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EVALUATION OF THE EFFICACY OF MUSHKAKADI GANA KASHAYA IN THE MANAGEMENT OF MADHUMEHA W.S.R. TO DIABETES MALLITUS

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ABSTRACT:

Background: Madhumeha is disease known since ancient times to the mankind. Charaka has described the main cause of disease as the defect in genetic mechanism (beejadosha). The disease is being characterized with prabhoota avilamootrata along with madhura, kashaya and rookshamootra. The main causes being the addiction to pleasures of sedentary habits and intake of kapha aggravating factors. The Santarpanajanya Madhumeha patients are sthoola equivalent to Type II Diabetes mellitus. In Avaranajanya madhumeha, Kapha is the predominant Dosha while the important Dushyas are Meda and Kleda. Type II Diabetes mellitus is mainly associated with Avaranajanya Samprapti. In Madhumeha, the main Avaraka are Kapha, Pitta, Rasa, Mamsa and Meda, and out of these Meda is predominant. **Methods and materials:** A clinical study with help of Mushkakadigana kashaya [Sushruta Samhita] was carried out in the department of kayachikitsa DGMAMC, Gadag. This clinical trial was carried out on 30 patients of Madhumeha aged between 40 to 70 years with complaints of Prabhutamootrata, Avilmootrata, Karapadadaaha, Kshudhadhikyata, Pipasaadhikyata, Atisweda, Dourbalya, Shariradourgandhya who were registered in OPD and IPD of DGMAMC, Gadag. Mushkakadigana kashaya was at the dose of 20 ml twice a day before food with sukhoshnajala for 30 days. The clinical assessment was done on subjective parameters. **Results:** The kashaya possess statistically significant response in the management of Madhumeha. No side effects were observed during administration of kashaya during trial period. **Conclusion:** From this study it can be concluded that kashaya is safe to use in Madhumeha patients. This kashaya is safe and effective in Madhumeha and can be recommended in Madhumeha.

Keywords: *Madhumeha, Diabetes Mellitus, Mushkakadigana kashaya.*

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INTRODUCTION

Today, Stress is a part of our lives. Because of invention of new technology, people become more mechanical, because of this materialistic world and run after money, there is increase stress which leads to various physical and psychological disorders and various diseases like hypertension, Heart disease, and most harmful Diabetes Mellitus. Sometimes Diabetes type II is described as a life style disease because it is more common in people who don't do enough physical activity and who are overweight. Overweight, diet, no exercise, smoking, alcohol intake may each independently influence a person's risk of getting Diabetes. Diabetes Mellitus is a classical metabolic disorder of tissue and cellular level, which can be correlated with *'Dhatvagnimandhya'* as per our classics. This metabolic disorder results in long-term disease like microangiopathy (nephropathy, neuropathy and retinopathy) and macroangiopathy like coronary artery disease. *Ayurveda* in fact is the first medical science, which identified, diagnosed & managed *Madhumeha*. While claiming it is incurable much earlier to Greek physician Aeratus (1-2 AD). It is one of the *Mahagadas*[1] in which maximum number of *Srotas* gets vitiated with the vitiation of almost all the *Dhatus* and *Ojas* due to which the condition of the patient afflicted with *Madhumeha* goes on deteriorating. *Madhumeha* is classified under the *Vatika* type among 20 types of *Prameha*[2]. *Acharya Vagbhata* has classified the *Madhumeha* into *Dhatukshayajanya* and *Avaranajanya Madhumeha*[3]. The factors, which provoke the *Vata* directly, cause *Apatarpanajanya Madhumeha* while the factors, which provoke *Kapha* and *Pitta*, cause *Santarpanajanya Madhumeha*. The *Apatarpanajanya Madhumeha* patients are usually *Krusha* and are equivalent to Type I Diabetes mellitus, while the *Santarpanajanya Madhumeha* patients are *sthoola* equivalent to Type II Diabetes mellitus. In *Avaranajanya Madhumeha*, *Kapha* is the predominant *Dosha* while the important *Dushyas* are *Meda* and *Kleda*. Type II Diabetes mellitus is mainly associated with *Avaranajanya Samprapti*. In *Madhumeha*, the main *Avaraka* are *Kapha, Pitta, Rasa, Mamsa* and *Meda*, and out of these *Meda* is predominant[4]. The classical symptoms include thirst (polydypsia), polyurea, nocturia and rapid weight loss. The etiologies of diabetes include greater longevity, obesity, unsatisfactory diet, sedentary lifestyle and increasing urbanization[5]. Diabetics without proper glycaemic control may develop the acute complications like hypoglycemia, diabetic ketoacidosis and non ketotic hyperosmolar

coma. The serious long-term complications include cardiovascular disorders, limb amputations, chronic renal failure, retinal damage[6] and even lead to adult blindness[7]. Today's knowledge about the disease has increased largely but it is not even the half way of total understanding. It is so because it has multi factor involvement and hence more work has to be done in the details of the diseases and the treatment. It is even seen in practice that many patients suffer from various kinds of diabetic complications even their blood sugar is well under control. The well-known drugs like glibenclamide, glipizide for managing diabetes have the side effects like hypoglycemia, allergic skin reactions, skin rash etc. Metformin have nausea, anorexia, abdominal discomfort, diarrhea etc. as their side effects. Though these drugs produce the satisfactory glycemic control because of their side effects they are not considered as ideal drugs for diabetes[8]. 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.

AIMS AND OBJECTIVES

- To Evaluate the Efficacy of *Mushkakadi Gana Kashaya* in the Management of *Madhumeha*
- To Evaluate the Efficacy of Hypoglycemic Activity of *Mushkakadi Gana Kashaya* in *Madhumeha*

MATERIALS AND METHODS

Study design: Explanatory research design

Thirty patients are treated with *Mushkakadi Gana Kashaya* for 30 days after they satisfy inclusive criterion. Hence the purposive sampling technique and explanatory research design is adopted.

Sample size:

The study is undertaken in a single group of 30 patients who satisfies inclusive criterion. Simple random sampling method is used for selection of patients.

Source of data of Trial drug

The data was collected from the patients suffering from *Madhumeha* in the OPD of post-graduation and research center DGM *Ayurvedic* medical college Gadag. The method of the present study consists of following headings.

- Selection of the patient
- Examination of the patient
- Criteria of assessment

Selection of the patient:

Patient suffering from *Madhumeha* will be selected from OPD and IPD of DGMAMC and hospital after fulfilling the preset inclusion and exclusion criteria.

Inclusion Criteria:

- Age group between 40-70 years is included.
- The patients with *Prabhoota, avilamootrata* along with the other classical signs and symptoms like *Atitrushna* (polydipsia), *dourbalya* (tiredness) and *karapadadaha* will be included.

Exclusion criteria:

- Patients below 40 and above 70 years of age.
- Patients suffering from other systemic disorders like renal, cardiac disorders.
- *Sahaja* and *Jataja Madhumeha* i.e. Type 1 patient.
- Patient with diabetic gangrene and carbuncles and other complications of diabetes like diabetic nephropathy and retinopathy.
- Diabetic ketoacidosis.

- The signs and symptoms of *Madhumeha* mentioned in *Ayurveda* and contemporary science were the main basis of diagnosis and criteria for assessing the response to the treatment.
- Assessments of results were made according to clinical and functional improvement observed in the study which are described under subjective and objective parameters.

SUBJECTIVE PARAMETERS

- *Prabhutamootrata*
- *Avilmootrata*
- *Karapadadaaha*
- *Kshudhadhikyata*
- *Pipasaadhikyata*
- *Atisweda*
- *Dourbalya*
- *Shariradourgandhya*

Diagnosis criteria

Table No. 01 –Grading of subjective criteria.

Symptoms	*0*	*1*	*2*	*3*
Prabhutamootrata	1.5 to 2.5lit/day	2.5 to 3.0lit/day.	3 to 3.5lit/day.	3.5 and onwards lit/day
Avilmootrata	Crystal clear fluid	Faintly cloudy or smoky slight turbidity	Turbidity clearly present (news print easily read through tube)	Turbidity more, Newsprint cannot read
Karapadadaaha	No Daha Present	*Pada* or *Karataladaha* incontineous	*Pada* or *Karataladaha* continuos but not	*Pada* or *Karataladaha* continuos and

				severe
Kshudhadhikyata	Normal Appetite.	2 meals/day slightly increased	2-3 meals / day moderately increased	4 to 5 meals/day markedly increased.
Pipasaadhikyata	1.5 to 2.5 lit/day	2.5 to 3lit/day	3 to 3.5 lit/day	3.5 lit and more/day
Atisweda	Only after strenuous work	After doing normal work	Just after walking little distance	On sitting also
Dourbalya	Can do routine exercise/ work.	Can do moderate exercise with hesitancy	Can do mild exercise with difficulty	Cannot do mild exercise too
Shariradourgandhya	*Absence of bad smell*	*Occasional bad smell removed after bathing*	*Persistant bad smell limited to close areas*	*Persistant bad smell felt from long distance*

Objective parameters

- Glycated Hemoglobin - HbA1C
- Fasting blood sugar
- Post prandial blood sugar
- Fasting urine glucose
- Post prandial urine glucose

Posology:

***Mushkakadi Gana kashaya* –** 20 ml twice a day before food.

Anupana– *Sukhoshna Jala*

Study duration:

- Study duration: *Mushkakadi Gana kashaya*-30 days.
- Duration of follow up for 30 days
- Total duration 60 days

Assessment of results

Assessment will be done by considering the base line of data of subjective and objective parameters to pre and post medication and will be compared for assessment of result. All the results will be analyzed statistically by paired t-test.

Clinical assessment was made on the basis of symptoms viz. *prabhootamootrata, kshudha* etc. which are allotted grades according to their severity or to that of normalcy. The grades are followed as under:

c) HbA1c:

HbA1c is determined in laboratory.

Criteria of Assessment

Overall assessments of results are done considering the cumulative subjective and objective parameters

assessments. As the disease is not totally curable in the scheduled time span of the study, the grades of assessments made for the results declaration are as follows.

Good response

Blood sugar level reduced more than 75 mg / dl and 75% relief in signs and symptoms.

Moderate response

Blood sugar level reduced in between 25 to 75 mg/dl and 50% relief in signs and symptoms.

Mild response

Blood sugar reduced below than 25 and 25 % relief in signs and symptoms.

Not responded

No reduction in blood sugar level and less than 25% relief in signs and symptoms.

Table No. 02- Effect of therapy on subjective parameters

Parameter	Mean			Mean difference	%of relief	SD	SE	T-value	P-value	Remarks
	B.T.	A.T.	A.F.							
Prabhuta mootrata	1.16	0.46	0.1	1.06	91.37%	0.907	0.165	6.440	<0.001	H.S.
Avil mootrata	0.36	0.30	0.23	0.13	36.11%	0.345	0.062	2.112	0.0434	N.S.
Dourbalya	1.2	0.23	0.1	0.1	91.66%	0.402	0.073	14.965	<0.001	H.S.
Karapada daha	2.43	0.93	0.06	2.36	97.11%	0.668	0.121	19.385	<0.001	H.S.
Khudhadikyata	1.16	0.23	0.06	1.1	94.82%	0.402	0.733	14.965	<0.001	H.S.
Pipasa	1.2	0.23	0.1	1.1	91.66%	0.305	0.055	19.745	<0.001	H.S.
Atisweda	1.0	0.16	0.1	0.9	90%	0.480	0.087	10.255	<0.001	H.S.
Sharira dourgandhya	1.0	0.13	0.06	0.93	93%	0.449	0.081	11.365	<0.001	H.S.

Table No. 03- Treatment result in patient number and percentage

Results	No. of Patients	% of the Result
Marked Improvement	05	16.66
Moderate Improvement	13	43.33
Mild Improvement	12	40
No Change	00	00%

The overall treatment result of 30 patients shows Marked Improvement in 05 (16.66%) patients, Moderate Improvement in 13 (43.33%), Mild Improvement in 12 (40%) patients.

In Diabete mellitus *Muskakadi gana* showing results due to *tikta ,kashay rasa pradhanata* and *ushna veerya* which act as *deepana, pachana* because of these properties it is beneficial to overcome insulin resistance and receptor activity is stimulated.

DISCUSSION

Most of these drugs are having *tikta, kashayarasa, laghu, rukshaguna* and *katuvipaka*. These are said to be *kaphagna, mehagna, medoghna, stambhaka* and *mootrasangrahaneeya*. *Tikta, kashayarasa, laghu, rookshaguna* produces *rookshana*effect and they are having opposite qualities to that of *kapha* and *medas*. Hence they act as *mehagna* and *kaphagna*. So, this drug may have been effective on *kapha* and *pitta* and also on *vata*. This *tridosha shamaka* property of this drug helped to correct the *dhatudushti* and *srotodushti* leading to their normal functioning. *Bahudravata* of *kapha dosha* will be present in *Madhumeha*. These *tikta rasa* and *kashaya rasa* drugs possess the *kaphahara, Meda, Kleda Upashoshana* properties.. When *kleda* reaching *basti* reduces then *prabhoota mootrata pratyatmalakshana* of *Prameha* also reduces.*Pipasa* which is dependent on *prabhoota mootrata* also subsides. *Muskaka* by its *kaphapittasamaka* property alleviates *pipasadhikya* in *Madhumeha*.

Further *Madhumeha* is a metabolic disease, *dhatvagnimandhyjanita vyadhi*. This metabolic disease demands *meda dhatvagni vriddhi*. When any agni is not proper, *dhatus* are not produced properly. *Muskaka Gana* having *deepana* & *pachana* drugs and *tikta rasa, ushna virya* encounters *dhatvagnimandya* & potentiates the *dhatvagnimandhya* and help in *ama-pachana* thereby alleviates *aparipakwa* and *ama.* That in turn helps to form the dhatus in proper proportion with *samyak* qualities. There by it ensures *sarvadhatuposhana* thereby pacifies *Daurbalya*. *Muskaka Gana* produce *malashodana* there by it eliminates the metabolic wastes, vitiated *pitta dosha* along with *kapha dosha* & thus removes *avarana of vata* there by normalizing the digestive power which helps to control the symptom. This may account for better relief in *Kshudhaadhika*.

Increased sugar in blood and urine is may be due to disturbance in metabolism i.e. Dhatvagnimandya and due to increased *Ama* production as a result of *Agnimandya.* Fasting blood sugar and urine sugar might have produced due to produced due to *Rasadushti*

by *Ama* or due to *Rasadhatvagnimandya.* Though both fasting and post-prandial sugar are present in blood, their mechanism of production is quite different. As fasting blood sugar is increased due to inadequate suppression of

gluconeogenesis i.e. insulin deficiency and post-prandial blood glucose is increased due to reduced peripheral utilization of glucose i.e. insulin resistance. This Trail drug i.e. *Muskakadi Gana Kashyam* have not so significant effect on sugar level, but it shows significant effect on subjective parameters. With all these properties *Muskakadi Gana Kashyam* can be effective in all types of *Prameha.*

CONCLUSION

Madhumeha has been classified under the *Vatika* type of *Prameha. Kapha* is the *arambakadosha* & *vata* is the *preraka*. *MargavaranaJanya Madhumeha* & *dhatukshayaJanya madhumeha* are the two forms of manifestation of the disease. In this study all the patients were having *margaavaranjanyamadhumeha*.

Diabetes Mellitus is correlated with *Madhumeha* especially Non-insulin Dependent Diabetes Mellitus which have the similar pathogenesis and manifestation.

The study confirms the dominancy of *Kapha Dosha, Meda Dhatu dusti* and *Medovaha srotodusti* in the pathogenesis of *Madhumeha*. The line of treatment is based upon *Tikta, Kashaya Rasa, Ushna veerya Kapha-Vatahara* and *Pramehaghna* properties of the drugs for oral medication. The parameters both subjective and objective showed high significance rate statistically.

Along with treatment patient is supposed to adopt the *Pathya-apathya* as explained in classics. This is nothing but essential tool in the management of *Madhumeha*. This is strong evidence to state that the *Mushkakadi Gana Kashaya* is good supportive drug along with hypoglycemic agent combination of *Ayurveda*.

REFERENCES

1. Brahmanand Tripathi. Astanga Hridaya, Nidana 8/30;Reprint ed, Chaukhambha Sanskrit pratishthan; Delhi;2007;487
2. Kasinatha Sastri . Caraka samhita, Nidana 4/39; Reprint ed, Chaukhambha Bharati Academy; Varanasi;2001; 638
3. Brahmanand Tripathi. Astanga Hridaya, Nidana 10/18; Reprint ed, Chaukhambha Sanskrit pratishthan;Delhi;2007;497
4. Kashinatha Sastri .Caraka samhita, Sutrastana 17/78-80; Reprint,Chaukhambha Bharati Academy; Varanasi;2001;352
5. Nicholas A boon, Nicki R Colledge, B.R Walker, J A Hunter ed. Davidson's principles and practice of medicine part-2 chapter 21; 20th edition , Churchill Livingstone Edinburgh London;2006; 808
6. www. Wikipedia.com/diabetes.

7. Fauci Braunwald, kasper, Hauser, Longo, Jameson, Loscalzo. Edited Harrison's principles of medicine vol 2,part15;7th edition, McGraw Hill;2009;2287

8. Apsi F Golwalla.edited medicine for students, endocrine disorders, chapter 6; 21st edition,439-442

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