



Case Study

Significant Glycemic Control in Type 2 Diabetes Mellitus Using Ayurvedic Polyherbal Formulations: A Case Report

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In according to the 2025 IDF Atlas report, 11.1% of adults worldwide (one in nine) are living with diabetes, with over 40% of cases remaining undiagnosed; India is not far behind, with 101 million people affected by diabetes and 136 million by pre-diabetes, where more than 50% of cases go undetected due to low screening rates. Among adults aged 45 and older, the prevalence of the disease is 19.8%, with the incidence rate in urban areas twice that in rural areas. It is possible to ameliorate the impact of diabetes by taking preventive measures for type 2 diabetes and providing early diagnosis and a proper therapeutic approach. These measures can help people live healthy lives without complications. In Ayurveda, which leads to a good life, health is a priority: maintaining health and, in the case of a diseased state, regaining normal health. Here, T2DM can be correlated with Madhumeha, one of the twenty types of Prameha according to Ayurveda. On April 06, 2026, a 51-year-old male patient visited the Outpatient Department (OPD) of Raghunath Ayurveda Mahavidyalaya and Hospital in Contai, West Bengal; he had been suffering from general physical weakness for the past five months and had been undergoing conventional treatment for Type-2 Diabetes Mellitus for the last fifteen years. We initiated a line of treatment of 'Madhumeha', resulting in an improvement in his overall health, alongside the alleviation of clinical symptoms and an improvement in biochemical parameters.

Keywords: Ayurveda, Diabetes Mellitus, Madhumeha, Nidana Parivarjana, Shamana Chikitsa.

INTRODUCTION

Diabetes Mellitus, nowadays, has become an attractive situation worldwide, and our country is also affected. According to the International Diabetes Federation's 'Diabetes Atlas' (2025 data), approximately 11.1% of adults worldwide aged 20 to 79 (i.e., one in every nine people) suffer from diabetes, and more than 40% of them are completely unaware of their condition. An estimated 101 million people in India are living with diabetes, while another 136 million are pre-diabetic; this crisis is further compounded by the fact that more than half of those affected remain undiagnosed due to a lack of screening. The prevalence of the disease among adults aged 45 and older has risen to 19.8 percent, with the rate of incidence in urban areas being double that of rural regions. Diabetes is a condition that occurs when

the body cannot properly produce or use insulin; consequently, insulin levels in the blood rise, and instead of being utilised as an energy source for cells, it accumulates in the bloodstream, a process that can lead to severe, long-term damage to various organs of the body. According to WHO, it is a heterogeneous metabolic disorder marked by chronic hyperglycaemia and disturbances in carbohydrate, fat, and protein metabolism. In Ayurveda, diabetes mellitus (Madhumeha) is one of the twenty Pramehas, and if untreated, other Pramehas can develop into it. Madhumeha is a Tridoshaja condition primarily involving Kapha and affects all Dhatus except Asthi. Key prodromal features include increased and unclear urination and foot pain. Ayurvedic texts emphasise that diabetes pathogenesis involves immune system

weakening (Ojas), decreased Agni, and disturbed fat metabolism. Thus, promoting Agni and Ojas, correcting Meda, and adopting a proper diet and lifestyle are essential for treatment. In formulating the treatment plan, we administered 'Shamana Chikitsa' after considering the patient's condition and the pathological interplay known as 'Dosha-Dushya-Sammurchhana'. The combination of medicines used acts on the pancreatic beta cells to regulate glycemic levels; this helps enhance insulin production or improve insulin sensitivity—measures indicated for the treatment of diabetes mellitus. The aim of this study is to determine the effectiveness of Ayurvedic formulations in order to gather evidence regarding their impact.

A 51-year-old male patient, previously diagnosed with Type-2 Diabetes Mellitus 07 years ago, was under treatment with oral hypoglycemic medication. On April 06, 2026, he visited the Outpatient Department (OPD) of Raghunath Ayurved Mahavidyalaya & Hospital in Contai, West Bengal, presenting with various symptoms of Madhumeha—such as Prabhuta Mutrata (excessive urination), Abila Mutrata (turbid urine), Karapada Daha (burning sensation in the palms and soles), and Shrama (fatigue or exhaustion), Mukha Kantha Shosha (dryness of mouth and throat) with fatigue being particularly pronounced. He is a businessman, lives in a joint family, and has a family history of Type-2 Diabetes Mellitus affecting his elder brother and mother.

Case Report

Table 1: General Examination

Built- Ectomorph	
Height- 5'7"	Temperature- 97.2 F
Weight- 56 kg	Respiration rate- 24/min
BMI- 18.7 kg/m ²	Skin and Hair- Normal
BP- 110/78mm of Hg	Tongue- Coated
PENCIL (Pallor/Edema/Nails/Cyanosis/Icterus/Lymph node)- Absent	

Table 2: Systemic examination

Abdomen	Soft, no tenderness, no organomegaly
RS	Normal vesicular breath sound
CVS	S ₁ , S ₂ audible
CNS	Conscious, oriented and afebrile

Table 3: Asthabidha Chikitsa

<i>Nadi</i>	76 bpm
<i>Mutra</i>	4-6times/dayand2-3times/night, frothy pale yellow and mild odor
<i>Mala</i>	1-2times/day, Nirama
<i>Jihwa</i>	<i>Liptam</i>
<i>Shabda</i>	<i>Ksheena</i>
<i>Sparsha</i>	<i>Anushna-Sheeta</i>
<i>Drik</i>	<i>Prakrita</i>
<i>Aakriti</i>	<i>Madhyama</i>

Table 4: Dashabidha Chikitsa

• <i>Prakriti</i>	<i>Vata-Pittaja</i>	• <i>Satva</i>	<i>Avara</i>
• <i>Vikriti</i>	<i>Vata-Kapha, Meda dhatu</i>	• <i>Pramana</i>	<i>Madhyama</i>
• <i>Sara</i>	<i>Madhyama</i>	• <i>Ahara Shakti</i>	<i>Madhyama</i>
• <i>Samhanan</i>	<i>Madhyama</i>	• <i>Vyayama Shakti</i>	<i>Avara</i>
• <i>Satmya</i>	<i>Avara</i>	• <i>Vaya</i>	<i>Madhyama</i>

Table 5: Investigation Before treatment

Investigations	Before treatment
FBS	185 mg/dL
PPBS	231 mg/dL
HbA1c	8.5%
Estimated Average Glucose (eAG)	197 mg/dl

According to Ayurvedic texts, the symptoms of Madhumeha include Prabhootha Mutrata, Avila Mutrata, a Karapada Daha, Shrama, and Mukha Kantha Shosha; similarly, in modern times, polyuria, polydipsia, and polyphagia are observed.

Diagnosis: Madhumeha (Type 2 Diabetes mellitus)

Chikitsa: In conventional system of medicine LOT is oral hypoglycaemic agent (OHA) similarly in Ayurveda also if a diabetic patient is obese, then

Samshodhana Chikitsa should be performed after proper assessment of the patient. If a diabetic patient is lean and thin, then only Shamana Chikitsa should be recommended. Here, Shaman Chikitsa is administered based on the patient's condition. The medicines used in this process act on the beta cells of the pancreas to regulate the glycemic index, thereby improving insulin production or enhancing insulin sensitivity.

MATERIALS AND METHODS

Table 6: Therapeutic Intervention —Month-wise for a period of 3 months

	Medicine	Dose	Anupana
1	<i>Nishakathakadi Kashayam</i>	10 ml twice daily before food at 6:30 am and 6:30 pm	40 ml Luke warm water
2	<i>Gurmar Curna</i> - 100 gm + <i>Bangeswar Rasa</i> - 10 gm + <i>Chandraprabha Vati</i> - 20 gm	3 gm twice daily before lunch and dinner	Luke warm water
3	Capsule Diaba Cerce DS	One capsule once daily at empty stomach	Luke warm water
All medicine continued for a period of one month (06/04/2026-05/05/2026), with proper diet and regimen.			
	Medicine	Dose	Anupana
1	<i>Nishakathakadi Kashayam</i>	10 ml twice daily before food at 6:30 am and 6:30 pm	40 ml Luke warm water
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3	Capsule Micon gold	One capsule once daily at empty stomach	Luke warm water
All medicine continued for a period of one month (06/05/2026-05/06/2026), with proper diet and regimen.			
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3	Tablet Jambrusid Gold	One tablet once daily at empty stomach	Luke warm water
All medicine continued for a period of one month (06/05/2026-05/06/2026), with proper diet and regimen.			

Follow up: 3 times

Table 7: Follow up and assessment

Sl. No.	Criteria	Before treatment (Day 0)	1 st follow up (Day 31 st)	2 nd follow up (Day 61 st)	After treatment (Day 91 st)
1.	<i>Prabhuta Mutrata</i> (polyuria)	8-10 times/day; 2-3 times/night	6-8 times/day; 1-2 times/night	4-6 times/day; 1-2 times/night	4-5 times/day; Occasionally once/night
2.	<i>Shrama</i> (weakness)	Severe	Moderate	Moderate	Absent
3.	B/L <i>Kara Pada Daha</i> (burning sensation of both palms and feet) feet>palm	Severe	Mild improvement	Moderate	Absent
4.	<i>Mukha Kantha Shosha</i> (dryness of mouth and throat)	Moderate	Moderate	Moderate	Mild

RESULTS

Combination of formulations along with diet control shows significant reduction in blood glucose levels along with complete relief from symptoms as in

Karapada Daha (numbness of both palms and feet), Mukha Kantha Shosha (dryness of mouth and throat) and marked relief from Shrama (weakness) and Prabhuta Mutrata (polyuria). (Table 8 and 9).

Table 8: Subjective Parameters

S.no.	Criteria	Before treatment	After treatment
1.	<i>Prabhuta Mutrata</i> (polyuria)	8-10 times/day; 2-3 times/night	4-5 times/day; Occasionally once/night
2.	<i>Shrama</i> (weakness)	Severe	Absent
3.	B/L <i>Kara Pada Daha</i> (burning sensation of both palms and feet) feet>palm	Severe	Absent
4.	<i>Mukha Kantha Shosha</i> (dryness of mouth and throat)	Moderate	Mild

Table 9: Objective parameters

Investigations	Before treatment	After treatment
FBS	185 mg/dL	125 mg/dL
PPBS	231 mg/dL	189 mg/dL
HbA1c	8.5%	5.9%
Estimated Average Glucose (eAG)	197 mg/dl	124 mg/dL

DISCUSSION:

Madhumeha, classified as a type of Prameha, is described by Acharya Charaka as a disease that has a lengthy duration and tends to remain persistent. India has the highest number of diabetes patients in the world, making it the diabetic capital globally. The development of new technologies has significantly

diminished physical activity, leading to important changes in our daily habits. In Prameha, Agni is disrupted by various factors that disturb the balance of Tridosha. As a result, anything ingested is converted into Ama. In Prameha, Medo Dhatvagnimandya is particularly common. Thus, the treatment should aim to restore Agni to its normal state, focusing on Kapha-Medohara properties. A combination of formulations

used here includes Nishakathakadi Kasayam, Gurmar Curna, Bangeswar Rasa, Chandraprabha Vati, Capsule Diaba Cerce, Capsule Micon Gold, and Tablet Jambrusid Gold for a period of 3 months; all help to restore the strength of Agni and are followed by improved subjective and objective parameters. Nishakathakadi Kasayam, from Sahasrayoga Kashayaprakorana's Prameha Rogadhikara, includes key ingredients like Nisha (reduces insulin resistance), Kathaka (purifies blood and supports kidney health), Paranti (balances Kapha and Vata doshas), Lodhra (stimulates insulin production), Amalaki (protects pancreatic cells and improves insulin sensitivity), Bhadraka (enhances renal function), and Mehari moola (prevents blood sugar spikes). Together, they regulate glycemic index by improving insulin production and sensitivity. Gudmar (*Gymnema sylvestre*) is an Ayurvedic herb known for its "sugar-destroying" properties, primarily due to its active compounds: triterpene saponins (gymnemic acids), the polypeptide gurmardin, and gymnamine alkaloids. Gymnemic acids block sweet taste receptors and inhibit glucose absorption, while gurmardin suppresses sweet and bitter tastes. Additionally, gymnemasaponins and gymnemosides stimulate insulin release. Bangeswar Rasa is an Ayurvedic herbo-mineral formulation containing incinerated metals, minerals, and herbal extracts, notably Rasasindura and Vanga Bhasma. These ingredients are noted in classical texts for treating Prameha (diabetes) and correspond to its pathophysiology. Rasasindura stimulates digestion and regulates Vata, enhancing the efficacy of other ingredients, while Vanga Bhasma reduces Kleda and alleviates Srotorodha, factors in Prameha. Its therapeutic actions include addressing hyperglycaemia and tissue laxity. Recent pharmacological studies and clinical trials support Bangeswar Rasa's effectiveness in managing diabetes, improving symptoms without adverse effects, particularly when used with Koshtashodhana. Chandraprabha Vati is an Ayurvedic formulation with 37 ingredients, emphasizing purified herbs, minerals, and metals. It supports urinary and reproductive health while enhancing energy. Key components include minerals and Bhasmas (Shilajit, Guggulu, Lauh Bhasma, Swarna Makshika Bhasma, Yavakshara, Sajjikshara, Shuddha Parad, Shuddha Gandhak); Herbs (Trikatu, Triphala, Gokshura,

Vacha, Kapoor, Musta, Daruharidra, Devadaru, Bhunimba, along with binders like sugar, cinnamon, and cardamom). The combination of ingredients possessing antioxidant and insulin-sensitizing properties highlights the importance of an integrated approach to diabetes management. Capsule Diaba Cerce DS, manufactured by Circe Marketing Pvt. Ltd., is a compound formulation that contains extracts of Jamun seed, Karala fruit, Gudmar leaf, Belpatra, Anwla fruit, and Neempatra, and some Rasasadhya are Shudh Shilajit, Vasant Kusmakar Rasa, Prameha Gajkesari Rasa, Vrihat Vangeshwar Ras, and Naag Bhasma; all are mentioned under Mutrarogadhikara and Prameha Rogadhikara in different classics and have anti-diabetic Karma. Capsule Micon Gold, formulated by Jamna House, contains Vasantkusumakar Rasa, Trivang Bhasma, Praval Pishti, and Shuddha Shilajit, along with extracts of Tejpatra, Jamun, Karela, Gudmar, Nimpatra, Arjun, Guduchi, and Bilvaphala. Gorakhmundi and Vijaysara are used as Bhabana Dravyas. They are all included under Prameha Rogadhikara and Mutrarogadhikara. With diabetes, this composition is beneficial. Tablet Jambrusid Gold, a tablet patented by Unjha Pharmacy, is formulated using herbs such as Saptarangi Ghan, Mamejjak Ghan, Jambubij Ghan, Gudmar, Methi, Neempatra Ghan, Bilva Patra, Shatavari, and Karela, along with the Rasasadhya preparations Vasant Kusumakar Rasa, Shuddha Shilajit, and Yashad Bhasma. All are described in Prameha Rogadhikara and Mutrarogadhikara, all are stated. Diabetes benefits from this formulation. Vasant Kusumakar Rasa is a common constituent in all three patent formulations under discussion. Characterized by a predominantly Kashaya and Madhura in Rasa, Shita Virya, and Snigdha Guna this formulation helps rectify imbalances or vitiation of Vata and Pitta doshas through its Balya and Medhya effects. Based on this study, it can be concluded that formulations containing ingredients with Rasayana and tonic properties—alongside the ability to improve mental health—are effective in countering the pathophysiology of the disease. Furthermore, this medicinal combination possesses the ability to lower blood sugar levels and enhance insulin secretion, thereby exhibiting anti-diabetic properties. Here, a combination of medications has been examined; alteration the brain function may influence blood glucose levels. The electrical stimulation of the

ventrolateral hypothalamus (VLH), which serves as a vagal center, results in a reduction of blood sugar and an elevation in plasma insulin levels. Conversely, the electrical stimulation of the ventromedial hypothalamus (VMH), identified as a sympathetic center, leads to a decrease in plasma insulin. As noted by Woods and Porte (1974), the pancreas is richly innervated by nerve fibers that enter the gland via its arteries, including parasympathetic fibers from the vagus nerve and sympathetic and visceral afferent fibers. The islets of Langerhans are abundantly supplied by these nerves. Adrenaline acts to inhibit insulin secretion while simultaneously promoting glucagon secretion. Therefore, it is evident that the autonomic nervous system significantly influences the secretion of both insulin and glucagon.

CONCLUSION

Observations indicate significant results regarding the subjective and objective parameters of 'Madhumeha' (Diabetes Mellitus). Furthermore, notable improvements were observed in negative mental states; thus, we conclude that the combined medications are effective in controlling the symptoms of Madhumeha and enhancing the mental well-being of patients suffering from Diabetes Mellitus. As symptom improvement was noted in this study, we believe that these medications improve the Quality of Life of patients by restoring the balance of 'Doshas' while simultaneously playing a supportive role in improving their mental health. The duration of this study was three months; had the duration of the illness been shorter or the treatment period longer, even better results might have been achieved.

Declaration of patient consent

The author confirms that he has secured a valid patient consent form. In this document, the patient has consented to the publication of his clinical information in the journal. The patient is aware that his name and initials will not be disclosed, and that reasonable measures will be taken to protect his identity; however, complete anonymity cannot be assured.

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