	18	90%	17	85%	35	87.5%
4)	<i>Katu</i>	10	50%	8	40%	18	45%
5)	<i>Tikta</i>	02	10%	2	10%	4	10%
6)	<i>Kashaya</i>	01	5%	02	10%	03	7.5%

Table 4: Showing Dietic Habits of 40 Patients of Prameha

S. NO.	Dietic habit	Treated Group		Control Group		Total No. of Pts.	Percentage
		No. of pts.	%	No. of pts.	%		
1)	<i>Samashana</i>	4	20%	3	15%	7	17.5%
2)	<i>Vishamashana</i>	16	80%	17	85%	33	82.5%
3)	Mixed	14	70%	14	70%	28	70%

Table 5: Showing Type of Work Done By 40 Patients of Prameha

S. No.	Type of work	Treated Group		Control Group		Total No. of Pts.	Percentage
		No. of pts.	%	No. of pts.	%		
1)	Manual	03	15%	04	20%	7	17.5%
2)	Sitting/Sedentary	12	60%	14	70%	26	65%
3)	Standing	03	15%	01	5%	04	10%
4)	Labour	02	10%	01	5%	03	7.5%

Table 6: Showing Doshaj Prakriti in 40 Patients of Prameha

S. No.	Doshaj Prakriti	Treated Group		Control Group		Total No. of Pts.	Percentage
		No. of pts.	%	No. of pts.	%		
1)	Vata-Pittaj	07	35%	04	20%	11	27.5%
2)	Pitta-Kaphaj	04	20%	06	30%	10	25%
3)	Kapha-Vataj	09	45%	10	50%	19	47.5%

Figure 1: Showing Incidence of Main Vyadhi Ghatak Involved in 40 Patients of Prameha

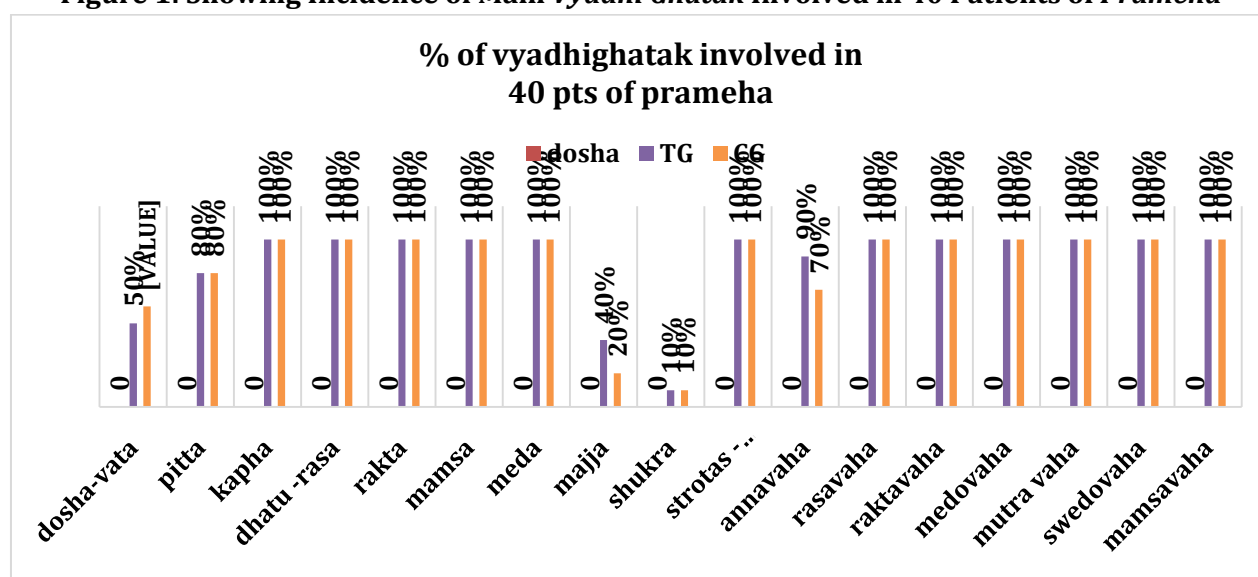
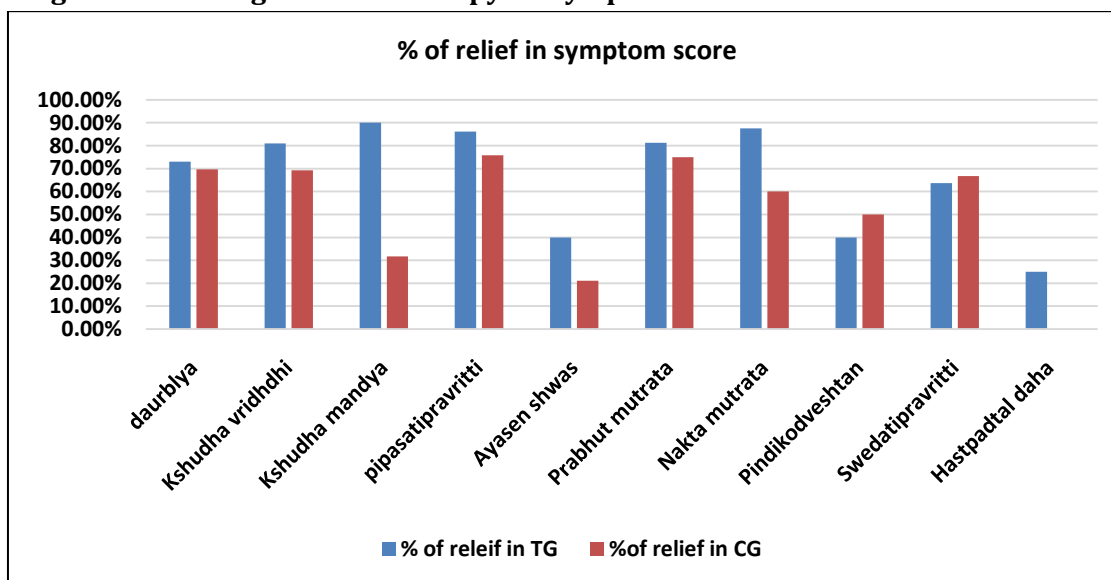


Table 7: Gradation of Symptoms

Symptoms			
Daurbalya		Kshudhavridhi	
0	No weakness in any sort of work	0	Breakfast in morning along with lunch and dinner
1	Weakness in routine work but able to cope with it	1	Twice heavy breakfast along with lunch and dinner
2	Weakness enough to hamper his routine work	2	Heavy breakfast 2 times daily along with lunch and dinner
3	Weakness in slight work or at rest so as to him		
Kshudhamandya		Ayasen -swasha kashtata	
0	Normal appetite	0	No Swasha kashtata
1	Eats less as apart of routine, reduced desire.	1	Swasha kashtata after climbing 5 floors

2	No desire, intake is moderate	2	<i>Swasha kashtata</i> after climbing 2 floors
3	No desire for food and intake is very poor	3	<i>Swasha kashtata</i> after climbing 5-6 steps
	<i>Nakta-Mutrata</i>	<i>Prabhut mutrata</i>	
0	No nocturnal urination	0	Passes urine 4-5 times in whole day
1	1 to 2 times passing urine in the night	1	Passes urine 7-9 times in whole day
2	2to 3 times passing urine in the night	2	Passes urine 10-12times in whole day
3	More than 4 times in	3	Passes urine more than 12 times in whole day
	<i>Pindikodveshtana</i>	<i>Swedati pravritthi</i>	
0	No complaints	0	<i>Sweda</i> after heavy work
1	<i>Pindikodveshtana</i> after 1 hour walk	1	<i>Sweda</i> after 1/2 hour work
2	<i>Pindikodveshtana</i> after 1/2 hour walk	2	<i>Sweda</i> after 15 minute work
3	<i>Pindikodveshtana</i> after 10 minute walk	3	<i>Sweda</i> after 5 minute work
	<i>Hust - padatala daha</i>	<i>Pipasa-atipravrutti</i>	
0	No <i>Daha</i>	0	Feeling of thirst (7-9times/24h) and relieved by drinking water
1	<i>Padatala daha</i>	1	Feeling of moderate thirst (>9-11times/24h) and relieved by drinking water
2	<i>Hastpadatala daha</i> sleep not disturb	2	Feeling of excess thirst (>11-13times/24h) not relieved by drinking water
3	<i>Hasta padatala daha</i> sleep disturb	3	Feeling of severe thirst (>13times/24h) not relieved by drinking water

Figure 2: Showing Effect of Therapy on Symptom Score of 40 Patients of *Prameha*Table 8: Showing Effect of Therapy on Blood Sugar Level of 40 Patients of *Prameha*

S. No.	Group	Mean \pm SD		Diff of mean \pm SD	Sed	t	P
		BT	AT				
1	Treated	157.2 \pm 48.91	141.4 \pm 51.26	15.8 \pm 34.78	7.77	2.0334	>0.05
	Control	168.3 \pm 53.49	127.8 \pm 43.69	37.85 \pm 42.15	9.43	4.0138	<0.001
2	Treated	242.5 \pm 63.12	224.05 \pm 68.40	18.45 \pm 53.05	11.86	1.5556	>0.1

		Control	272.45±76.35	209.35±53.30	63.1±73.19	16.36	3.8569	<0.01
3	ABGL- Random	Treated	196.89±55.64	170.38±71.22	26.44±65.42	14.63	1.80	>0.05
		Control	243±60.85	207.02±58.91	35.97±69.09	15.45	2.3286	<0.05
4	HbA1C	Treated	8.58±1.66	7.77±2.06	0.81±1.82	0.40	2.025	>0.05
		Control	8.84±1.58	7.82±1.83	1.02±1.57	0.35	2.9142	<0.01
5	USL	Treated	1.1±1.6	0.50±0.88	0.6±1.46	0.32	1.87	>0.5
		Control	1.6±1.54	0.4±0.75	1.2±1.196	0.27	4.4444	<0.001

Effect of Therapy on Blood Sugar Level: All the patients of this study were explained to measure blood sugar levels before and after the treatment. In treated group *Madhumeha Nashini Gutika* lowered down fasting blood sugar level within the group but when tested by paired 't' test, between two groups where t was 2.0334, p>0.05, suggested that *Madhumeha Nashini Gutika* didn't satisfactorily lowered fasting blood sugar level. But in control group metformin lowered fasting glucose level significantly as p<0.001 (table-8). In the same manner post prandial blood sugar level and average blood sugar level was not significantly reduced in treatment group so as in control group metformin showed highly significant results. **Effect of therapy on HbA1c:** After completion of treatment reduction in HbA1c units was insignificant (t=2.025, p>0.05) in trail group relative to control group where t=2.9142, p<0.01.

Table 9: Showing Effect of Therapy on Weight and BMI of 40 Patients of Prameha

S. No	Character	Group	Mean ± SD		Diff of mean ±SD	SEd	T	P
			BT	AT				
1	Weight	Treated	64.15±7.21	62.45±7.30	1.7±0.97	0.27	8.09	<0.001
		Control	67.65±4.29	67.7±4.53	-0.05±0.89	0.198	0.2525	>0.1
2	BMI	Treated	27.23±2.54	26.70±2.61	0.53±0.30	0.06	8.83	<0.001
		Control	26.85±1.66	26.8305±1.47	0.0195±0.54	0.12	0.1625	>0.1

Table 10: Table showing Ingredients of Madhumeha Nashini Gutika

S. No.	Name	Proportion
1	<i>Trivanga Bhasma</i>	1
2	<i>Gudamara</i>	3
3	<i>Nimba</i>	3
4	<i>Shilajatu</i>	6

Table 11: Table showing the Guna, Rasa, Virya, Vipaka and Doshagnata of Madhumeha Nashini Gutika

S.No.	Name	Proportion	Guna	Rasa	Virya	Vipaka	Doshagnata
1	<i>Vanga</i>	1	<i>Laghu Sara, Ruksha</i>	<i>Tikta Kashaya Lavana</i>	<i>Sita</i>	<i>Katu</i>	<i>Vatanashaka Kaphahara</i>
2	<i>Naga</i>	1	<i>Laghu</i>	<i>Tikta</i>	<i>Ushna</i>	<i>Katu</i>	<i>Vatanashaka Kaphahara</i>
3	<i>Yashada</i>	1	<i>Laghu Sukshma</i>	<i>Tikta</i>	<i>Sita</i>	<i>Katu</i>	<i>Vata Kaphahara</i>
4	<i>Gudamara</i>	3	<i>Laghu Ruksha</i>	<i>Kashaya Tikta</i>	<i>Ushna</i>	<i>Katu</i>	<i>Kaphahara Vatahara</i>
5	<i>Nimba</i>	3	<i>Laghu</i>	<i>Tikta Kashaya</i>	<i>Shita</i>	<i>Katu</i>	<i>Kapha Shamaka Pitta Shamaka</i>
6	<i>Shilajatu</i>	6	<i>Sara</i>	<i>Tikta Katu Kashaya</i>	<i>Ushna</i>	<i>Katu</i>	<i>Kapha hara Medohara</i>

DISCUSSION

Ayurvedic physician has described *Pramehi* patients as *Sthula* and *Krishna*, in which treatment has to be given. *Sthula Pramehi* has to be treated with *Apatarpan* which include *Samshodhana* and *Samshamana*. The drug *Madhumeha Nashini Gutika* has 100% *Medohara* property. Effect of therapy was observed on the symptoms of *Prameha* as shown in figure no-2. Overall % of relief in treated group was 73.61% which was more than control group where it was found to be 58.59%. More % of relief in symptom score of treated group as compared to control group might be due to properties of *Madhumeha Nashini Gutika*. *Katu* and *Tikta rasa* might be enhancing status of *Medodhatvagni* because of which *Bahuabaddha Meda* might get digested in another form of metabolite. Thus responsible *Abaddha Meda* when get reduced symptoms of *Madhumeha* also get alleviated. As well as it might be alleviating *Sharir Shaithilya* and might be useful for normal production of *Dhatu*. As shown in table-9, the difference noted was highly significant in treatment group as “t” was 8.09, p<0.001, while in control group the difference noted was insignificant as “t”=0.2525, p>0.1 (with respect to weight of patients before and after treatment in both the groups). In *Sthula Pramehi*

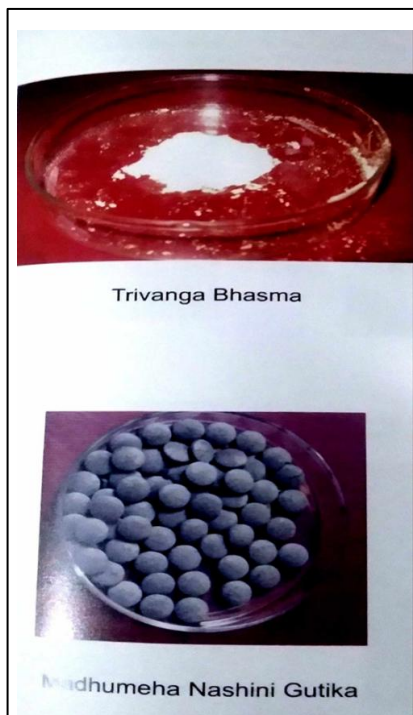
patient’s derangement of *Meda dhatu* is there which causes *Sharir Shaithilya* which can be assessed by BMI. In the present study patients with BMI more than 25 are selected. Results as mentioned earlier of this study indicated that *Madumeha Nashini Gutika* reduced weight and BMI. Above discussion revealed that the drug definitely had beneficial effect on *Bahudrava Shleshma* and *Bahu Abaddha Meda* in *Sthula Pramehi*. However reduction in blood sugar level in trail group was insignificant which can be augmented by prescribing *Madhumeha Nashini Gutika* along with strict vigilled diet and exercise regimen.

Proposed Mechanism of Action of Madhumeha Nashini Gutika

All the components of this drug have *Laghu*, *Ruksha* properties exactly opposite that of *Kapha dosha* and *Meda dhatu*. As described in Ayurvedic text, *Shilajitu* is *Pramehaghna* and *Rasayana* drug. *Trivanga bhasma* is also *Mehanashak* and removes *Dhatu Shaithilya* and responsible for *Uttam dhatu nirmiti*. *Gadamara* and *Nimba* have also *Khapha Medonashak* property.



Ingredients of Madhumeha Nashini Gutika



Finger Print Profile of Madhumeha Nashini Gutika



CONCLUSION

Most of the patients from both the groups were from *Praudhavastha* age group. 47.5% patents were male and 52.5% patients were females. In this study most of the patients belonged to Hindu religion, few were from Muslim community. Maximum numbers of

patients were from middle class and were educated. Most of the patients were indulged in taking *Madhura* and *Lavana rasa* in their diet. Most of the patients had some sort of *Vyasana*. 65% of patients were indulged in sedentary type of work, while maximum number of

patient had habit of idle sitting, *Diwa Swap*, *Ati-Nidra* and *Alasya*. (Table 1, 2, 3, 4, 5) 47.5% patients were of *Kapha-Vataja prakriti*. (Table-6) Most of the patients were having *Sthula Akrti* and *Anup Desha*. *Kapha dosha* was dominant in all patients and *Dushti of Ras, Rakta, Mamsa, Medo, Dhatu* was also observed in all patient (Figure-1). It was observed that overall % of relief was more in treated group (73.65%) than control group (58.59%) symptom score (Figure-2). Table-9, showed statistically significant reductions in the wt and BMI of patients in trail group relative to control group. So we came at conclusion that *Tikta rasatmak Katu Vipaki Laghu, Ruksha, Sara, Gunatmak* and having *Kapha Medohara* properties *Madhemeha Nashini Gutika* might be working on *Bahu-Drava Shleshma* and *Bahu-Abadha Meda dhatu*. Both the drugs do not have significant effect on renal and liver function and no significant adverse effects were reported.

Future Prospects: To have better results on lowering blood sugar level one must adopt holistic approach while prescribing *Madhumeha Nashini Gutika*, it may work on sugar level when prescribed in higher doses and for longer duration of periods. *Madhumeha Nashini Gutika* may be given as add on therapy in future for better results.

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