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*Research Article*

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**A study on the effect of guduchi choorna with madhu and selective yoga techniques in madhumeha (type-2 diabetes mellitus)****Dr Sangamesh Swami Hiremath<sup>1</sup>, Dr Guheshwar B Patil<sup>2</sup>**<sup>1</sup>Associated Professor Dept of Swasthavritta, SSRAMC, Inchal.<sup>2</sup>Professor Dept of Swasthavritta SJG Ayurvedic Medical College and Research Center Koppal.

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**ABSTRACT**

In Ayurveda, Madhumeha is nearest clinical entity for Diabetes Mellitus. . We find reference about Guduchi with Madhu for treatment of all types of Prameha. The Asana and Pranayama have multi dimensional roles to play in the practice of yoga and welfare of the mankind namely relaxation, meditation as well as correction and culture of physical body .Yogachudamani Upanishad also considered Yoga Siddhi as the means of relieving diseases. So the present study on Guduchi with Madhu and selective yoga techniques is being done to manage the Madhumeha (type 2 diabetes mellitus). In three groups, good relief was seen in Group GY, who treated with Guduchi and Yoga techniques. Overall result out of 30 cases, mild response seen in 43.33% cases, moderate response in 50% cases, and marked response in 6.7% i.e. only in 2 cases. There was no completely cured case in clinical study. Guduchi along with Madhu and Yoga is better in controlling symptoms of Madhumeha even after stopping treatment.

**Keywords:** Guduchi, Madhu, Madhumeha, Diabetes. Yoga.

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**INTRODUCTION**

Ayurveda often called as “Ayusho Vedaha” meaning “science of life”. Ayurveda is widely discussed science due to its multi dimensional approach towards resolving health issues of individual and society.

Besides the miraculous achievement of modern medical science, humanity is passing through a repulsion of disease and drug phobia, among the several health problems, Diabetes mellitus is a colossal disease considered as one of the arch enemy of the mankind. Diabetes and its complications pose a major threat to future public health resources throughout the world

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The prevalence of diabetes has reached epidemic proportions worldwide; the global prevalence of diabetes among adult over 18 age has risen from 4.7% in 1980 to 8.5% in 2014. In Ayurveda, Madhumeha is nearest clinical entity for Diabetes Mellitus. Ayurveda has emphasized on preventive, promotive measures with due consideration of appropriate ahara and vihara. They categorized diabetes into 2 groups the obese and the lean and prescribed Tiktha rasa pradhana dravya and shakha for treatment and strenuous exercises for the obese diabetics. Astanga Hridayakara while explaining treatment for nirdhan rogi told to walk for 100 yojanas bare foot and to eat like muni's.

We find reference about Guduchi with Madhu for treatment of all types of Prameha. The Asana and Pranayama have multi dimensional roles to play in the practice of yoga and welfare of the mankind namely relaxation, meditation as well as correction and culture of physical body. Yogachudamani Upanishad also considered Yoga Siddhi as the means of relieving diseases. So the present study on Guduchi with Madhu and selective yoga techniques is being done to manage the Madhumeha (type 2 diabetes mellitus).

## MATERIALS AND METHODS

### Source of data

Patients of OPD and IPD of S.J.G Ayurvedic medical college and hospital, koppal, irrespective of sex religion and socio-economic were selected for the study.

### Method of collection of data

### Criteria of diagnosis

Diagnoses was made according to Signs and symptoms of Madhumeha as mentioned in classical texts. The patients with following symptoms were subjected for further analyses of blood and urine sugar.

1. Prabhutha Muthrata
2. Pipasadhikyatha
3. Karapada daha
4. Kshudhadikyata

Diagnoses of diabetes mellitus (type-2) was made with following criteria's of blood sugar level

### FBS

- 70-125 mg/dl - (normal)
- 126-170mg/dl - (mild)
- 171-220mg/dl - (moderate)
- 221 mg/dl & above - (severe)

### PPBS

- 120-180 mg/dl - (normal)
- 181-230 mg/dl - (mild)
- 231-280 mg/dl - (moderate)
- 281 and above - (severe)

### Study Design

It was a comparative clinical study with three groups, comprising of 10 patients in each group.

### Inclusion Criteria

1. Patients of D.M (type-2) having mild to moderate blood sugar level.
2. Patients of the age group of 18-60 yrs irrespective of sex will be selected.
3. Patients with history of D.M less than 6 months will be included in study.

### Exclusion Criteria

1. Patients with known type 1 diabetes.
2. Patients on any medication which can impact glycemic value.
3. Patients with other systemic disorder and complication of D.M will be excluded from study

**Total Study Duration:** 60 days

**Treatment Duration:** 30 days

**Follow Up Duration:** once in 30 days.

### Assessment criteria

Assessment of results was done based on Subjective and objective parameters.

### Laboratory investigations

BLOOD: F.B.S, P.P.B.S

### Study groups

#### Group G

Each patient was given 15 packets of Guduchi choorna in the dose of 12 grams in each packet with Madhu as anupana in the dose of about 2 tea spoon. **Group Y** – patients were subjected to

perform shitalikarana vyayama and asanas every day for 30 minutes.

### Selected Yoga Techniques for the Study (table 16)

Sl.No	Asana
1.	Prayer
2.	Shitalikarana vyayama
3.	Ardhamatsyendriyasana
4.	Paschimottanasana
5.	Parivritta trikonasana
6.	Padahasthasana
7.	Bhujangasana
8.	Dhanurasana
9.	Uttanapada hastasana
10.	Shavasana
11.	Kapalabhati
12.	Nadishuddhi Pranayama

### Group GY

Patients were administered both Guduchi choorna with Madhu and subjected to perform shitalikarana vyayama and asanas also.

### Guduchi

**Latin Name**-Tinospora Cordifolia

**Family**-Menispermaceae

### Synonyms

avyaktha, amrita, amrutavalli, kundali, jivantika, chakrangi,

Chakra laxana, bhishakpriya

### Part Used

Stem Root and Leaves

### Guna

Laghu Snigdha

### Rasa

Tiktha Kashaya Katu

Virya-Ushna

Vipaka-Madhura

### Doshagnatha

Tridosha Shamaka

### Action

It Is Rasayana, Deepana, Grahi, and Anaha Hara. Hence It Is Used In Daha Jwara Kushta Vataraktha Pandu, Kasa, Chardi Krimi Etc

### Chemical constituents

The stem and leaves contain tinosporine, tinosporide, cordifolide, tinosporin tinosporon, tinosporic acid, tinosporol and cordifol. Contain three crystalline substances.

1. A Bitter Glucoside Giloin [C<sub>23</sub>H<sub>32</sub>O<sub>10</sub>, 5H<sub>2</sub>O],

2. A Non-glucoside Giloinin [C<sub>17</sub>H<sub>18</sub>O<sub>5</sub>] and

Gilosterol [C<sub>28</sub>H<sub>48</sub>O] have been isolated from fresh stem bark. Berberillin and a waxy substance are also present. Leaves are rich in calcium and phosphorus

### Madhu

<b>Latin Name</b>	-	Mal Depurantum
<b>Rasa</b>	-	Madhura Kashaya
<b>Guna</b>	-	Rukshana
<b>Veerya</b>	-	Sheetha
<b>Vipaka</b>	-	Katu
<b>Doshagnatha</b>	-	Kaphapithahara

### Chemical composition

- Honey is viscid fluid as sweet as sucrose.
- Specific gravity - 1.359-1.361
- Moisture - 14% - 24%,
- Dextrose - 23 – 26%    levulose - 30-40%
- sucrose - 0.4-0.6%
- Destine and gums - 0.7%,
- Ash 0.182-1% and miscellaneous acid, Pollen grains, beeswax, pigments etc 0.
- 1-7% Contain Vit B1, B2, B3, B6 .Vit C and nicotinic acid in traces (wealth of India)

- It also contains some minerals potassium, calcium, magnesium, zink, iron, copper, phosphorous, sulphur, chloride, traces of chloride, traces of chromin, nickel, tin, silver and gold etc.

### STATISTICAL ANALYSIS

The data were collected from both group, before, after treatment, and after follow up (at the end of follow up) and statistically analyzed by using student paired t" test and "F" test (one way ANOVA) in consultation with statistician

### RESULTS

	Mean				Sum Of Squares	Df	Mean Square	F	P
	Gr.G	Gr.Y	Gr.GY						
Prabhutha Muthtata	0.5	0.6	0.2	Between Groups	0.87	2	0.43	1.38	>0.05
				Within Groups	8.50	27	0.31		

F value of variation of treatment at degree of freedom (2, 27) is 1.38 less than the table value at 0.05 P; it shows that treatment is having

insignificant difference between the groups on the Lakshana Prabhutha Muthrata after treatment

#### On Prabhutha Muthrata night

	Mean				Sum Of Squares	Df	Mean Square	F	P
	Gr.G	Gr.Y	Gr.GY						
Prabhutha Muthtata (Night)	0.3	0.8	0.4	Between Groups	1.40	2	0.70	2.	>0.05
				Within Groups	8.10	27	0.30	33	

F value of variation of treatment at degree of freedom (2, 27) is 2.33 less than the table value at 0.05 P; it shows that treatment is having

insignificant difference between the groups on the Lakshana Prabhutha Muthrata at night after treatment

#### Avila muthrata

	Mean				Sum Of Squares	Df	Mean Square	F	P
	Gr.G	Gr.Y	Gr.Gy						
Avila Muthrata	0.5	0.7	0.2	Between Groups	1.27	2	0.63	2.76	>0.05
				Within Groups	6.20	27	0.23		

F value of variation of treatment at degree of freedom (2, 27) is 2.76 less than the table value at 0.05 P; it shows that treatment is having no

significant difference between the groups on the Lakshana Avila Muthrata after treatment

**Kshuda**

	Mean				Sum Of Squares	Df	Mean Square	F	P
	Gr.G	Gr.Y	Gr.Gy						
Kshuda	0.6	1.2	0.4	Between Groups	3.47	2	1.73	5.57	<0.01
				Within Groups	8.40	27	0.31		

F value of variation of treatment at degree of freedom (2, 27) is 5.57 more than the table value at 0.05; it shows that treatment is having significant

difference between the groups on the Lakshana on Kshudhaafter treatment

**Trishna**

	Mean				Sum Of Squares	Df	Mean Square	F	P
	Gr.G	Gr.Y	Gr.Gy						
Trishna	0.5	1	0.4	Between Groups	2.07	2	1.03	4.04	<0.05
				Within Groups	6.90	27	0.26		

F value of variation of treatment at degree of freedom (2, 27) is 4.04 more than the table value at 0.05 P; it shows that treatment is having significant

difference between the groups on the Lakshana on Trishna after treatment

**Kharapada daha**

	Mean				Sum Of Squares	Df	Mean Square	F	P
	Gr.G	Gr.Y	Gr.Gy						
Kharapa da Daha	0.1	0.1	0	Between Groups	0.07	2	0.03	0.50	>0.05
				Within Groups	1.80	27	0.07		

F value of variation of treatment at degree of freedom (2, 27) is 0.05 less than the table value at 0.05; it shows that treatment is having insignificant

difference between the groups on the Lakshana Kharapada dahaafter treatment

**MUTHRA MADHURYATHA**

	Mean				Sum Of Squares	Df	Mean Square	F	P
	Gr.G	Gr.Y	Gr.Gy						
Muthra Madhuryatha	0.7	0.6	0.3	Between Groups	0.87	2	0.43	1.77	>0.05
				Within Groups	6.60	27	0.24		

F value of variation of treatment at degree of freedom (2, 27) is 1.77 less than the table value at 0.05; it shows that treatment is having insignificant

difference between the groups on the Lakshana Muthra Madhuryatha after treatment

### On FBS

	Mean				Sum of Squares	df	Mean Square	F	P
	Gr.G	Gr.Y	Gr.Gy						
FBS	0.8	1	0.3	Between Groups	2.60	2	1.30	6.16	<0.01
				Within Groups	5.70	27	0.21		

F value of variation of treatment at degree of freedom (2, 27) is 6.16 more than the table value at 0.05; it shows that treatment is having significant

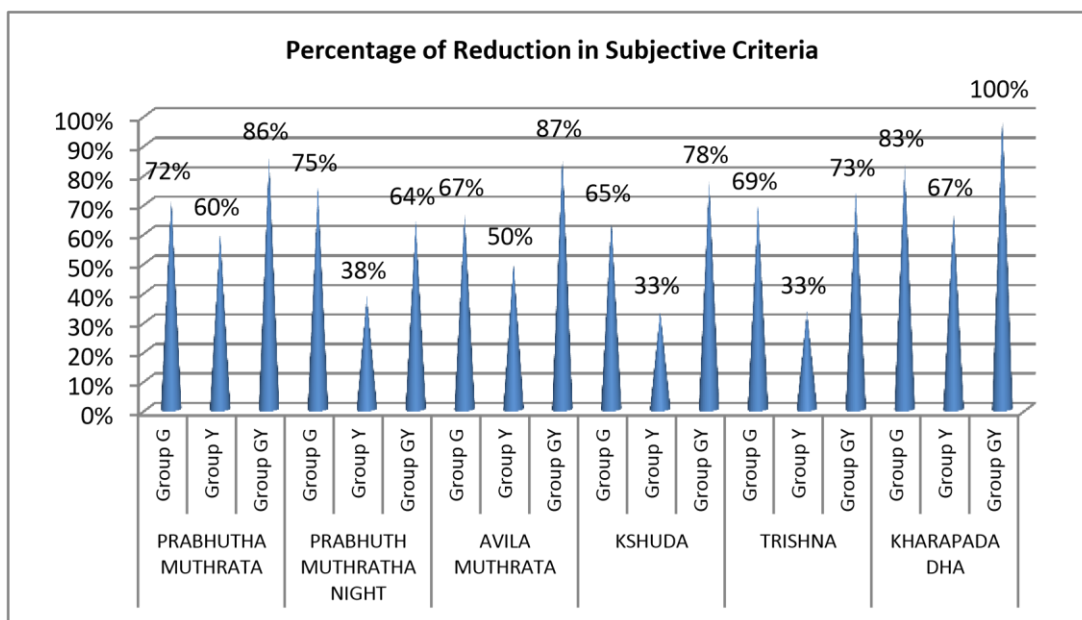
difference between the groups on the FBS value after treatment (Table).

### On PPBS

	Mean				Sum of Squares	df	Mean Square	F	P
	Gr.G	Gr.Y	Gr.Gy						
PPBS	0.8	1	0.5	Between Groups	1.27	2	0.63	2.80	>0.05
				Within Groups	6.10	27	0.23		

F value of variation of treatment at degree of freedom (2, 27) is 2.80 less than the table value at 0.05; it shows that treatment is having insignificant

difference between the groups on the PPBS value after treatment



## DISCUSSION

### Comparison of the effects of all the three groups

In this study Guduchi group showed good result in relieving the subjective criteria's when compared with only Yoga group.

But the Combined group showed much significant improvement in the relieving of the symptoms (Subjective and objective) in this study.

Hence on the basis of the results of this study, it can be claimed that combined therapy helps in the better reliving of the symptoms as well as reducing the fasting and post prandial blood sugar levels of Madhumeha patients.

### Mode of action

Tiktha rasa Pradhanyatha- acharya's have given most importance to Tiktha Shaka and Dravya's in the chikithsa and pathya. Here the initial dosha affected is Kapha. Hence the Tiktha Rasa can be of prime importance. The Tiktha Rasa does the Shoshana of dushya's I.e. Kledha, Meda, Vase, Muja, Sweda, Lasika, Mutra, Pitta, Shleshma, and does the Sthirakarana of Mamsa and Lekhana of Meda. Tiktha Rasa has Laghu, Ruksha, and Lekhana guna's. It has Vayu, Akasha pancha mahabhootha.

Hence it helps in the mitigation of Arambhaka Dosha i.e. Kapha which is Guru, Snigdha and Prithvi Jalapradhana. Thus Guduchi with its Tiktha, kashaya rasa, mitigates kapha, with Ushna Veerya vaat shaman and madhur vipaka does pitta shaman. Its Rasayana property helps in dhathukhsayajanya Madhumeha. Madhu has yogavaahi property which enhances action of drug. Madhu even though containe few types of glucose, still it does not increase Blood Sugar levels. It containe many vitamins and micro elements which helps in proper cellular functioning.

Yoga Techniques - The primary cause of Diabetes Mellitus is failure of body cells particularly muscles cells to into cells, and reduced insulin secretion. Yoga effectively counters both mechanisms. Asanas induce pancreas secrete insulin effectively, and unique impact of yoga on body makes muscular relaxation, development and improves blood supply to muscles. This might

enhance insulin receptor expression on muscles causing increases glucose uptake by muscles and thus reducing blood sugar. Another mechanism is that yoga effects adreno-cortical hormonal axis, thus considerably helps in dealing with stress injury.

### Overall effect of therapy

Marked response was observed only in 10% in Group G, while moderate response in 50% cases, mild response was seen in 40% of cases. In Group Y mild response in 80% cases, moderate response in 20% cases. In Group GY 10% showed mild response, 80% showed moderate response, and only 10% showed marked response.

In three groups, good relief was seen in Group GY, who treated with Guduchi and Yoga techniques. Overall out of 30 cases, mild response seen in 43.33% cases, moderate response in 50% cases, and marked response in 6.7% i.e. only in 2 cases. There was no completely cured case in clinical study.

## CONCLUSION

1. The signs and symptoms of Madhumeha are similar to Diabetes. Hence it can be co-related with Diabetes.
2. Study finds similar nidana as in classics for causation of Madhumeha.
3. Guduchi along with Madhu and Yoga is better in relieving symptoms of Madhumeha.
4. Guduchi along with Madhu and Yoga is better in controlling symptoms of Madhumeha even after stopping treatment.
5. Hence by this study, it can be claimed that combined therapy helps in the reliving of the symptoms of Madhumeha (Type-2 Diabetes Mellitus).

How ever ANOVA test results claims that there is no much significant difference between the groups in relieving the symptoms of Madhumeha accept the Kshudha, Trishna. FBS it showed the significant difference in the groups

### Scope for further study

1. Study can be carried on large sample size.
2. Combination of other drugs and yoga can be studied.

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