



"ADD ON EFFECT OF TRIKATU CHURNA WITH GLIMEPERIDE IN MADHUMEHA ROGA (N.I.D.D.M.)"

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ABSTRACT

Diabetes has reached epidemic proportions and threatens to pose a growing worldwide public health care burden. The number of cases of diabetes is estimated to increase from 171 million worldwide in 2002 to 366 million in 2030. The greatest absolute increase in the number of people with diabetes will be in India.

Aim: To evaluate the add on effect of *Trikatuchurna* with glimeperide in relieving symptoms of hyperglycemias.

Methodology: Fifty *madhume* patients of either sex having uncontrolled BSL with Glimeperide were included in this study. *Trikatuchurna* (1000mg) is given orally two times before meals for 90 days with *koshnajala*. The dose of Glimeperide was maintained the same. All patients were evaluated based on clinical features and laboratory parameters.

Conclusion: *Trikatuchurna* with *anupana Koshnajala* is highly effective as an adjuvant with Glimeperide in *Madhumeha*.

KEYWORDS

Madhumeha, Diabetes Mellitus, *Trikatuchurna*, Glimeperide.

INTRODUCTION

Madhumeha also known as silent killer is the leading cause of morbidity and mortality around the globe, mainly in the developing countries like India. *Madhumeha* is described as *maharoga in samhita's* because it affects most part of the body, each and every cell of the human physiology and its complications leads to major threat in public health resources throughout the world. In Ayurveda *madhumeha* has been classified under the *Vatika* type of *Prameha*. *Vagbhata* has classified the *madhumeha* into two categories viz. *dhatukshayajanyamadhumeha* and *avarajanyamadhumeha*. The factors which provoke the *Vata* directly causes *apatarpanajanyamadhumeha* while the factors which provoke *Kapha* and *Pitta* causes *santarpanajanyamadhumeha*. The *apatarpanajanyamadhumeha* patients are usually *asthene* (emaciated) and are equivalent to Type I Diabetes mellitus, while the *santarpanajanyamadhumeha* patients are Obese equivalent to Type II Diabetes mellitus. Various Oral hypoglycemic agents, Insulin formulations, Life style modification plans, consisting dietary management and exercise, are some of the important efforts towards the management of Diabetes. In spite of these, world is seeking for a safer and effective remedy. Increased side effects, lack of effective treatment for complications, high cost of new drugs and resistance to the drugs are some reasons for renewed public interest in Ayurvedic medicines. *Trikatuchurna* plays the important role in *madhumeha* not only by reducing the blood glucose level but also by improving the quality of life.

MATERIALS AND METHODS

Study Location: The OPD and IPD of Seth TarachandRamnath Hospital, Rasta peth, Pune.

Study period: 90 days

Sample size: 50 patients

Study Design: Open labelled clinical trial

Inclusion Criteria:

- Patients with type 2 Diabetes having uncontrolled BSL with Glimeperide.
- FBSL- 121 -250mg/dl
- PPBSL- 151 -350mg/dl
- HbA1C less than 8.0mosmol/ml.

Exclusion criteria:

- Type 1 diabetes mellitus

- D.M with pregnancy
- Gestational Diabetes
- FBS more than 250mg/dl PPBS more than 350mg/dl
- HbA1C more than 8mosmol/ml
- Diabetes Mellitus with any other complications.

Methodology:

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Informed written consent from each patient fulfilling the inclusion criteria were obtained

Drug given - *TrikatuChurna* 1000mg twice daily before meal with lukewarm water

Regular follow up: Three months through clinical examination and laboratory investigations

Results and statistical analysis

Parameters for The Study

Clinical symptoms

- *Prabhutmutrata* (Polyurea)
- *Pipasa* (Polydipsia)
- *Kshudha* (Polyphagia)
- *AbhyavaranShakti* (Hunger)
- *Kara-Pada-Tala-Daha/Supti* (Neuropathy)
- *AvilaMutrata* (Turbidity)
- *Mutramadhurya* (Glycosuria)
- *Swedadhikya* (Perspiration)
- *Daurbalya* (Weakness)
- *Alasya/Utsahahani* (General Debility)
- *Pindikoudveshatan* (Cramps)
- *Purishabaddhata* (Constipation)
- *Ruchi, Jarana Shakti* (Digestion)
- *Nidradhikya* (Sleep)
- *ShramaShwasa* (Dyspnoea)

Laboratory investigations

- FBSL
- PPBSL
- HbA1C.

Data analysis: Paired t test and Wilcoxon rank test.

OBSERVATION, RESULT AND DISCUSSION

Demographic profile:

1. AGE - 3 (6%) patients were in 20-40 age group, 25 (50%) patients were in 40-60 age group, 22 (44%) patients were in 60-80 age group. It reveals that the individuals were more affected by type 2 DM in between 40-60yrs age group. The reason may include the environmental factors like stress, addiction, wrong food habits, sedentary life style etc.

2. SEX - 21 (42%) patients were males and 29 (58%) were females. Majority of the patients were female. The reason may include the Diet, sedentary lifestyle etc.

3. RELIGION -38 (76%) patients were Hindus and 12 (24%) were Muslims. We cannot conclude, that this disease is more in this community due to geographical dominance by particular community.

4. TYPE OF WORK -5(10%), 42(84%), 3(6%) patients having laborious, active and sedentary type of work respectively. Occupation plays significant role in the manifestation of *Madhumeha*. The routine activity causes some exertion by which chances of getting *Madhumeha* are less in such cases than the patients who live their life luxurious. But maximum patients in the present study were from active type. Stress factor also important for patients to get affected by *Madhumeha*, which depends on type of work.

5. F/H/DM -34 (68%) patients having positive family history for DM, while 16 (32%) patients having negative family history for DM. Type 2 Diabetes Mellitus has a strong genetic component and shows its significance.

6. AHARA - 45 (90%) patients having mix (veg & non veg) type of diet and 5 (10%) patients having only veg diet. This causes *medo* and *mamsadushti* by *samanyavisheshsidhant* and helps the etiological factors to vitiate the dosha and start the *Sampraptiof* disease. According to *SamanyaVisheshSidhantsimilar* properties having the power of gaining or increment and dissimilar properties having the power of reduction.

7. VYASANA -5 (10%), 7 (14%), 20 (40%), 13 (26%), patients having tea, tobacco, mishri and alcohol as there *Vyasana* (habit) respectively. It affects by causing dushti of *dosha* and *dushya*.

8. PRAKRITI - 1 (2%) patients having *kaphapittaprakruti*, 3 (6%) patients having *kaphavataprakruti*, 1 (2%) patients having *pittakaphaprakruti*. 19 (38%) patients having *pittavataprakruti*, 6 (12%) patients having *vatakaphaprakruti*, 20 (40%) patients having *vattapittaprakruti*. These shows that the main *dosha* for *Madhumeha* is Vata which get vitiated due to diet, lifestyle etc. leads to formation of *vatajprameha*.

9. AHARASHAKTI -20(40%), 1(2%), 29(58%) patients having *avara*, *pravara* and *madhyamaaharshakti* respectively. These shows the relation of *jatharagnimandyata*, *dhatwagnimandyat* with the pathogenesis of disease *Madhumeha*.

10. VYAYAMSHAKTI - 23 (46%) patients were having *avara*, 3 (6%) patients were having *pravara* and 24 (48%) were having *madhyamvyayamshakti*. As *avyayam* is one of the main causes for *medodhatudushti* and *medadhatuis* the main *dushyain* the *samprapti* of *Madhumeha*, patients with *avyayam* were prone to *Madhumeha*.

TABLE NO. 1: STATISTICAL ANALYSIS OF LAKSHANA

LAKSHANA	MEAN	S.D	S.E	Two-tailed P value	Significance
P.M. BT	0.9800	0.3188	0.04508	<0.0001	Significant
P.M.AT	0.06000	0.2399	0.03393		

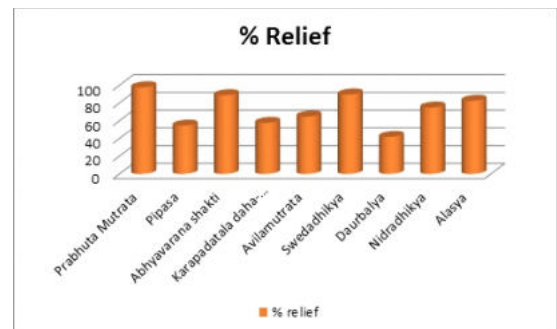
PIPASA BT	0.6800	0.5127	0.07251	<0.0001	Significant
PIPASA AT	0.3200	0.4712	0.06664		
A.SHAKTI BT	0.8000	0.6061	0.08571	<0.0001	Significant
A.SHAKTI AT	0.1600	0.4219	0.05966		
K.P.D.S. BT	0.5800	0.6091	0.08614	<0.0001	Significant
K.P.D.S. AT	0.2800	0.4536	0.06414		
A.M. BT	0.3400	0.4785	0.06767	0.0010	Significant
A.M. AT	0.1200	0.3283	0.04642		
SWEDA BT	0.9600	0.6376	0.09017	<0.0001	Significant
SWEDA AT	0.2600	0.4431	0.06266		
D.B. BT	0.9200	0.4445	0.06286	<0.0001	Significant
D.B. AT	0.5600	0.5014	0.07091		
NIDRA BT	0.08000	0.2740	0.03876	0.2500	Non-Significant
NIDRA AT	0.02000	0.1414	0.02000		
AALASYA BT	0.5000	0.5803	0.08207	<0.0001	Significant
AALASYA AT	0.1200	0.3283	0.04642		

Statistically there was significant difference for the subjective Parameters-Frequency of Urine, *Karapadataladaha*, *Avilamutrata*, *Daurbalya*, *Swedadhikya* etc. as $p < 0.05$

TABLE NO. 2: STATISTICAL ANALYSIS OF INVESTIGATION

INVESTIGATION	MEAN		T-VALUE	P-VALUE	RESULT
	BT	AT			
BSL (F)	175.22	145.22	15.245	0.000	SIGNIFICANT
BSL (PP)	244.62	201.30	18.497	0.000	SIGNIFICANT
HbA1C	7.04	6.86	3.280	0.002	SIGNIFICANT

FIG.NO. 1: PERCENTAGE OF RELIEF



Discussion on probable mode of action of drug

Trikatuchurna have the *tikshna* (Pungent) and *ushna* (Hot)guna. With the help of these *guna*, *Lekhana* (Scraping) of *kleda* and *kapha* from the *dhatu* was done.

Vatashamana and *Kaphaghna* karma was done with the different properties of *Trikatuchurna* as- *Ushnavirya* (Hot potency), *Katu* (Pungent) *rasa*, *Laghu* (Light)-*Ruksha* (Dry)-*Tikshna* (Pungent) *guna*. Important factors in the *etiopathogenesis* of *Prameha* are *Kapha*, *Meda* and *Kleda*.

Trikatuchurna acts by affecting the *samprapti* of *Prameha* by *Shodhana* (Cleaning) and *Chedana* (Removing) of *Kleda* and *Lekhana* (Scraping) of *Kaphadosha* and *Medadhatu*.

In such a way *Trikatuchurna* plays significant role in the management of *Madhumeha*.

ABBREVIATION

- P.M.PrabhutaMutrata
- A.M. Avila Mutrata
- A.SHAKTI Aharashakti
- K.P.D.S.Karapadataladahasupti
- D.B.Daurbalya
- FBSL Fasting blood sugar level
- PPBSL Postprandial blood sugar level

- BT Before treatment
- AT After treatment

CONCLUSION

There is strong evidence to state that Trikatuchurna with anupanaKoshnajala is highly effective as an adjuvant with Glimeperide in Madhumeha (Type 2 DM).

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