

AN AYURVEDIC CONCEPTUAL STUDY ON MADHUMEHA (TYPE-2 DIABETES): A
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ABSTRACT

The science of ageing, or Ayurveda, teaches us the principles and guidelines for leading long, healthy lives. Ayurveda has a great role in maintaining a healthy life, followed by *Dinacharya*, *Ritucharya*, *Sadvritta*, and *Acharya Rasayana*, as well as recommendations for a balanced diet. Few individuals can follow them properly in the current scenario. As a result, there has been a significant rise in lifestyle diseases, among them *Prameha*. *Prameha* is a group of urinary disorders that is particularly marked by frequent and abnormal urination. According to *Acharya Charaka*, if you do not take care of all types of *Prameha*, everyone changes into *Madhumeha* according to time. The color or taste of urine becomes honey, like in *Madhumeha*. *Prameha* has been extensively described in various Ayurvedic classics, viz., *Charaka Samhita*, *Sushruta Samhita*, *Ashtanga Sngraha*, and *Madhav Nidan*. *Prameha* has 20 types. In modern science, we know *Madhumeh* as diabetes mellitus. Diabetes mellitus is a group of metabolic disorders marked by a high blood glucose level (hyperglycemia).

KEYWORDS: An Ayurvedic Conceptual Study On Madhumeha (Type-2 Diabetes).**INTRODUCTON**

Eight types of diseases have been described in *Charak Nidan*, of which *Prameha* is one. The classical symptom of *Prameha*, as described by our Acharyas, is "Prameha is a group of urinary disorders that is particularly marked by frequent and abnormal urination." *Prameha* is considered one of the *Mutragata rogas*, and all *Acharya* said *Prameha* has twenty types. According to the classification of *Prameha* according to *Tridosha Sidhandha*, *Kapha Prameha* is a teen, *Pitha Prameha* is six, and *Vata Prameha* is four. *Madhumeha* is one of the four types of *Vata Prameha*. *Madhumeha* is correlated with diabetes mellitus. Diabetes mellitus is a group of metabolic disorders marked by high blood glucose levels (hyperglycemia) resulting from defects in insulin production, action, or both. Depending on the etiology of diabetes, factors contributing to hyperglycemia include reduced insulin secretion, decreased glucose utilization, and increased glucose production. According to the International Diabetes Federation (IDF), 8.8% of the adult population has diabetes, and Current global statistics show that 463 million and 374 million individuals have diabetes mellitus.

AIMS AND OBJECTIVES

- To study the previous research works and to find out the untapped areas of research on MADHUMA.

- To provide future guidelines for research work regarding MADHUMA.

MATERIALS AND METHODS: Materials used are *Charak Samhita* and *Chakrapani Tika: Ayurveda Dipika*, various journals. After review of these materials observations are made and presented in this article.

HISTORY- Vedic literature- Vedic literature is the oldest literature in the world. In *Atharavaveda* (2500 BC) the disease is mentioned by the term "Aastravam" which means *Mutratisara* i.e excessive urination.

Valmiki Ramayana- The description about this condition of urine is available.

SAMHITA PERIOD

1-Charaka Samhita: In this ancient treatise of medical science, *Charaka* explained the etiology, pathogenesis, symptomatology, complications and treatment modalities in detail in *Nidana* 4th and *Chikitsa* 6th chapter, while in *Sutra Sthana* 17th chapter he described the *Avaranajanya* pathogenesis of *Madhumeha*, this is the unique contribution on this treatise.

2-Sushruta Samhita: Sushruta also explained the *Madhumeha* in elaborative manner with separate chapter on its management. He used 'Kshaudrameha' synonym

to *Madhumeha* in *Nidana* 6th chapter. He typically mentioned the decoctions according to each type of *Prameha* and mentioned the body constitution and symptoms related to *Sahaja* and *Apathyanimitaja Prameha*.

3-Vagbhata: *Vagbhata* categorized the disease under heading '*Mutraatipravrttija*' and mentioned two types of *Madhumeha* i.e. *Dhatukshyat* and *Avaritpathat* and added *Sweda* in the *Dusysangrah*.

4-Haritasamhita: Mentioned it as *Papajanya* and enumerated 13 types of *Prameha* with nomenclature different than above treatise like, *Puyameha*, *Ghritameha* etc (Ha. II, Sth. 1/9).

5-Bhela Samhita: He described *Prameha* is of two types i.e. *Svakrita* and *Prakritameha*.

6 Kashyapa Samhita: He just mentioned the symptoms of *Pramehi* child in '*Vedanadhyaya*' and noted the disease as *Chirakari*.

SANGHARA KALA

- 1. Madhava Nidana:** He collectively repeated the description of *Charaka*, *Sushruta* and *Vagbhata* (Ma. Ni. 33)
- 2. Sharangdhar Samhita:** Only mentioned the 20 types of *Prameha* in *Prathama Khanda* 7th chapter.
- 3. Bhavaprakasa:** He described *Prameha* and *Madhumeha* along with some new herbomineral preparations (Ma. Kh.38th Chap).
- 4. Yogaratnakara:** Explained *Prameha* and *Madhumeha* along with treatment.

ETYMOLOGY OF WORD MADHUMEHA

OBSERVATIONS AND DISCUSSION: After detailed study of *Prameha roga* and previous research work on *Prameha* the following observation haven noted. A lot of research works has been done in *Madhumeha*, its etiopathogenesis and clinical presentation and management part, which is highly appreciable.

PARIBHASA (DEFINATION)

This kind of illness causes *Prameha* to urinate frequently and abnormally. Urine that is frequently and abnormally turbid is also referred to as polly urea. Hyperglycemia, or elevated blood glucose, is a hallmark of a series of metabolic illnesses collectively known as diabetes mellitus. Polyurea, polyphagia, and polydypsia are classic signs of diabetic mellitus. Comprehending the Ayurvedic Samprapti (pathogenesis) of *Madhumeha* offers valuable understanding of its origin, advancement, and treatment. The purpose of this paper is to clarify the Samprapti of *Madhumeha* by fusing traditional Ayurvedic knowledge with contemporary insight.

NIDANA (Etiology)

According to Acharya charak chikitsa sthan chapter 6/4 is *Asya Sukha* (sedentary life style), *Suapan Sukha*(excess sleep) and conump sweets and fats food items which are all factors lead to increase of *kapha dosha* and cause *Prameha Rog*. Ayurveda describes various factors contributing to the onset of *Madhumeha*.

The primary etiological factors include dietary indiscretions (*Viruddha Ahara*), sedentary lifestyle (*Avyayama*), mental stress (*Manasika Durbhiksha*), and genetic predisposition (*Swabhava*). Excessive consumption of *Guru* (heavy), *Snigdha* (unctuous), and *Kapha*-aggravating foods leads to *Kapha* and *Meda* (adipose tissue) accumulation, impairing insulin sensitivity and glucose metabolism. Sedentary behavior further exacerbates this process by promoting *Ama* (toxic metabolic waste) formation and aggravating *Kapha dosha*. Mental stress disturbs the balance of *Vata* and *Pitta dosha*, impairing pancreatic function and insulin secretion. Genetic factors play a crucial role in determining susceptibility to *Madhumeha*, with a familial history increasing the risk of developing the condition.

BHEDHA (Classification): *Acharya Charak* states that *Prameha* has twenty *bhedha* in all. According to *Tridosha Sidhandha's*, classification, *Prameha* is classified as an adolescent, *Pitha* as six, and *Vata* as four. Among the four varieties of *Vata Prameha* is *Madhumeha*. *Madhumeha*, and *Diabetes Miletus* are connected. Type 1 diabetes (insulin dependency) and type 2 diabetes are the two main categories of diabetes *Miletus*.

SAMPRAPTI (Pathogenesis)

- According to Ayurvedic texts, the main causes of *Prameha* are overindulgence in certain foods and beverages such as *Navanna*, (food made from freshly harvested grains), *Rasa*, *Amla* (soura (salt), new wine, *Atinidra* (excessive sleep), *Avyayma* (lack of exercise), and *Guru* (heavy to digest). All of these elements contribute to a *dosha imbalance*, which results in *Mandagni* and the creation of *Amadosh*, which raises *kleda* and ultimately produces *Margavarana*. The result of aggravated *Vata* is turbid and copious urination, which leads to the development of *Prameha*, the diabetic equivalent of *Kleda* and *Oja* in the *Basti*. Two forms of diabetes mellitus exist.
- Ayurveda states that the pathogenesis of *madhumeha* is a series of events that impact different body systems and tissues in a sequential manner. The production of *Ama* is the result of the accumulation of *Kapha dosha* in the respiratory and digestive systems, or *Amashaya* and *Pranavaha Srotas*, respectively. Sticky and poisonous, *Ama* clogs the channels (*Srotas*) and interferes with the regular functioning of tissues (*Dhatu*) and tissue metabolism (*Dhatvagni*). Due to the partial digestion and metabolism of food resulting from this inhibition of *Agni* (digestive fire), partially digested food (*Vidagdha Ahara*) is formed.
- Pitta dosha* is further aggravated by the creation of *Vidagdha Ahara*, which causes *Pitta dosha* to become vitiated and spread throughout the body. Insulin resistance is the outcome of *vitiated Pitta*, which disrupts insulin signalling pathways and impacts *Meda dhatu* (adipose tissue).

Simultaneously, enhanced Pitta and worsened *Kapha dosha* interfere with *Rasa* and *Meda dhatus* function, resulting in the development of *Kapha-Meda Avarana* (obstruction of channels by *Kapha* and *adipose tissue*).

4. Impaired insulin signalling, insulin resistance, and channel obstruction work together to cause increased frequency of urine (*Prameha*), excessive thirst (*Trishna*), and emaciation (*Karshya*) as *Prameha* symptoms. The unchecked course of the illness eventually leads to the onset of *madhumeha*, a condition marked by persistent hyperglycemia and related consequences that impact various organs and systems.

PREMONITORY SYMPTOMS

In ayurveda we can find the described of early symptoms of disease. They are accumulation of dirt on the teeth (mouth, eyes, nose and, ears, a feeling of burning sensation in the skin all the over the body, thirst and a sweet taste in the mouth etc... and moothra madhuryam(sweetness of urine).

Clinical Features

Prameha symptoms, such as increased frequency of urination (*Prameha*), excessive thirst (*Trishna*), and emaciation (*Karshya*), are caused by a combination of poor insulin signalling, insulin resistance, and channel obstruction. *Madhumeha*, which is marked by persistent hyperglycemia and related problems that impact several organs and systems, eventually manifests as a result of the disease's unchecked progression.

According to Ayurveda

Malina Danta,(tartar in teeth), *Kar Pada Daha*,(burning sensation in hands and feet), *Deha Chikkanata* (excessive glossy or oily skin), *Trishna* (excessive thirst), *madhuryamasya* (sugary mouth sensation), *prabhuta mutrata* (excessive urination), *avila mutrata* (turbid urination), *madhu samana varna* (urine with a honey-colored urine), *Sweda* (excessive sweating), *Anga Gandha* (bad body odour), *shithilangata* (flaccidity of muscles), *Gala talu shosa* (dryness of the palate and throat), *shitapriyaatwa* (desire for cold food and surroundings), *sdhayana asana Swapna sukha* (desire for sedentary life).

PROGNOSIS

Three categories of prognoses are recognised by Ayurveda.

1. Patients who are *shtola* (obese), early-onset diagnosed, and whose condition arose from *apathyaja* are considered *sadhya* (curable).
2. *Yapya* (Palliable): Nonetheless, some forms of *kaphaja prameha* and *pittaja prameha* are helpful in the healing process.
3. *Vataja, Asadhya* (Incurable) describes a *Krishha* (lean) patient with *Sahaja* variety who has an incurable form of *Prameha* and inherited diabetes.

DIAGNOSIS

A mix of clinical assessment, laboratory studies, and evaluations of *Prakriti* (constitution) and *Vikriti* (imbalance) are used in the diagnosis of *Madhumeha*. Assessing symptoms such increased thirst, polyuria, weariness, and unintentional weight loss is part of the clinical evaluation process. Diagnostic and prognostic laboratory testing include glycated haemoglobin (HbA1c), renal function tests, oral glucose tolerance test (OGTT), fasting blood glucose, lipid profile, and renal function tests. Further insights into dosha imbalance and tissue pathology can be gained via Ayurvedic diagnostic techniques including *Nadi Pariksha* (pulse examination), *Mutra Pariksha* (urine examination), and *Jihva Pariksha* (tongue examination).

TREATMENT

Ayurvedic medicine employs a comprehensive approach that includes dietary adjustments, lifestyle counselling, herbal remedies, *Panchakarma* treatments, and *Rasayana* (rejuvenation) treatments.

The following categories apply to diabetic patient treatment principles: Diabetes comes in two varieties: 1. *Sthaulya*, the obese 2. The *Athenians, Krasha*

1. In *Sthaulya* (Obese). The primary focus of the treatment should be on making the most use of the extra fat, hence the patient should receive: (i) *Shodhana* (purification process): cleaning therapies include *vamana* (emesis induction), *virecana* (purgation induction), and *basti* (medicine administered anally). (ii) *Apatarpana* - reduction in body weight by way of diet control or drugs, *Vyayama* (exercise) etc., Fasting, Diet control.
2. In *krasha* (Lean patient) Asthenic type: the patient should never get excessive *Langhana* or *Apatarpana*, i.e., he should not be starved; instead, the focus of treatment should be on boosting stamina and vigour through tonics (*bramhana*), food, medications, etc. The goals of managing *Madhumeha* are to correct the underlying dosha imbalance, enhance insulin sensitivity, control blood sugar, and avoid or lessen consequences.

DIETARY MANAGEMENT

Dietary changes centre on eating foods that facilitate digestion, balance blood sugar, and *soothe* agitated *doshas*. Stable blood sugar levels can be achieved by prioritising whole grains, legumes, vegetables, fruits, lean proteins, and healthy fats while limiting processed meals, refined carbs, and sugar intake. Frequent exercise, such as yoga, resistance training, and aerobics, increases insulin sensitivity, encourages weight loss, and improves general wellbeing. Additionally, it aids in keeping blood sugar levels steady. Frequent exercise, such as yoga, resistance training, and aerobics, increases insulin sensitivity, encourages weight loss, and improves general wellbeing.

Herbal medicines with hypoglycemic qualities and support for pancreatic function include *gurmar* (*Gymnema sylvestre*), bitter melon (*Momordica charantia*), fenugreek (*Trigonella foenum-graecum*), and *turmeric* (*Curcuma longa*). *Panchakarma* treatments like medicinal emesis (*Vamana*), therapeutic purgation (*Virechana*), and medicated enema (*Basti*) aid in the removal of *Ama*, balance *dosha* imbalance, and revitalise the body.

Rasayana treatments are intended to fortify the body's tissues, boost immunity, and lengthen life. A number of herbal remedies, including *Triphala Guggulu*, *Amalaki Rasayana*, and *Chyawanprash*, are helpful in controlling diabetes and avoiding complications. In order to determine the effectiveness of treatment and modify therapeutic treatments as necessary, routine follow-up examinations and monitoring of blood glucose levels, lipid profiles, renal function, and other pertinent indicators are required.

CONCLUSION

One of the four Vata *Prameha* categories, *Madhumeha*, is related to diabetes mellitus. This *Prameha* category is *Aashady Vaydhi*, meaning that while *Madhumeha* cannot be cured, it may be managed, just like diabetes mellitus. Pharmacological methods, such as medication that lowers blood glucose levels, and fasting are examples of management. 2. non-pharmacological interventions consist of A diabetic's diet is crucial in lowering blood sugar levels when they consume the right proportions of fats, carbohydrates, and calories in relation to their blood sugar level. B. Insulin utilisation is enhanced by exercise. Engaging in physical activity can also assist regulate blood sugar levels and reduce the risk of heart and neuropathy. Thus, *Madhumeha* (diabetes mellitus) can be spoken.

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