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Review Article

**A Role of Herbal Formulation in the management of Diabetes mellitus
(*Madhumeha*)- A Review Article**

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ABSTRACT-

Diabetes mellitus is a growing health hazard in developing countries. As a psychosomatic disease and due to most dangerous complications, DM has grabbed the attention of health community all over the world. Diabetes mellitus (DM) is a clinical syndrome characterized by hyperglycaemia due to absolute or relative deficiency of insulin. According to A etiological factor, pathogenesis and clinical features Diabetes mellitus correlated with *Madhumeha* in *Ayurveda*. *Madhumehi* patients pass sweet urine in addition to excessive urine. Intake of *Guru*, *Snigdha*, *Picchhila* substances, intake of new grains, meat of *Anupa* and *Jalchara* animals, milk and milk products, jaggery and its products, flour, lack of exercises, sedentary life style are the causes of *Madhumeha*. Even the genetic basis of the disease has been highlighted in the *Ayurveda*. Similarly, Modern science also recognizes that sedentary lifestyle, Obesity and genetic factors also play an important role in its development. So due to lack of effective medicine, wide spectrum of disease, need of time is to go for cost effective, safe and efficient treatment of *Madhumeha*. Keeping all above points in mind a herbal formulation has been selected to know the effect in treating *Madhumeha* (Diabetes

Mellitus). Herbal formulation contents are *Gurmaara, Amalaki, Vijayasara, Karela, Guduchi, Neema, Jamuna, Methi, and Chirayata*.

Keywords– Diabetes Mellitus (DM), *Madhumeha*, herbal formulation.

INTRODUCTION-

Diabetes is a disease of global concern. With increased modernization and materialism its incidence is increasing day by day. Diabetes mellitus (DM) is a clinical syndrome characterized by hyperglycaemia due to absolute or relative deficiency of insulin¹. In *Ayurveda*, this condition can be explained as *Madhumeha*. *Madhumeha* is a type of *Vataja Prameha* in which patient passes honey like sweet urine. It is considered as disease of vitiated *Vata* and *Kaphadosha* and *Agnimandya* is present in *Madhumeha*. *Aacharya Charaka* has used term

“*bahudravashleshmatathaavabadhameda*” in the description of *Prameha* and *Dushyas* involved in it are mainly *Meda, Mamsa, Kleda, Shukra, Shonita, Vasa, Majja* etc. are all *Kapha Vargiya* which indicates it is a multi-system disorder.

WHO estimates that globally 422 million adults aged over 18 years were living with diabetes in 2014. The global prevalence of diabetes has grown from 4.7% in 1980 to 8.5% in 2014, during which time prevalence has increased or at best remained unchanged in every country². According to IDF Atlas 2017, 425 million over age 20-79 years are diabetics and 629 million individuals will have diabetes by the year 2045.

Though many studies have been carried out for this burning problem, still there is need of evaluation of certain drugs clinically on various scientific parameters which could be safe, effective, cheap & readily available in the management of *Madhumeha*.

Rationale/Justification:

Despite the immense investment in drugs and therapeutics for the management of *Madhumeha*, its prevalence is increasing at an alarming rate. *Madhumeha* does not come alone; it brings with itself the various metabolic complications of hyperglycaemia both acute and chronic affecting every organ from head to toe. Once an individual is diagnosed with *Madhumeha* the dosage of medicine is ever increasing and ultimately insulin has to be given for glycaemic control. As *Madhumeha* is often associated with obesity, dyslipidaemia, hypertension, insulin resistance, known as metabolic syndrome, an intervention capable of handling all these associated conditions is necessary.

In *Ayurveda* ‘*Madhumeha*’ is *Vata* and *Kaphadosha* *pradhan Vyadhi* and *Dushyas* are all *Kapha Vargiya*. So ideally in *Shamanachikitsa* such drugs should be used in its treatment which possess *Agni deepana* properties and should pacify the effects of aggravated *dosha* like *Katu, Tikta, Kashaya, Ruksha Dravyas*.

The herbal formulation is having mainly the above said properties and the ingredients of the formulation are easily available, easy to administer in patients and cost effective. So it has been selected to know the effect in treating *Madhumeha*.

Aims and Objectives:

- To explore an *Ayurvedic* Oral Hypoglycaemic Formulation, which is safe, economical, easily accessible to the patients and also devoid of side effects.
- To explore the Hypoglycaemic effects of the proposed medicine in *Madhumeha* on scientific level.

Materials and Methods:

- Ayurvedic textbooks were referred to collect the relevant materials.
- The index, non-index medical journals were referred to collect relevant information.

Symptoms of Hyperglycemia:(According to modern text book)³

- Polydipsia (Thirst, dry mouth)
- Polyuria
- Hyperphagia, predilection for sweet foods
- Nocturia
- Tiredness, fatigue, lethargy
- Noticeable change in weight (usually weight loss)
- Blurring of vision
- Pruritus vulvae, balanitis (genital candidiasis)
- Nausea, headache
- Mood change, irritability, difficulty in concentrating, apathy

Clinical Feature of *Madhumeha*(Diabetes Mellitus) by *Ayurveda* -

- The clinical entity in which patient voids the urine having concordance with *Madhu*⁴ i.e. of *Kashaya* and *Madhura* taste, *Ruksha* (dry) texture and honey like colour and body

acquires sweetness called *Madhumeha*.

- In *Madhumeha* which is incurable and caused by the aggravation of *Vata*, the patient passes urine, sweet and astringent in taste, pale in colour and unctuous⁵.

Pathogenesis (*Samprapti*)-

Samprapti of '*Madhumeha*' is best described by *Acharya Vagbhata*. *Vagbhata* has divided it into two types according to *Samprapti*⁶.

- A. *Dhatukshayaja Madhumeha*
- B. *Aavaranjanya Madhumeha*

In *Aavaranjanya*

/Santarpanajanya Madhumeha due to excessive indulgence of *Guru*, *Snigdha*, *Amla*, *Lavan Ahara*, *Kapha* and *Pitta* are vitiated. They block the natural pathway of *Vata*. Therefore aggravated *Vata* vitiates the *Dushya* like *Kapha*, *Meda*, *Mamsa* and the vital body components are excreted through urine. And *Oja* which is supreme part of all *Dhatu*s is excreted ultimately.

In case of *Dhatukshayajanya/Apatarpanajanya Madhumeha*, *Vataprakopaka Ahara-Vihara* leads to aggravation and vitiation of *Vata*. Therefore in this type *Vata* is becomes more harmful than the previous type. This aggravated *Vata* disturbs the normal metabolism of body and cause *Kshaya* of all vital *Dhatu*s. In both these types *Aparaoja* is excreted through urine. The first type of *Madhumeha* is considered to be *Asadhya* and no precise remedy has been suggested for it. But the later type has been told as *Krichhra Sadhya* and can managed with extensive treatment.

Besides this, one more process i.e. *Dhatvagnimandya* is important part of the *Samprapti*. As, in *Prameha Agni* is also

disturbed due to various factors which disturb the balance of *Tridosha*. Therefore anything which is ingested is converted in *Ama*. So, the process of *Dhatuposhana* and *Dhatu-utpatti* is hampered. Again this *Agnimandya* is responsible for the *Dhatvagnimandya* of each *Dhatu*. In *Prameha*, especially *Medodhatvagnimandya* is observed. Therefore the treatment should be in path of restoration of *Agni* in its normal state and having *Kaphamedohara* property. It should also possess *Rasayana* and *Balya* effect as all *Dhatu*s are involved and *Ojakshaya* is seen in the disease. Also in the *Madhumeha* (Diabetes Mellitus) there are degenerative changes in the body especially in the islets cells of pancreas which resembles *DhatuKshaya* in Ayurveda.

As per *Ayurveda* according to the potency of particular feature of etiology, *Dosha* (innate pathogenic factors) and *Dushyas* (substratum of pathology), response occurs in the form of non-

manifestation or otherwise of the disorders. When these three factors do not combine together or if combined after a long time or in weakened state, disorder will not be there, or it will manifest lately, or in a mild form or without all the said symptoms. On the contrary, the result will be contrary. Thus is said the cause of response in the form of none or otherwise of all disorders.

DrugReview:

Selection of drug is milestone in any research project because success of the project is totally depends on that. In *Ayurveda*, the action of drugs is determined on the basis of pharmacodynamics properties such as *rasa*, *guna*, *veerya* and *vipaka* along with certain unexplained specific properties called *Prabhava(karma)*. These drugs in combination act as antagonist to the main morbid factors i.e. aggravated *dosha* and *dushya* to cause *SampraptiVighatana* so as to allay the symptoms of the disease.

TableNo .1. Showing the In Ingredients of Herbal Formulation.

S.No.	Name of the drug	Botanical Name	Part Used
1.	<i>Gurmaar</i>	<i>Gymnemasylvestre</i>	Whole plant
2.	<i>Amalaki</i>	<i>Embllicaofficinalis</i>	Fruit
3.	<i>Vijayasara</i>	<i>Pterocarpusmarsupium</i>	Stem
4.	<i>Karela</i>	<i>MomordicaCharantia</i>	Fruit
5.	<i>Guduchi</i>	<i>TinosporaCordifolia</i>	Stem
6.	<i>Neem</i>	<i>Azadirachtaindica</i>	Bark
7.	<i>Jamun</i>	<i>SyzgiulmJambos</i>	Seeds

8.	<i>Methi</i>	<i>TrigonellaFoenum</i>	Seeds
9.	<i>Chirayata</i>	<i>Swaritiachirayata</i>	Whole plant

Method of Preparation

All the constituents of drugs should be taken in equal quantity and check out for their identity, quantity and quality. The individual drugs should be mixed and make into powder form. After that powder should be given *bhavana* with *chirayata* decoction for two times. Medicated powder should fully dried and then pack in small polythene bags.

Probable Mode of Action ofHerbal formulation:

Most of the drugs in herbal formulation have *Katu, Tikta Rasa, Laghu, RukshaGuna, UshnaVirya, Vata-KaphaShamaka*and *Dipana-Pachana*properties.*Kapha*on the other hand is *Guru, Snigdha, Shita*. Because of all these properties, Herbal formulation has the ability to counteract the effect of *Kapha*. Thus the aggravated *Kapha* subsides resulting in proper functioning of *Agni* and hence preventing *MargaavarodhjanyaVataPrakopa* thereby breaking the pathogenesis of the disease.*Kashaya Rasain*herbal formulationwill act as a controller of excessive urination, *Dhatukshaya*and *Ojakshaya*through urine by their *Stambhan*properties. It will absorb*Kleda, Meda, Vasa* and *KaphaDosha*.*UshnaVeerya, Katuand Tikta Rasawill* helps to normalise the function of *Jathragni*and *Dhatwagni*.*Laghu, RuksaGunawill* help for the *Shosana*of *BahudravaShlesma* and reduction of vitiated *Meda andKleda*. Thus once these factor get normalized in the

body they in turn make clear the Path of *Vata*which stops the depletion of vital *Dhatu*sand restore normal physiology. Similarly due to *Rasayana(Guduchi andVijayasara)*properties like*Dahashamana, Balya, Stambhana, Mootrasangrahana*, etc it will also help in managing symptoms of diabetes mellitus like, weakness, fatigue, burning sensation in hands and feet, impotency, etc. There have been many researches of the individual plants of Herbal formulation showing hypoglycaemic action. So we can say that Herbal formulation could be used in the management of Diabetes Mellitus.

Conclusion:

Diabetes Mellitus is a common chronic metabolic disease associated with substantial risk for morbidity and premature mortality.Medical therapy is just a part of the diabetes management and not a whole treatment.There are so many drugs available in modern medical science for the treatment ofDiabetes Mellitus(*Madhumeha*)but they are associated with adverse effectsbut Ayurvedic principles of management can help the patient to have bettercontrol of blood sugar with noadverse effectsand makes free the dependency on medicine.So,Herbal formulationcould play this role and can show it'shypoglycemic effect.Further, various researches have already been conducted in favour of their hypoglycemic effect. So we can use this herbal formulation for the treatment of *Madhumeha*(Diabetes mellitus).

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