



Madhumeh w.s.r. to Type 2 Diabetes Mellitus-A Review.

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ABSTRACT:

A chronic metabolic condition with numerous etiologies, diabetes mellitus affects people all over the world. However, the prevalence of diabetes has increased recently, which is particularly troubling in developed countries. An estimated 537 million adults (20–79 years) were living with diabetes worldwide in 2021, of which 14% (74.2 million) were from India, the country with the second largest number of people with diabetes in the world. This number is projected to increase by 68% (124.9 million) over the next 25 years. More worryingly, slightly more than half (53.1%) of people with diabetes in India are unaware of their condition. The main causes of diabetes mellitus in the present period include an entirely sedentary lifestyle, eating a lot of junk food, and weight increase. Based on the symptoms, this metabolic condition is classified as *Madhumeha* in Ayurveda. It is a *Vataja Prameha* that develops as a result of different *nidanas*. As an outcome, Ayurveda should be considered for the treatment of diabetes mellitus.

Keywords- *Madhumeha*, diabetes mellitus, *nidana*, Management, *Vataja Prameha*,

INTRODUCTION

Diabetes mellitus (DM) is probably one of the oldest diseases known to man. Type 2 DM (formerly known as non-insulin dependent DM) is the most common form of DM characterized by hyperglycemia, insulin resistance, and relative insulin deficiency^{1,2}. Type 2 DM results from interaction between genetic, environmental and behavioral risk factors.^{3,4} People living with type 2 DM are more vulnerable to various forms of both short- and long-term complications, which often lead to their premature death. This tendency of increased morbidity and mortality is seen in patients with type 2 DM because of the commonness of this type of DM, its insidious onset and late recognition. Based on symptoms, this metabolic condition is sub-classified as *Vataja Prameha*⁵ in Ayurveda and might manifest depending on the

predominance of one or more Doshas.⁶ The disease *Madhumeha*, its description, etiology, clinical manifestations, and several means of treatment are comparable to the disease diabetes mellitus, as explained in detail by Acharya Charaka. *Madhumeha* develops from two sources: the aggravation of *vata* brought on by *dhatuksaya depletion/loss* of tissues, and the doshas obstructing its path (movement). In the case of obstruction, the *vata* occasionally displays the symptoms of the dosha that covers it; as a result, the bladder is occasionally found to be empty and occasionally to be full, making the disease more challenging to treat. If left alone, all varieties of *prameha* will eventually turn into *madhumeha*. Dietary and lifestyle changes, anti-diabetic medications taken orally, and insulin injections are the



mainstays of diabetes management.⁷The main symptom predominantly which will be seen in patients as explained by Acharyas are *prabhoota mootrata* (polyuria), *aavila mootrata* (Turbidity of urine), *atipipasa* (polydipsia), *kshud- ati pravrutti* (polyphagia), *dourbalya* (debility), *karapada daha* (burning sensation on palms and soles).⁸ Searching for Ayurvedic treatment for diabetes is essential. The ideal standard protocol for treatment with effective medications remains elusive despite the fact that numerous studies have been undertaken in this area. This article will highlight, evaluate, elaborate and discuss about diabetes mellitus with special reference to *Madhumeha*.

MATERIAL & METHODS

Material related to is *Madhumeha* & type 2 diabetes mellitus collected from text book of Ayurveda, commentaries and modern medicine respectively. The index, non-index medical journals has also referred to collect information of relevant topic.

Review Of Literature

Etymology of *madhumeha*

Madhu and *Meha* are the two words which make up the word *Madhumeha*. The source of the term *Madhu* is "*Manyante Visheshena Janati Jana Yasmin.*" The root "*Manjane*" is used by *Dha Adesha* and it demonstrates the likeness of urine in taste, colour, and appearance, among other things. The *Rigveda's Mehanadtanam Karanallium* is where the word "*meha*" first appears.⁹ *Madhumeha* is clinical condition in which the patient voids the urine which has similarity with *Madhu* i.e., *Kashaya* (astringent) and *Madhura* (sweet) *Rasa* (taste), *Rukshatwa* (dry) and *Madhu* (honey) like colour and body acquires sweetness is called *Madhumeha*.

Aetiology

The causes of the diabetic syndrome include sedentary lifestyles and the enjoyment of excessive sleep, milk and its preparation, freshly harvested grains, new/fresh wines, jaggery preparations (cane sugar preparations), and all other kapha-aggravating elements.¹⁰

Pathogenesis

Pathogenesis of *Madhumeha* is best described by Acharya Vagbhatta. He said *Madhumeha* can originate in two ways-

- By the aggravation of *Vata* caused by *Dhatukshaya*.
- By the obstruction of *Vata* caused by *Doshas* covering it. Due to the loss of *Oja*, *Madhumeha*, which is brought on by *Dhatukshaya*, presents as a thin and asthenic person. The vitiated *Kapha* and *Meda* in *Margavaranjanya*

Madhumeha hinder *Vata's* movement. *Madhumeha* is manifested when the blocked *Vata* becomes vitiated once more and carries *Ojus* to *Basti*.¹¹ According to Ayurveda, responses take the form of illnesses not manifesting or not manifesting at all depending on the potency of a particular characteristic of the aetiology, *Dosha* (innate pathogenic components), and *Dushyas* (substratum of pathology). The disorder will not exist, or it will manifest recently, in a mild form, or without all the mentioned symptoms if these three components do not combine, or if they do so after a long period or in a weaker state. Contrarily, the outcome will be the opposite. According to this, all ailments have a common cause that may or may not appear as a response.¹²

Classification

After reviewing detail description of *madhumeha* in various ayurveda texts and commentaries, it can be classified as shown in table on the basis of aetiology, pathology, and prognosis. (Table 1)

Classification of Diabetes Mellitus¹⁵

- **Type-1 Diabetes Mellitus**-Juvenile diabetes, also known as type 1 diabetes, is typically discovered in children, teenagers, and young adults. Adults may develop type 1 diabetes. This autoimmune condition results in the particular destruction of pancreatic beta cells, which results in absolute insulinopaemia.
- **Type-2 Diabetes Mellitus**- The most prevalent kind of diabetes, type 2, which used to be known as adult-onset diabetes, has a sneaky beginning. Although it frequently affects adults, it can also affect children. Except in cases of extreme hyperglycaemia, weight loss is unusual, and ketosis is uncommon. The inheritance of genes occurs frequently. This kind of diabetes typically manifests as insulin resistance with initial counter-regulatory hyperinsulinemia. Clinical diabetes emerges as the pancreas eventually loses its capacity to produce enough insulin in response to meals.
- **Gestational Diabetes**- With an onset or initial recognition during pregnancy, gestational diabetes is a form of carbohydrate intolerance that causes hyperglycaemia of varying severity.

Premonitory Symptoms

Premonitory symptoms according to ayurveda texts include burning sensation in the palms and soles of the feet, heaviness in the body, sweet-smelling urine, stupor, debility, profound thirst, dyspnoea, increased accumulation of bacteria in the mouth, throat, tongue, and teeth, hairs that sticks together, and increased hair and nail growth.¹⁶

Clinical Features

The passing of copious amounts of turbid or cloudy urine, the transformation of the urine into honey like urine, and an overall increase in sweetness are the main symptoms of the diabetes.¹⁷ Additionally, *Sahajameha Rogi* are typically *Krishha* (thin build), while *Apatyanimittaja Rogi* are typically *Sthula* (obese), according to Sushrutacharya.¹⁸

Complications of diabetes mellitus -Table no 2.
Complications of diabetes mellitus¹⁹

Investigations²⁰

Disease-Specific

1. Measurement of the plasma glucose level
2. Random blood sugar (RBS)
3. Fasting blood sugar (FBS)
4. Postprandial blood sugar (PPBS)
5. Urine routine and microscopic
6. Glycosylated haemoglobin (HbA1c)
7. Lipid Profile
8. Serum insulin and c-peptide

Other

1. Blood urea and serum creatinine
2. E.C.G.
3. Fundus examination
4. Serum electrolytes

Management

1. Patients with Type 1 Diabetes Mellitus, also known as *Krishha Pramehi*, are typically advised to have *Bringhan* as well as a diet which increase Dhatus in the body.
2. In type 2 Diabetes, Obese diabetic patients (*Apatyanimittaja Rogi*) with optimal body strength having intense increase of Doshas, *Samshodhan* (purification) of the body advocated.
1. *Snehana* (preparation of oil internally &externally)
2. *Shodhana* (Purification therapy)
3. *Shamana* with drugs.
4. Exercise and life style modification &following regular regimen of exercise,
5. yoga, pranayama and regular food& sleep
6. following *Ritucharya & Dincharya*.

Diabetes can be controlled by giving comprehensive attention to three aspects

1. *Ahara* (Diet)
2. *Vihara* (Exercise)
3. *Aushadha* (Medicine)

The role of *ahara and vihara* are equally or even more important than drugs in order to control blood sugar level as well as to prevent complication of this disease.

• Some Herbal medications use in *Madhumeha*

1. *Musta*(*Cyperus rotundus*)
2. *Daruharidra* (*Berberis aristata*)
3. *Arjuna* (*Terminalia arjuna*]
4. *Khadir* (*Acacia catechu*)
5. *Lodhra* (*Symplocos racemosa*)
6. *Guduchi*(*Tinosporacordifolia*)
7. *Patol* (*Trichosanthe dioica*)
8. *Vata* (*Ficus bengalensis*),
9. *Udumbar*(*Ficusglomerata*),
10. *Gudmar* (*Gymnema sylvestre*)
11. *Asana* (*Pterocarpus marsupium*),
12. *Shilajit*(Purified Bitumen)
13. *Kumbha* (*Leucascephalotes*)
14. *Nimba* (*Azardicta indica*).²¹

• Some *Aushadhi* (Medicines) use in *Madhumeha*

1. ***Ghrita &Taila***- *Trikantakya Sneha*,*Dadimadhya Ghrita*, *Shalmali Ghirta*,*Dhanvantar Ghirta*, *Triphala Ghirta*,
2. ***Asava-Arista***-*LodhraAsava* or *Madhva Asava*, *Dantya Asava*, *Devdarvadi Arista*.
3. ***Leha (Paste)***-*Salsaradi leha*, *Kusha Avleha*, *Vanga Avleha*.
4. ***Udaka***-*Sarodaka*, *Kushodaka*,*Madhukodaka*, *Sidhu*, *Madhvika*.
5. ***Vati (Tablet)***-*Trikatukadya Modaka*,*Shiva Gutika*, *Shilajatvadi Vati*, *Chandraprabha Vati*, *Indra Vati*, *Gokshuradi Vati*, *Aarogyavardhini Vati*.
6. ***Churna(powders)***-*Nyagrodadi Churna*, *Eladi Churna*, *Karkatbijadi Churna*, *Triphala Churna*.
7. ***Rasa/ Bhasam***-*Vasantakusumakar Rasa*, *Brihta Bangeshwar Rasa*, *Suvarnavanga*, *Apurvamalinivasant Rasa*, *Harishankar Rasa*, *Panchanana Rasa*.
8. ***Kwatha (Decoction)***-*Phalatrikadi Kwath*, *Darvyadi Kwath*, *Vidangadi Kwath*, *Triphaladi Kwath*²²

• *Pathya and Apathya*

Shyama, *Kodrava*, *Godhum* and *Kullatha* which are old-are suitable to be used as foods by patients of *Madhumeha* (Diabetes). Vegetables of bitter taste (*Tikta*), meat of animals and eggs of birds of deserts like regions (*Jangala mamsa*),boiled *Yava* and its preparations, *Mudaga*, *Shali*, and *Shastika* are all suitable as foods. *Sura* (beer), Butter milk, oils, milk ghee, jaggery, foods processed with sours, sugarcane, juice, food prepared from flour, meat of animals of marshy regions should be avoided from use.²³

Yoga

Every type of metabolism in the body is improved by yoga. Because of this, people with diabetes should

practise various forms of yoga. Yoga will undoubtedly benefit those with diabetes. In current era whole world is looking forward to ayurveda and showing interest in yoga. *Padmasana, Shalabhasan, Mayurasan, Suryanamaskar, and Dhanurasan* are common asanas that can be highly helpful for diabetes.²⁴

DISCUSSION

A metabolic disorder with numerous aetiologies, diabetes mellitus is referred to as *Madhumeha* in traditional Ayurvedic literature. Two types of clinical presentations are identified as Type-I and Type-II diabetes, respectively, in *Krishna Pramehi and Sthula Pramehi*. Ayurvedic treatment concepts can assist the patient in having better blood sugar control and a higher quality of life. Modern therapy has numerous limitations. The specially prepared Ayurvedic diet and lifestyle plan in the present study have all the potential to maintain the glycemic index of *Madhumeha* (DM) patients. Cases of Diabetes Mellitus is increasing rapidly, because of increases in the prevalence of a sedentary lifestyle and obesity. Through appropriate use of Ayurvedic preventive measures such as *Aharavidhi, Pathya, Apathya, Yoga*, and therapeutic measures *Madhumeha* (Diabetes Mellitus) can be prevented. The appropriate approach of diet, daily regimen, exercise, and medication can be well managed by Ayurveda.

CONCLUSION

Diabetes Mellitus can be conservatively managed by modification in a person's diet, exercise routine, medications, and way of life. Many herbal remedies and herbal medications have been shown to be effective in treating diabetes in recent Ayurvedic study. which, while being somewhat secure for long-term use, are only helpful in mild to moderate diabetics and lose their effectiveness with continued usage. Ayurvedic treatment concepts can assist the patient in having better blood sugar control and a higher quality of life. Modern therapy has numerous limitations. In addition, lifestyle changes such as adopting healthy eating practises, yoga, and exercise play a crucial role in the management of diabetes mellitus.

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Table 1 Shows Classification

S. No.	Classification	Types
1	Etiological ¹³	<i>Sahaja or Kulaja</i> (Hereditary) <i>Apathyanimittaja</i> (Acquired)
2	Clinicopathological ¹⁴	<i>Kaphaj</i> - 10 types <i>Pittaj</i> - 6 subtypes <i>Vataj</i> - 4 subtypes
3	Constitutional	<i>Sthula</i> or <i>Balvana</i> (Obese Type2DM) <i>Krishna</i> or <i>Daurbalya</i> (Asthenic Type1DM)
4	Prognostic	<i>Sadhya</i> (Curable) <i>Yaapya</i> (Pallable) <i>Aasadhya</i> (Incurable)

Table no 2. Complications of diabetes mellitus¹⁹

Microvascular	Macrovascular	Other
Retinopathy (Proliferative /Non-Proliferative) Macular Oedema Neuropathy (Sensory and Motor) Nephropathy	Coronary Heart Disease Peripheral Artery Disease Cerebrovascular Disease	Gastro-Intestinal (Gastroparesis, Diarrhoea) Genito-Urinary (Uropathy/Sexual Dysfunction) Cataracts Glaucoma Dermatologic Related Periodontal Disease Hearing Loss