



Comparative Study Of Panchatiktaghruta Guggul As An Add-On Effect In Madhumeha With Special Reference To Non-Insulin Dependent Diabetes Mellitus

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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”. Allopathic medicinal science is always changing and adaptable to newly derived conditions. With the help of several mechanisms these OHA's act by lowering blood sugar levels but, the cause remains untreated. Also, sometimes it is observed that though person is taking several oral hypoglycaemic drugs but still their BSL levels are not in good control. Panchatiktaghrut guggul has been Ref. by Bhaishajya Ratnavali (54/233-238) and it is indicated in treatment of Madhumeha. (Falasruti). Here, in this study, we compared Panchatiktaghrut Guggul as an add on therapy with oral hypoglycaemic agents and results were encouraging in many aspects of clinical and biological parameter.

Index Terms - Ayurveda, Diabetes mellitus, Madhumeha, Add-on therapy

I. INTRODUCTION

Madhumeha, an age-long disease known from Vedic period. In Ancient times we find a vivid description of the disease solely attributed to metabolic derangement along with genetic predisposition. Currently, various anti diabetic drugs in modern medicine are used for controlling diabetes which is lifelong requirement. Their long application causes gastro-intestinal disturbance, renal and hepatic impairment, etc. Diabetes is a lifestyle disorder that is linked to several other health problems like obesity and cardiovascular disorders. Hence, finding a definite and precise treatment is extremely challenging. Researchers are now moving towards several alternatives and combined approaches to manage diabetes. The goal of future innovation is to have varied treatment options for this ever-growing population of diabetic individuals to reduce the longterm health and financial burden.

Madhumeha subtype of Vataja Prameha due to involvement of vital elements like Majja, Shukra, Problems in the Oja metabolism causes alarming health instability with higher prevalence. Vata is the conductor of healthy life and vitality supporter of all the Dhatus and Mala and sustains long life free of disorders. Sushruta emphasized that Vyana and Apana vitiation causes Shukra Dosa and Prameha. Vyana because of its potential to perform the functions related to each and every body element and Apana due to its potential related with excretion. This superior consideration of Susruta proved to be essential as treatment modality.

Panchatiktaghrut guggul has been Ref. by Bhaishajya Ratnavali (54/233-238) given for the treatment of Madhumeha in the indications (Falashruti). Efficacy of Panchatiktaghrut guggul in management of Madhumeha needs to be proved by application of biochemical markers. As per Ayurveda, all ingredients of

this formulation are Pramehaghna, Tridosha shamaka, Rasayana, Pachana, Agnideepan, Amapachana, Shodhaka, Kledashoshaka. These Gunas and Karma helps in Samprapti Bhanga of Prameha.

II. MATERIALS AND METHODS

Total of 69 patients were enrolled in the study on basis of inclusion criteria and classified into two groups. Treatment duration was 120 days.

1. Group A- 30 patients in Group- A got the treatment of Panchatiktaghrut guggul 500mg. + Metformin500mg. and Glimpiride1mg.
2. Group B- 30 Patients in Group- B got treatment of Metformin500mg and Glimpiride1mg were selected for clinical trial.

09 Patients were recorded as a drop out during this clinical study. Patient's consent was taken, explaining the purpose of research, expected duration, description of procedure to be followed, risks and discomfort. Record and follow up of all the patients included in the trial were documented and maintained in case record form.

Inclusion Criteria:

1. Patients with Signs & Symptoms of Madhumeha.
2. Patients between age group of 30 - 70 years.
3. Type-2 Diabetes mellitus (NIDDM)
4. HbA1C - <10

Exclusion Criteria:

1. Type -1 (IDDM)
2. HbA1C - > 10
3. Patients below age of 30 years and above 70 years.
4. Patients with any major systemic complications of DM.
5. Patients having any other major illness.

Both groups were assessed in duration of 120 days on basis of assessment criteria. Each patient was assessed each month as baseline, 30th day, 60th day, 90th day, 120th day. After 120 days, total data was collected and classified for statistical evaluation.

Assessment criteria consist of five main symptoms of Prameha. They are Prabhutmutrata (Polyuria), Avilamutrata (Turbid urine), Naktamutrata (Nocturia), Hastapadtaldaha (Neuropathy), Pipasa (polydipsia). BSL- Fasting and PP reading and urine Sugar levels were measured on each follow up. Whereas, HbA1c was measured on Day 0 (zero) and 120th day of the study.

Assessment Criteria:-

Subjective Assessment -

The clinical symptoms marked in four grades-

0 – Absent

1 - Mild.

2 - Moderate.

3 - Severe.

Prabhut mootrata –

Quantity –

Normal average urine output is 1500 ml and more than this quantity will be consider as Prabhut mootrata.

Frequency-

(0) Absent

(1) Mild - 6-7 times (day)

(2) Moderate - 8-9 times (day)

(3) Severe - 9 & above (day)

Avila Mootrata-

(0)Crystal clear fluid - 0

(1)Faintly cloudy or smoky (turbidity barely visible) - 1

(2)Turbidity clearly present but newsprint easily read

Through test tube

(3)Newsprint cannot be seen through test tube - 4

Naktamutrata-

(0) Absent.

(1) Mild – 1 times/night

(2) Moderate - 2-3 times/night

(3) Severe - >3/night.

Hastapadtala Daha –

(0) Absent

(1) Mild- (no disturbance in routine work)

(2) Moderate - (routine work disturbed)

(3) Severe – (cannot do routine work)

Pipasa

(0) Absent

(1) Mild - Increased thirst but can be controllable

(2) Moderate - Increased uncontrolled thirst with increased frequency Of drinking water.

(3) Severe - Very much increased thirst with increased frequency & intake

Objective Assessment -

1. HbA1C: Less than 6 % - normal
6 – 8 % - good control
8 – 10 % - fair control
>10 % - poor control
2. BSL: Fasting > 140 mg/dl
PP > 200mg/dl)
3. Urine Sugar Level: +, ++, +++

Results:

Unpaired T- Test and Wilcoxon signed rank test are the statistical tests used for the data evaluation that has generated during the clinical study. The data was grouped into two headings: A) Demographic data B) Clinical Efficacy of the drug.

Demographic data assessed under Age, Gender, Occupation, Prakriti, Agni, Koshtha, Akruti, Diet, Dietary factors, Lifestyle. Whereas, Clinical efficacy of drug is assessed with help of Clinical and pathological findings.

1. Group A shows highly significant relief in the chief complaints of Madhumeha when compared within group. They are- Prabhut mutrata, Naktamutrata, Pipasa and significant relief in Avilmutrata, Hastapadataldaha.

2. Group A shows significant relief in Naktamutrata (Nocturia) and Pipasa (Excessive thirst) when compare with Group B.(Table1,2)

Table –1 Comparison of statistical observation of Naktamutrata(Nocturia) between two groups.

Nakta mutrata	Mean difference score	Sd	Mann-Whitney Z	P
Group-A	1.00	.525	2.395	0.017 Sig
Group-B	1.33	.479		

Table– 2 Comparison of statistical observation of Pipasa (Excessive thirst) between two groups.

Pippasa	Mean difference score	Sd	Mann-Whitney Z	P
Group-A	1.13	.434	2.323	0.020 Sig
Group-B	.90	.305		

3. Group A is **highly significant** in reducing blood sugar, Urine sugar and show significant reduction in HbA1c when compared within group. Whereas, Group A is **not significant** in reducing BSL and HbA1c when compare to group B.(Table 3,4,5)

Table – 3 Comparison of statistical observation of BSL Fasting between two groups.

Fasting	Mean difference	Sd	Unpaired T	P
Group-A	3.77	30.811	1.171	0.248 NS
Group-B	10.97	13.584		

Table– 4 Comparison of statistical observation of BSL Postprandial between two groups

PP	Mean difference	Sd	Unpaired T	P
Group-A	7.70	43.911	1.076	0.288 NS
Group-B	17.13	19.385		

Table – 5 Comparison of statistical observation of HbA1c between two groups

HbA1c	Mean difference	Sd	Unpaired T	P
Group-A	.297	.639	0.572	0.569 NS
Group-B	.227	.198		

4. Group A shows **significant** result when compared with group B in reducing Urine sugar(fasting, post prandial)

Table – 6 Comparison of statistical observation of Urine Sugar Fasting between two groups

Urine Fasting	Mean difference score	Sd	Mann-Whitney Z	P
Group-A	.30	.535	3.009	0.003 Sig
Group-B	.30	.000		

Table – 7 Comparison of statistical observation of Urine Sugar post prandial between two groups

Urine PP	Mean difference score	Sd	Mann-Whitney Z	P
Group-A	.47	.860	2.586	<0.01 Sig
Group-B	.03	.183		

6. The hetus like Virudhashana (90%), Adhyashana (38%), Ajirnashana (70%), ushapaan (75%), dughdavikar (65%), atiguruahara (66.7%), Avyayama (90%), Diwaswapna (61.7%), Chintadhikya (76.7%) are some findings from both groups which indicate Santarpanjanya origin of disease.

Discussion:

Panchatiktaghrut guggul having the properties of Tridosha shamana, Pachana, Amapachana, Agnideepana, Shodhana, Rasayana and Vajikarana helps in samprapti bhanga by normalizing the doshas and reducing the Abaddhata of Sleshma and meda. It also reduces Shaithilya of Dhatus thus improving the quality of dhatus. Nidan parivarjan plays great role along with dravya chikitsa. This can be mainly achieved by Pathya Ahar-Vihar. In this study, it is seen that though patient is not having Panchatiktaghrut guggul (Group B) but following proper Pathya Ahar- Vihar had showed considerable reduction in clinical parameters.

Formulation of Panchatiktaghrut Guggul has many contents which act in synergism to show their effects on Dushta Dosha, Dahtu and Mala. Most of the contents of this Kalpa are with Tikta, Katu, Ushna, Ruksha properties. Dominancy of these Gunas results in Deepan, Pachana, Lekhana, kleda meda mutra Shleshma shoshana, reduces Abhishyanda, Sroto shodhaka. Then next to them, Kashaya rasa acts like Stambana, Shoshan, Srotas Vishodana, Kleda shoshana. Along with all these contents, this Kalpa has considerable amount of Ghruta. It is very useful for Ojo Wrudhhi. Apart from that, it is Yogavahi so helps to carry and enhanced the effect of other drugs. This makes drug more potent and lead to carry another property i. e. Sukshma Srotogamitwa. Guggul is another chief content of this drug. It is Lekhan, Tridosahar, Vedanasthapak. It help in reducing the symptom like Hastapad tal daha or suptata. It also shows its effect on abaddha kapha, meda, regulates vata and nervous system. Some contents of Panchatiktaghrut guggul have specific property as Pramrhar. They are Guduchi, Haridra and Trikatu. Some are Rasayan dravyas like Triphala, Guduchi, Bhallatak.

Madhumeha is associated with disturbance in the immune system of body due to vitiation of Dosha Dhatu and involvement of Oja. Many studies shows that even patients with non-complicated diabetes have raised levels of IgA, decreased levels of IgG and normal IgM in serum. Immune mediated beta cell destruction is one of the important factors in the development of DM. The usefulness of immune modulators in the treatment of initial phases of DM has been well established. Rasayana therapy is particularly important in the management of the *Madhumeha*. Rasayana works as Prakruti Sthapan at the level of every Dhatu, Srotas and every Anu-parmanu by revitalizing them. It has been researched that it either act direct on immune system or can act on psycho-neuro immune (PNI) axis to regulate immune system.

Conclusion:

Based upon the results of the clinical study displayed in the form of tables & graphs & critically discussed in previous chapters, the conclusions are presented herewith,

1. Group A shows highly significant relief in the chief complaints of Madhumeha when compared within group. They are- Prabhut mutrata, Naktamutrata, Pipasa and significant relief in Avilmutrata, Hastapadataldaha.
2. Group A shows significant relief in Naktamutrata and Pipasa when compare with Group B.
3. Group A is highly significant in reducing blood sugar, Urine sugar and show significant reduction in HbA1c when compared within group.
4. Group A shows significant result when compared with group B in reducing Urine sugar(fasting, post prandial)
5. On the other hand, Group B shows significant reduction in HbA1c as compared to group A.
6. The hetus like Virudhashana (90%), Adhyashana (38%), Ajirnashana (70%), Ushapaan (75%), Dughdavikar (65%), Ati Guru Ahara (66.7%), Avyayama (90%), Diwaswapna (61.7%), Chintadhikya (76.7%) are some findings from both groups which indicate Santarpanjanya origin of disease.
7. This study revalidates the concept of need of Hetu-viparit Chikitsa. So the Nidan-Parivarjana is mandatory for results in the treatment and better management of patients.
8. While concluding, Group A (Panchatiktaghrut guggul and Metformin and Glimiperide) was more effective in improving the clinical symptoms and change in biochemical parameters and may also be effective in curbing complications of Diabetes mellitus in comparison with only Metformin and Glimiperide.
9. The present study was carried out on small sample for limited period and it showed encouraging results in patients of Madhumeha. So further study is needed with extended follow up to reduce the dosages of conventional hypoglycemic agents. No adverse effects were observed in both groups.

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