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EFFICACY OF GUDUCHI AND MADHU IN THE MANAGEMENT OF DIABETES

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ABSTRACT

Besides the miraculous achievement of modern medical science, humanity is passing through a repulsion of disease and drug phobia, among the several healths 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. In Ayurveda, Madhumeha is nearest clinical entity for Diabetes Mellitus. We find reference about Guduchi with Madhu for treatment of all types of Prameha.[2] So the study was carried out. Diagnoses were made according to Signs and symptoms of Madhumeha as mentioned in classical texts. The patients with symptoms were subjected for further analyses of blood and urine sugar. It was a clinical study with single group. Each patient was given dose of 12grams in each with Madhu as anupana. Overall results marked response was observed 10% cases, while moderate response in 50% cases, mild response was seen in 40% of cases. Guduchi as a single drug with anupan can effectively help in control of Madhumeha diabetes,

KEYWORDS: Guduchi, madhu, madhumeha, Diabetes.

INTRODUCTION

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.

In 2016, an estimated 1.6 million deaths were directly caused by diabetes. Another 2.2 million deaths were attributable to high blood glucose in 2012 Almost half of all deaths attributable to high blood glucose occur before the age of 70 years. WHO estimates that diabetes was the seventh leading cause of death in 2016.[1]

In Ayurveda, Madhumeha is nearest clinical entity for Diabetes Mellitus. . We find reference about Guduchi with Madhu for treatment of all types of Prameha.[2]

Medicine
Guduchi
Latin Name - Tinospora Cordifolia.
Part Used- Stem **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.

In Classics
Charaka - Vishamajwara, Kamala, Pittajanya Vami.
Sushruta - Vataraktha Arsha, Vatajwara etc.
Vagbhata - All types of Prameha.
Bhavamishra - Guduchi Considered As Tiktha, Rasayana, And Muthrala And Potent Medicine In Skin Diseases, Kamala, Prameha, And Chronic Atisara. Etc.

Chemical Constituents
The Stem and leaves contain tinosporine, tinsporide, cordifolide, tinosporin tinsporon, tinsporic acid, tinsporol and cordifol. Containce Three crystalline.

Substances have been isolated from fresh stem bark.
1) A Bitter Glucodise Giloin
2) A Non-glucoside Giloinin
3) Gilosterol

Madhu
Latin Name - Mal Depurantum
Rasa - Madhura Kashaya
Guna - Rukshana
Veerya - Sheetha
Vipaka - Katu

Doshagnatha - 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, phosphrous, sulphur, chloride, traces of chloride, traces of chromin, nickel, tin, silver and gold etc.[4]

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 clinical study with single group, comprising of 10 patients

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
1) 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.

RESULTS

Result on Prabhutha Muthrata during Day (table-36).

	Mean		Reduction %	±SD	±SE	t	P
	B.T.	A.T					
Group G							
A.T	1.80	0.50	72.22	1.06	0.33	3.88	<0.01
A.F	1.80	1.30	27.78	0.71	0.22	2.24	>0.05

In the symptom Prabhootha Muthratha
After the treatment (AT), Group G showed 72.22% reduction with t value 3.88 at <0.01 P value was statistical significance and after follow up (AF) showed 27.78 % reduction with 't' value 2.24 at >0.05 P which was statistically Insignificant.

Result on Prabhutha Muthrata at Night

Group G	Mean		Reduction %	±SD	±SE	t	P
	B.T.	A.T					
A.T	1.20	0.30	75.00	0.57	0.18	5.01	<0.001
A.F	1.20	0.60	50.00	0.52	0.16	3.67	<0.01

In the symptom Prabhootha Muthratha Night
After the treatment (AT), Group G showed 75.00% reduction with t value 5.01 at <0.001 P value with statistical significance and after follow up (AF) showed 50.00 % reduction with 't' value 3.67at <0.01 P which was statistically significant.

Result on Avila Muthrata

Group G	Mean		Reduction %	±SD	±SE	t	P
	B.T.	A.T					
A.T	1.50	0.50	66.67	0.47	0.15	6.71	<0.001
A.F	1.50	0.60	60.00	0.57	0.18	5.01	<0.001

In the symptom Avila muthrata
After the treatment (AT), Group G showed 66.77% reduction with t value 6.71 at <0.001 P value with statistical significance and after follow up (AF) showed 60.00 % reduction with 't' value 5.01 at >0.001 P which was statistically significant.

Result on Kshuda

Group G	Mean		Reduction %	±SD	±SE	t	P
	B.T.	A.T					
A.T	1.70	0.60	64.71	0.74	0.23	4.71	<0.01
A.F	1.70	0.60	64.71	0.88	0.28	3.97	<0.01

In the symptom Kshuda
After the treatment (AT), Group G showed 64.71% reduction with t value 4.71 at <0.01 P value with statistical significance and after follow up (AF) showed 64.71 % reduction with 't' value 3.97at <0.01 P which was statistically significant, reduction with 't' value 6.13 at <0.001 P, which was statistically significant.

Result on Trishna (table-40)

Group G	Mean		Reducti on %	±SD	±SE	t	P
	B.T.	A.T					
A.T	1.60	0.50	68.75	0.57	0.18	6.13	<0.001
A.F	1.60	0.90	43.75	0.67	0.21	3.28	<0.01

In the symptom Trishna
After the treatment (AT), Group G showed 68.75 % reduction with t value 6.13 at <0.001 P value with statistical significance and after follow up (AF) showed 43.75 % reduction with 't' value 3.28 at >0.01 P which was statistically significant.

Result on Kharapada Daha

	Mean		Reductio n %	±SD	±SE	t	P
Group G	B.T.	A.T					
A.T	0.60	0.10	83.33	0.53	0.17	3.00	<0.05
A.F	0.60	0.10	83.33	0.53	0.17	3.00	<0.05

In the symptom Kharapada Daha
After the treatment (AT), Group G showed 83.33 % reduction with t value 3.00 at <0.05 P value with statistical significance and after follow up (AF) showed 83.33 % reduction with 't' value 3.00 at <0.05 P which was statistically significant,

Result on Muthra Madhuryatha

Group G	Mean		Reductio n %	±SD	±SE	t	P
	B.T.	A.T					
A.T	1.50	0.70	53.33	0.63	0.20	4.00	<0.01
A.F	1.50	1.20	20.00	0.48	0.15	1.96	>0.05

In the symptom Muthra Madhuryatha
After the treatment (AT), Group G showed 53.33 % reduction with t value 4.00 at <0.01 P value with statistical significance and after follow up (AF) showed 20.00 % reduction with 't' value 1.96 at >0.05 P which was statistically significant,

Result on in Fasting Blood Sugar (FBS).

Group G	Mean		Reduct ion %	±SD	±SE	t	P
	B.T.	A.T					
A.T	1.80	0.80	55.56	0.47	0.15	6.71	<0.001
A.F	1.80	1.20	33.33	0.70	0.22	2.71	<0.05

In the symptom Fasting Blood Sugar
After the treatment (AT), Group G showed 55.56 % reduction with t value 6.71 at <0.001 P value with statistical significance and after follow up (AF) showed 33.33 % reduction with 't' value 2.71 at <0.001 P which was statistically significant,

Result on in Post Prandial Blood Sugar (PPBS)

	Mean		Reductio n %	±SD	±SE	t	P
Group G	B.T.	A.T					
A.T	1.80	0.80	55.56	0.47	0.15	6.71	<0.001
A.F	1.80	1.20	33.33	0.52	0.16	3.67	<0.01

In the symptom Post Prandial Blood Sugar
After the treatment (AT), Group G showed 55.56% reduction with t value 6.71 at <0.001 P value with statistical significance and after follow up (AF) showed 33.33 % reduction with 't' value 3.67 at <0.01 P which was statistically significant.

	Mean		Reduction %
	B.T.	A.T	
	Mutra madhuryatha		
Group G	0.85	0.35	58.82

	Mean		Reduction %
	B.T.	A.T	
	FBS		
Group G	184.20	147.7	19.82

	Mean		Reduction %
	B.T.	A.T	
	PPBS		
Group G	241.60	204.40	15.40

Overal Results
marked response was observed only in 10% in Group G, while moderate response in 50% cases, mild response was seen in 40% of cases

DISCUSSION

In classics
Honey is an excellent yogavahi due to nanadravyatmakata (formed from multiple dravyas). When it is added with vrisyadravyas it attains the guna's of vrishya. (A.S.Su.6/52). The presence of madhu in vasti makes it more potent and enhances the formation sukra (sukropacaya). It also possesses pharmacological actions like deepana balya varnya. It is laxative, demulcent, detergent and emollient.

The fatty acids present in the honey stimulate peristalsis and digestion. It decreases flatulence and increase general metabolism. It pervades to microchannels due to its sookshma property. According to Suśruta madhu is thridoshaghna (Su.Su.45).

Tiktha rasa Pradhanyatha
Acharya's have given most importance to Tiktha Shakaand 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 Sthirikarana 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 contains few types of glucose; still it does not increase Blood Sugar levels. It contains many vitamins and micro elements which help in proper cellular functioning.

CONCLUSION

Guduchi as a single drug with anupan can effectively help in control of Madhumeha diabetes, Guduchi can be safest and economical drug in control of diabetes.

This study can be done on large group size.

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