



Ayurvedic Management of Diabetic Mellitus a Review

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Abstract

Diabetes Mellitus is a chronic metabolic disorder characterized by persistent hyperglycemia and rising global prevalence, highlighting the need for effective management strategies. In Ayurveda, it is described as Madhumeha, a subtype of Prameha, caused by imbalance of Doshas—mainly Kapha and Vata—along with impairment of Meda Dhatu.

This review summarizes the Ayurvedic perspective and management of Diabetes Mellitus based on available studies. Ayurvedic management focuses on Ahara (diet control), Vihara (lifestyle modification), Aushadhi (herbal medicines), and Panchakarma therapies to restore metabolic balance and prevent complications.

Several studies indicate that Ayurvedic herbs and formulations may exhibit hypoglycemic and metabolic regulatory effects, though strong clinical evidence is still limited.

In conclusion, Ayurveda provides a holistic approach to diabetes management, and integrating it with modern medicine may improve overall therapeutic outcomes.

Keywords: Diabetes Mellitus, Madhumeha, Ayurvedic Management, Herbal Medicine, Panchakarma.

Introduction

Diabetes Mellitus (DM), known as Madhumeha in Ayurveda, is a chronic metabolic disorder characterized by persistent hyperglycemia due to defects in insulin secretion, action, or both. According to the World Health Organization (WHO), diabetes is a condition in which the body fails to utilize insulin effectively, leading to long-term complications such as retinopathy, nephropathy, neuropathy, and cardiovascular diseases. The International Diabetes Federation (IDF) reported that 537 million adults were living with diabetes in 2021, and this number is expected to rise to 783 million by 2045^[1, 2].

In Ayurveda, Prameha is classified among the Ashtamahagada (eight major diseases) and is described as a group of urinary disorders characterized by frequent and abnormal urination. Based on Tridosha theory, Prameha is classified into twenty types: ten Kaphaja, six Pittaja, and four Vataja. Madhumeha is considered a subtype of Vataja Prameha and is described as its advanced or terminal stage. It is further classified into Apathyanimittaja (caused by unhealthy lifestyle and diet) and Sahaja (congenital or hereditary origin)^[3, 4].

Ayurveda aims to maintain balance among the

Panchamahabhutas and Tridoshas—Vata, Pitta, and Kapha—to preserve health. Imbalance of these doshas is considered the fundamental cause of disease, including Madhumeha/Diabetes Mellitus^[5].

Concept of Diabetic Mellitus in Ayurveda

Diabetes mellitus (DM), also known as Madhumeha in Ayurveda, is a long-term metabolic disease marked by high blood sugar levels brought on by deficiencies in either insulin activity or production, or both. Diabetes is defined by the World Health Organization (WHO) as a disorder in which the body is unable to effectively use insulin, resulting in hyperglycemia and possible long-term consequences such as retinopathy, nephropathy, neuropathy, and cardiovascular disorders. The International Diabetes Federation (IDF) estimates that 537 million persons worldwide had diabetes in 2021, and that number is expected to rise to 783 million by 2045^[1, 2].

Ayurveda highlights a number of variables that contribute to the development of diabetes, including changes in the population, sedentary lifestyles (Ekasthanasana), nutritional changes, and environmental changes, including occupational circumstances, lifestyle choices, and the quality of the air and

water. Ayurveda offers a thorough framework for managing diabetes, focusing on a holistic approach that includes dietary changes, herbal medicines, and lifestyle improvements. In addition to addressing individual constitution (Prakriti) and lifestyle issues, traditional Ayurvedic treatments seek to restore equilibrium among the body's three doshas, Vata, Pitta, and Kapha.

Acharya Sushrut distinguished between two types of Madhumeha, which is a subtype of Vataj Prameha or the terminal stage of Prameha. Apathyanimittaj and Sahaja: Apathyanimittaj refers to more food, unctuousness, and a constant desire to occupy bed, sit, and sleep, whereas Sahaja refers to natural factors that originate from inherited or congenital factors^[3] Diabetes Mellitus Is Associated With Madhumeha^[4] Diabetes Mellitus is a group of metabolic disorders characterized by elevated blood glucose levels, or hyperglycemia, which are caused by abnormalities in the production, action, or both of insulin^[6]. Reduced insulin secretion, decreased glucose utilization, and increased glucose production are factors that contribute to hyperglycemia, depending on the aetiology of diabetes.

Ayurveda holds that good health is correlated with achieving a balance between the doshas. Every living thing has a physiological and structural propensity toward particular doshas, and these imbalances can result in illness^[5]. "To bring their patients' doshas into optimal balance, Ayurvedic practitioners employ customized diet, exercise, and lifestyle in addition to procedural, medicinal, and herbal prescriptions."^[7] "In type 2 diabetes, the body is unable to control blood glucose levels due to a lack of sensitivity to insulin." "The ancient medical practice of Ayurveda, which is rooted in diet and lifestyle, is a promising traditional approach to the treatment of type 2 diabetes because both the cause and treatment of type 2 diabetes are related to diet and lifestyle."^[8] "Ayurvedic practitioners do not suggest a single treatment plan for their patients. Every patient has a unique set of symptoms, dietary habits, way of life, health issues, support networks, and spiritual beliefs when they first arrive at the clinic. In order to bring a patient's doshas into more perfect harmony, the treatment strategy is frequently customized to these unique features of their life."^[7] "Ayurvedic drugs may have both extrapancreatic and possible pancreatic effects."^[7]

Ayurvedic Management of Diabetes Mellitus

1. Herbal Solutions

- "Ayurvedic treatment for diabetes is based on herbs, and different botanicals are known for their hypoglycemic qualities."
- "Gymnema sylvestre (Gurmar) has been demonstrated to enhance insulin secretion from the pancreas and inhibit the absorption of glucose in the intestines."^[9, 10]

2. Dietary Changes

- "Diet is a key component of managing diabetes in Ayurveda."
- "Because of their high fiber content and low glycemic index, whole grains like barley (jau) and millet (bajra) are preferred."^[11, 12]

3. Modifications to Lifestyle

- "A key component of Ayurvedic diabetes treatment is lifestyle changes."
- "Ayurveda emphasizes physical activity, like yoga, walking, or other aerobic exercises, for managing diabetes."^[13, 14]

4. Therapy with Panchakarma

- "Panchakarma, an Ayurvedic detoxification method, is essential for the treatment of long-term illnesses like diabetes."
- "This therapeutic regimen entails a number of procedures aimed at restoring dosha balance and removing Ama from the body."^[15, 16]

Chikitsa (Medical Care)

Dietary changes, lifestyle counseling, herbal remedies, panchakarma treatments, and rasayana (rejuvenation) treatments are all part of Ayurvedic medicine's all-encompassing approach.

Principles of Treatment for Patients with Diabetes: There are two types of diabetes.

- i). The Obese, Sthaulya
- ii). Krasha, the Athenians
- iii). In Sthaulya (Fat).

Making the most of the excess fat should be the main goal of the treatment, so the patient should be given:

- i). Cleaning Therapies in Shodhana (Purification Process) Incorporate Basti (anally administered medication), Vamana (induction of esis), and Virechana (induction of purgation).
- ii). Apatarpana: Reducing body weight with medication or diet, exercise (vyayama), fasting, etc.

In Krasha (Lean Patient) Asthenic Type, the patient should never experience excessive Langhana or Apatarpana, i.e., starvation; instead, the focus of treatment should be on increasing stamina and vigor through food, medications, tonics (Bramhana), etc.

Correcting the underlying dosha imbalance, improving insulin sensitivity, controlling blood sugar, and avoiding or minimizing consequences are the objectives of managing madhumeha.

Pathya-Apathy (Managing Lifestyle + Diet)

Nutritional Suggestions

- Yava, Godhum (Wheat), Shyamaka, Kodrava, and Bajara are whole grains. Chanaka (Gram), Adaki, and Mudga (Green Gram) are pulses.
- Nimba, Sarshapa (mustard), Methika, Karbellak, Kulaka (patola), Shobhanjana, Karkotaka, Udumbara, Rasona (garlic), and Tikta Shakas are vegetables.
- Fruits: Talaphala, Kharjura, Tinduka, Jambu (Black Berry)
- Drink plenty of water, herbal teas, and soups to stay properly hydrated.

Herbal Cures

- Gymnema Sylvestre, or gurmar, is well-known for its capacity to lower blood sugar levels by decreasing the absorption of sugar.
- The bitter gourd (Momordica charantia) has hypoglycemic qualities and aids in blood sugar regulation.
- Fenugreek lowers blood glucose levels and improves insulin sensitivity.
- Curcumin, a compound found in turmeric (Curcuma longa), has anti-inflammatory and antioxidant qualities that may aid in the management of diabetes. The Indian gooseberry, or amla, is well-known for its capacity to increase metabolism and control blood sugar.

Ashwagandha: Promotes general health and aids with stress management.

Lifestyle Adjustments

Frequent Exercise: Including yoga and physical activities like cycling, swimming, or walking can help with blood sugar regulation and weight management.

Stress management techniques like deep breathing, mindfulness, and meditation are essential for controlling stress, which can affect blood sugar levels.

Sleep Hygiene: Getting enough good sleep is essential for metabolic health.

Detoxification: Panchakarma, an Ayurvedic detoxification method, may aid in removing toxins from the body and reestablishing equilibrium^[17].

Discussion

Diabetes mellitus, which is associated with Madhumeha in Ayurveda, is a fast-growing lifestyle condition that is impacted by poor food, sedentary behavior, and genetic predisposition^[17, 18]. Although their methods of treatment are different, both Ayurvedic and contemporary systems acknowledge the complex character of this illness^[19].

According to Ayurveda, Madhumeha is characterized by a derangement of Meda Dhatu and an imbalance of Tridoshas, primarily Kapha and Vata^[17]. This causes pathological alterations like elevated Kleda and compromised metabolism, which give rise to symptoms like weariness, polyuria, and polydipsia that closely mimic contemporary clinical characteristics of diabetic mellitus^[19].

While Ayurveda takes a holistic approach to treating the disease's underlying cause, modern medicine mostly concentrates on glycemic control through pharmacological therapy^[19]. Improving Agni (digestive fire), boosting metabolism, and fortifying body systems are all part of Ayurvedic treatment^[17].

A major part of managing Madhumeha is changing one's diet and way of living. Pathya-Apathya Ayurvedic principles place a strong emphasis on frequent exercise and a light, bitter, and astringent diet^[17, 18]. These suggestions align with current guidelines that emphasize the significance of weight management, exercise, and nutrition control in the treatment of diabetes^[19].

By enhancing insulin sensitivity and lowering blood glucose levels, a number of Ayurvedic medicines, including *Gymnema sylvestris*, *Momordica charantia*, and *Trigonella foenum-graecum*, have shown notable antidiabetic efficacy^[18, 19]. Integrative methods that combine Ayurveda with contemporary medicine have demonstrated improved results in diabetes management and the avoidance of complications^[29].

Ayurveda also emphasizes preventive elements like Dinacharya, Ritucharya, and Sadvritta, emphasizing the significance of leading a healthy lifestyle to stop the progression of illness^[17].

All things considered, the literature analysis indicates that Ayurveda offers a thorough and long-lasting method of managing diabetes. Long-term management and the avoidance of complications related to diabetes mellitus may benefit from the integration of Ayurvedic principles with contemporary medical procedures^[17, 19].

Conclusion

Madhumeha is a chronic metabolic disease that is becoming more common worldwide and is linked to diabetes mellitus. It

is mostly caused by sedentary lifestyles, poor eating habits, and genetic predispositions^[17-20]. It is acknowledged by both Ayurvedic and contemporary systems as a complex illness that affects multiple bodily systems and can cause major consequences if left untreated^[17, 19]. According to Ayurveda, Madhumeha is caused by derangement of Meda Dhatu and other tissues as well as Tridosha imbalance, specifically involving Kapha and Vata^[17, 20]. This leads to metabolic disorders and symptoms including tiredness, polyuria, and hyperglycemia that are comparable to those found in contemporary medicine^[19].

Ayurveda stresses a holistic management strategy that involves correcting the fundamental cause through Ahara (food), Vihara (lifestyle), herbal drugs, and purification therapies like Panchakarma, in contrast to the current approach, which is mostly focused on blood glucose control^[17, 18, 20]. Preventive concepts like Sadvritta, Dinacharya, and Ritucharya are also essential for lowering the incidence and progression of disease^[17].

By enhancing insulin sensitivity and metabolic processes, several herbal medications, including *Gymnema sylvestris*, *Momordica charantia*, and *Trigonella foenum-graecum*, have demonstrated notable antidiabetic effects^[19, 18]. Additionally, it has been discovered that integrative methods that combine Ayurveda with contemporary medicine improve therapeutic results and lower problems^[19].

Therefore, it can be said that Ayurveda provides a thorough, secure, and economical method of managing and preventing Madhumeha. Managing diabetes mellitus and enhancing general quality of life may be more successfully and sustainably achieved by combining Ayurvedic principles with modern medical procedures^[17-20].

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