



"STUDY THE ADD ON EFFECT OF *GUDUCHI SWARAS* WITH GLIMEPERIDE IN *MADHUMEHA*."

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ABSTRACT

India leads the world with largest number of diabetic subjects earning the dubious distinction of being termed the "Diabetes Capital of the World". The so called "Asian Indian Phenotype" refers to certain unique clinical and biochemical abnormalities in Indians which include increased insulin resistance, greater abdominal adiposity i.e. high waist circumference despite lower body mass index, lower adiponectin and higher high sensitive C-reactive protein levels. This phenotype makes Indians more prone to Diabetes.

Aim: To study the add on effect of *Guduchi Swaras* with glimeperide in relieving symptoms of hyperglycemia.

Methodology: Fifty patients of *madhumeha* with uncontrolled BSL were given *Guduchi Swaras* (20ml daily) orally two times before meals for 90 days with madhu. All patients were evaluated based on clinical features and laboratory parameters.

Conclusion: *Guduchi swaras* with *anupana madhu* is highly effective as an adjuvant with Glimeperide in *Madhumeha* (Type 2 DM) with uncontrolled BSL.

KEYWORDS

Madhumeha, Diabetes Mellitus, *Guduchi Swaras*, Glimeperide 1mg.

INTRODUCTION

Madhumeha is one of the *Ashtamaharoga* urinary disorders mentioned by *Charakacharya*. *Madhumehi* passes urine having quality concordant with *madhu* in its colour, taste, smell, and consistency. *Madhumeha* unlike other disorder is a disease of *bastigatavikara* where *tridosha* and *dashadoosha*'s like *rasadi* and *gambheera majjadidhatu*'s are involved which highlights the severity of disorder. Although a range of oral hypoglycemic agents have been discovered and replacement therapy for treatment of this grave disease, but all this provides a palliative role and cure of diabetes mellitus is still remote possibility. As man has entered in 21st century with modernization in each and every walks of life, he has also paid for it by living in several stressful psychological conditions. However, these stressors play certain role in development, progression, prognosis as well as management of disease. Also faulty food habits play major role in pathogenesis of number of diseases. Due to all these lifestyle changes people suffer from diseases or changes in body which are expected to happen in old age and thus day by day life of people is decreasing. So to avoid these things along with lifestyle changes "*Rasayanaushdhi*" will help. So keeping in mind the *Rasayan* and *Madhumehaghna* property of *Guduchi* study is carried out.

MATERIALS AND METHODS

Study locale: Patients were selected from OPD and IPD of at Seth Tarachand Ramnath Hospital based on details history taking, clinical examination and pathological investigations.

Study population: Mainly around Pune.

Study period: 90 days

Sample size: 50 patients

Study design: Open labelled clinical trial

INCLUSION CRITERIA:

1. Patients of Diabetes Mellitus type 2 with uncontrolled BSL.
2. FBS- 121 -250mg/dl PPBS- 151 -350mg/dl
3. HbA1C less than 8.0 mosmol/ml.

EXCLUSION CRITERIA:

1. Type 1 diabetes mellitus
2. D.M with pregnancy
3. Gestational Diabetes
4. FBS more than 250mg/dl PPBS- more than 350mg/dl
5. HbA1C more than 8mosmol/ml
6. Diabetes Mellitus with any other complications.

METHODOLOGY:

Approval of ethical committee REF NO/PG/IEC/948/2016

Patients were selected.

Informed written consent obtained from all subjects fulfilling the inclusion criteria

Confirmation of diagnosis

Patients were given *Guduchi Swaras* with glimeperide

Regular follow up: Three months

Assessment of results and statistical analysis.

PARAMETERS FOR STUDY:

Clinical symptoms:

- *Prabhut mutrata* (Polyurea)
- *Atipipasa* (Polydipsia)
- *Khudha* (Polyphagia)
- *Abhyavaharana Shakti* (Hunger)
- *Kara-Pada-Tala-Daha/Supti* (Neuropathy)
- *AvilaMutrata* (Turbidity)
- *Mutramadhurya* (Glycosuria)
- *Swedadhikya* (Perspiration)
- *Daurbalya* (Weakness)
- *Alasya/Utsahahani* (General Debility)
- *Pindiko-udveshatan* (Cramps)
- *Purishabaddhata* (Constipation)
- *Ruchi, Jarana Shakti* (Digestion)
- *Nidradhikya* (Sleep)
- *Shrama, Swasa* (Dyspnea).

Laboratory investigations:

- FBSL
- PPBSL
- HbA1C
- Urine analysis
- BUL
- SR. CREAT

Data analysis: Z test and Wilcoxon rank test.

OBSERVATION, RESULTS AND DISCUSSION :

Demographic profile:

- **Age** -In this study 3 (6%) patients were in 30-40 age group, 16 (32%) patients were in 40-50 age group, 10 (20%) patients were in 50-60 age group, 16 (32%) patients were in 60-70 age group and 5 (10%) patients were in 70-80. Maximum no of patients are above 40 years of age. It reveals that the individuals are more affected by type 2 DM after 4th decade. The reason for this may be that the environmental factors like stress, wrong food habits, sedentary life style etc., along with natural aggravation of *vata* at this stage of age.
- **Sex** -In this study 28 (56%) patients from trial group were females and 2(44%) from trial group were males. Majority of the patients were female. Here the reason are stress, food habits, sedentary lifestyle.
- **Religion** - In this study 35 (70%) patients were Hindus and 15 (30%) from trial group were Muslims. Majority of the patients belong to Hindu community. We can't make special conclusion from this data because this occurrence is mainly due to demographic situation pertaining to this region.
- **Type Of Work** -5(10%), 42(84%), 3(6%) patients in the trial group having laborious, active and sedentary type of work respectively. Occupation plays major role in the manifestation of *Madhumeha*. The level physical activity the patient has in daily routine, play important roles in onset of Diabetes Mellitus. The dramatic increase indicates that lifestyle factors (sedentary lifestyle) may be particularly important in triggering the genetic elements that cause this type of diabetes. Here the stress factor was dominant in the active group so in this study maximum patients were having active type of occupation.
- **F/H/DM** -35 (70%) patients in the trial group having positive family history for DM. while 15 (30%) patients in the trial group having negative family history for DM. Maximum patients had positive family history for DM. It suggests that type 2 Diabetes Mellitus has a strong genetic component.
- **Ahara** - 43 (86%) patients in the trial group having mix (veg & non veg) type of diet and 7 (14%) patients having only veg diet. Maximum patients had mixed i.e. both vegetarian and nonvegetarian diet. This leads to *agnidushti*, as *mamsahar* is guru; also it causes *mamsa* and *medodusti* by *samanyavishesha siddhant* (Principle of similarity and dis-similarity).
- **Vyasana** -12 (24%), 17 (34%), 26 (52%), 14 (28%), patients in trial group having tea, tobacco, mishri and alcohol as there *Vyasana* (habit) respectively. Majority of the patients were having the addiction of tea, tobacco, mishri and alcohol. These factors mainly responsible for the production of *Vata* and leads to cause digestive problems.
- **Prakriti** - 1 (2%) patients in trial group having *kapha pitta prakruti*, 3 (6%) patients having *kapha vata prakruti*, 0 (0%) patients having *pitta kapha prakruti*. 19 (38%) patients having *pitta vata prakruti*. 3 (6%) patients having *vata kapha prakruti*, 24 (48%) patients having *vata pitta prakruti*.
- **Aharshakti** - In trial group 22(44%), 0(0%), 28(56%) patients having *aavar*, *pravara* and *madhyam aaharshakti* respectively. Maximum no. of patients were having *madhyam* and patients were having *aawara Aaharshakti*. It indicates

jatharagnimandya was not there but *dhatwagni* and *bhutagni* were hampered widely which can be co-related to metabolic derangement that ultimately leads to *ama* formation.

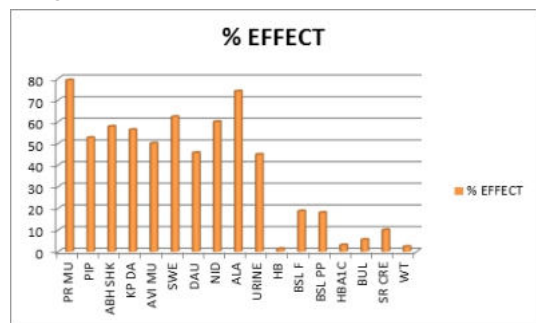
- **Vyayamshakti** - In trial group 28 (56%) patients were having *aawar*, 3 (6%) patients were having *prewar* and 19 (38%) were having *madhyam vyayamshakti*. Majority no. of patients had *aawara vyayamshakti*. This data is relevant to classics that *Avayama* is one of the causes to precipitate the *Madhumeha*. *Avayama* leads less consumption and more restoration of fat in the body precipitate *sthaulya*.

Statistical Analysis:

LAKSHANA	MEDIAN		WILCOXAN SIGN RANK	P-VALUE	% EFFECT	RESULT
	BT	AT				
PRABHUTMUTRATA	1	0	-6.481	0.000	79.2	SIGNIFICANT
PIPASA	1	0	-4.472	0.000	52.6	SIGNIFICANT
ABHYAVRAN SHAKTI	1	0	-5.099	0.000	57.8	SIGNIFICANT
KARPADTALA DAHA	1	0	-4.025	0.000	56.3	SIGNIFICANT
AVIL MUTRATA	0	0	-3.000	0.003	50.0	SIGNIFICANT
SWEDADHIKYA	1	0	-5.745	0.000	62.3	SIGNIFICANT
DAURBALYA	1	0.5	-4.583	0.000	45.7	SIGNIFICANT
NIDRADHIKYA	0	0	-2.449	0.014	60.0	SIGNIFICANT
URINE (R)	0	0	-4.490	0.000	44.9	SIGNIFICANT
ALASYA	0.5	0	-4.472	0.000	74.1	SIGNIFICANT

INVESTIGATION	MEAN		Z-VALUE	P-VALUE	% EFFECT	RESULT
	BT	AT				
BSL (F)	178.5	145.2	-9.763	0.000	18.7	SIGNIFICANT
BSL (PP)	244.2	200.2	-9.957	0.000	18.0	SIGNIFICANT
HbA1C	6.922	6.708	-7.959	0.000	3.1	SIGNIFICANT
BUL	30.3	28.6	-5.683	0.000	5.6	SIGNIFICANT
SR.CREAT	1.306	1.176	-6.810	0.000	10.0	SIGNIFICANT
WEIGHT(K G)	60.84	59.44	-8.312	0.000	2.3	SIGNIFICANT

% EFFECT -



Discussion on probable mode of action of drug:

Guduchi:

- *Katu, Tikta* and *Kashaya rasa*
- *Madhura vipaka*
- *Ushna virya*. (hot in potency)
- *Kapha Pittaghna, Mutrakrichhrajit, Grahi* and *Dahashamak*
- *Tikta, Katu, Kashaya rasa; Laghu guna* produces *rookshana* effect and they are having opposite qualities to that of *kapha* and *meda* hence they act as *mehaghna* and *kaphaghna*.
- *Bahudravatmaka kapha* is the main *dosha vishesha* involved in *Madhumeha*. These *Tikta, Katu, Kashaya rasa* possess the *kaphahara, meda* and *kleda upashoshna* properties, so *bahudravata* will be reduced by the absorption of excessive fluid from the body.
- It reduces the *prabhoot mutrata* i.e. *pratyatma lakshana* of *Prameha, Pipasa* which is dependent on *prabhoot mutrata* also subsides.
- *Guduchi* is described having property *mutrakrichhaghna*

hence it is having *gamitva* to that *strotas*. *Prabhoot mutrta*, *Avilmutrata*, *Mutramadhurya* are the symptoms which reduce effectively by its use.

Thus *Guduchi* due to its *rasa*, *viryā* and *vipaka* help to normalize the functions of *jathragni* and *dhatwagni*. That in turn helps to form *dhatu*s in proper proportion with *samyak* quality. Thus once these factors get normalize in the body they in turn clear the path of *vata* which stops the depletion of vital *dhatu*s and normalize the physiology of the body and disease *Madhumeha* get alleviate.

Madhu:

- *Sheet virya* (cold in potency)
- *Chakshushya* (improves vision)
- *Deepana* (improves digestion power)
- *Swarya* (improves voice)
- Heals ulcer
- Bestows softness - enters into minute pores
- Purifies the channels or tissue pores
- Reduces obesity
- Yogavahi

As it is Yogavahi, when it is combined with another drug its potency is aroused and it supports the activity of other drug.

The objective parameters showed high significance rate statistically with *Guduchi swaras* and *anupana madhu* as an adjuvant with Glimeperide. The subjective parameters Quantity of urine, *pipasa*, *Kshudha*, *Karapadtala daha*, *Avilmutrata*, *Mutramadhurya*, *Pindikouvestanam*, Total global count showed high significance rate statistically with *Guduchi swaras* and *anupana madhu* as an adjuvant with glimeperide.

CONCLUSION:

Guduchi swaras with *anupana madhu* is highly effective as an adjuvant with Glimeperide in *Madhumeha* (Type 2 DM) with uncontrolled BSL.

ABBREVIATIONS:

- **PR MU - Prabhut mutrata**
- **PIP - Pipasa**
- **ABH SHK - Abhyavarana Shakti**
- **KP DA - Karpadtala daha**
- **AVI MU - Avil mutrata**
- **SWE - Swedadhikya**
- **DAU - Daurbalya**
- **NID - Nidradhikya**
- **ALA - Alasya**
- **FBSL - Fasting blood sugar level**
- **PPBSL - Post prandial blood sugar level**
- **BUL - Blood urea level**
- **SR. CREAT - Serum creatinine**
- **F/H/O DM - Family history of diabetes mellitus**

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