Publisher
Maharshi Charaka Ayurveda
www.maharshicharaka.in

E-ISSN:2456-3110

Journal of Ayurveda and Integrated Medical Sciences

2025 Volume 10 Number 9 September

Case Report
Diabetes Mellitus

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Ayurvedic management of Poorly Controlled Type 2 Diabetes Mellitus - A Case Report

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DOI:10.21760/jaims.10.9.59

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The type 2 diabetes mellitus (T2DM) is associated with chronic hyperglycaemia and usually necessitates lifelong medication treatment; nevertheless, drawbacks like side effects of therapeutic agents, high costs of the drugs and non-compliance may subsequently shrink the clinical effectiveness. A case report details about a 33-year-old male diagnosed with uncontrolled T2DM, and who chose to stop the standard allopathic medicine and switch to purely Ayurvedic therapeutic approach. His baseline HbA1c was 12.73%, he had polydipsia, polyphagia, nocturia, fatigue, and erectile dysfunction. Ayurvedic protocol specific to the individual was followed, which included polyherbal preparations such as Vairayadi, Bhumi Amalaki Ghana, Chandraprabhavati, Lodhrasavam, etc., with dietary suggestions to focus on the low-glycaemic-index foods in addition to lifestyle interventions such as yoga and pranayama. At the end of the 9.5 months of treatment, the patient had reduced glycaemic burden significantly, and HbA1c had decreased to 6.62 % (in absolute reduction 6.11 %, in relative reduction 47.8 %). At the same time, the fasting glucose was stabilized, nocturia and erectile dysfunction were resolved completely, no cases of hypoglycaemia or adverse effects were reported. Serum liver and renal function indicators were at normal level which proved the safety of the regime. These results endorse the plausibility of Ayurvedic herbal pharmacotherapy, dietary management, and orderly lifestyle alteration as an attentive and save standalone treatment measure in the management of the early phase, and moderately advanced T2DM. There is need to replicate and extend the preliminary observations in larger prospective studies.

Keywords: Ayurvedic treatment, Diabetes mellitus, HbA1c, Hyperglycemia, Vairayadi.

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How to Cite this Article

Abhishek R Patel, Pranav C Patel, Ayurvedic management of Poorly Controlled Type 2 Diabetes Mellitus - A Case Report. J Ayu Int Med Sci. 2025;10(9):365-371.
Available From
https://jaims.in/jaims/article/view/4788/

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Manuscript Received	Review Round 1	Review Round 2	Review Round 3	Accepted
2025-07-10	2025-07-20	2025-08-01	2025-08-15	2025-08-25

Conflict of Interest	Funding	Ethical Approval	Plagiarism X-checker	Note
None	Nil	Not required	10.58	

Introduction

Diabetes Mellitus 2 (T2DM) is a persistent metabolic situation linked to continuous hyperglycemia due to insulin resistance and/or a lack of insulin-secreting capacity.**[1]** It has already been termed one of the leading causes of morbidity and mortality worldwide, mainly due to a complication spectrum that entails nephropathy, neuropathy, retinopathy and cardiovascular disease.**[2]** According to International Diabetes Federation (IDF), it is approximated that approximately 537 million out of the 7.5 billion with a 20-79 age range are living with diabetes as of 2021 and the number is estimated to increase to 643 million by 2030 and 783 million by 2045.**[3]** In India, T2DM has reached epidemic nature driven by urbanization, diet changes, sedentary lifestyle and genetic predisposal.**[4]** In the *Ayurvedic* tradition, T2DM can be linked to *Madhumeha*, with which it has an intimate correlation, being one of the 20 *Prameha* distinct groups.**[5,6]** *Madhumeha* is mostly categorized as the *Vataja* disorder, often developing into the form of chronic *Kaphaja Prameha* that has not been properly addressed.**[7]** *Madhumeha* pathogenesis is caused by *Dosha* inharmony especially Kapha and *Vata*, as well as *Dhatu* imbalance in *Meda, Rasa* and *Mamsa*. Among etiological factors are over-nutrition (*Santarpana*), lack of physical exercise, excessive intake of *Guru, Snigdha* and *Madhura*, and *Kapha*-enhancing foods, which aggravate disease development and advancement.**[8,9]**

The current strategies include oral hypoglycemic agents, insulin therapy and lifestyle intervention as the main management approaches of diabetes. **[10,11]** Besides their effectiveness as treatment options, the above methods have long-term relevant side effects, polypharmacy, high costs of treatment, and inconsistent patient compliance.**[12,13]** Conversely, *Ayurveda* vanishes to a more comprehensive paradigm that manages the glycemic control coupled with the determinants. Some of the core interventions are Shodhana (bio-purification), *Shamana* (palliative therapy), regulation of diet (*Pathya-Apathya*), healthy lifestyle correction (*Dinacharya, Ritucharya*, and *Yoga*). **[14,15,16]**

Ayurvedic herbs formulations especially those comprising of *Salacia reticulata***[17]**, *Phyllanthus niruri***[18]**, *Gymnema sylvestre***[19]**, *Pterocarpus marsupium***[20]** and *Syzygium cumini***[21]** have been under scientific scrutiny because of their antihyperglycemic and insulin sensitizing effects. **[22,23]** Multilevel mechanism of action of these botanicals is: delaying glucose absorption in intestine, pancreatic β-cell regeneration, increasing glucose intake to periphery and reducing oxidative stress.**[24]**

The current case report presents the clinical progression of a 33-year-old male with type 2 diabetes whose management was performed only through the *Ayurvedic* approach. Therapeutic choice and amount of medicine was customized as per *Ayurvedic* tenets and included a package of polyherbal formulations, dietary adjustment and lifestyle improvement. The intervention lasted nine and a half months and signs of glycemic regulation and positive effect on overall well-being were noticed; also, no side effects of the intervention were reported, which opens the doors to the future of *Ayurveda* in the context of handling diabetes.

Case Report

In July 2023, a 33-year-old man (Mr. JP) was seen in the outpatient at Agrey Ayurved & Panchakarma Hospital, Dholka with the symptoms of inadequately controlled type 2 diabetes mellitus (T2DM). The main concerns were polydipsia, polyphagia, nocturia, erectile dysfunction, generalized weakness, and fatigue, which significantly worsened during the last 23 months. He also complained of a dry mouth lining, a lack of capacity to exercise, a lack of capacity to maintain both physical and mental activities, which were considerably detrimental to both quality of life and ability to work in general. Written informed consent was obtained from the patient for the publication of this case report, including all accompanying clinical details and laboratory findings.

As per patient, there were not any pharmacological intervention in treatment of disease of diabetes initiated before; the patient chose Ayurvedic therapy as a main course of treatment. According to the results of the laboratory tests, the results were as follows: the value of Hemoglobin A1c was 12.73% (which includes a mean plasma glucose level of 318.65 mg/dL). No known case of hypertension, coronary artery disease, or renal insufficiency was in medical history.

The patient had a positive history of T2DM, and her both parents were diabetic. The patient reported occasional alcohol consumption but denied any history of tobacco use or recreational drug use.

According to Ayurvedic assessment, the patient belonged to *Vata-Kaphaja Prakriti*; the symptoms were *Rukshata* (dryness of the skin), *Manda Agni* (slow digestive fire) and moderately nourished body frame. The tongue was somewhat coated; bowel movements were regular but he complained of some post prandial bloating and heaviness. The systemic examination did not show any abnormalities.

The mental strength (*Satva*), the becomingness (Satmya), and the capacity of physical activity (*Vyayama Shakti*) were evaluated to be in the middle (Madhyama). Body Mass Index (BMI) was normal. As per the *Ayurvedic* pathology of *Madhumeha* that falls under the pathology of *Vataja Prameha* and a chronic nature and higher glycaemic levels, a *Shamana Chikitsa* (palliative therapy) protocol was utilized. No *Shodhana Karma* was initially planned because of the recent development and the preference of the patient to an outpatient course.

A classical Ayurvedic protocol of treatment was developed that encompassed classical formulations in combination with proprietary medicines in a personalised approach. The protocol aimed to treat *Agni Deepana* (challaged digestive fire), *Kapha-Kleda Shamana* (extremes of *Kapha* and fluid retention) and *Meda Dhatvagnimandya* (deranged lipid and tissue metabolism). The key medicines included

- *Vairayadi*® (*Salacia reticulata*) - for carbohydrate metabolism regulation**[25]**
- *Bhumi Amalaki Ghana* (*Phyllanthus niruri*) - for hepatoprotection and metabolic support**[26]**
- *Chandraprabhavati* - for urinary system and metabolic modulation**[27]**
- *Lodhrasavam* - to inhibit postprandial glucose spikes via digestive enzyme inhibition**[28]**
- *Amruthotharam Kashaya* - for *Ama Pachana* and *Vata Anulomana***[29]**
- *Prameha Gajkesari, Madhumalini Vasant*, and *Hinguvachadi Gulika* - for antidiabetic, digestive, and *Rasayana* support.

According to the modern research studies, *Agnitundivati* was indicated in a cyclical pattern with the mercurial pharmacotherapy in mobilizing the digestive metabolism and improving the stagnant features of metabolism.

A diet regime that coupled diabetes-specific *Pathya Ahara* was implemented, which included low-glycaemic index foods barley, green vegetables and bitter herbs and avoided sweets, preparations rich in dairy products, fermented products and refined carbohydrates.

The change in lifestyle on the other hand included habitual walking in brisk conditions (of 45 min roughly), *Mandukasana Pose, Surya Namaskar* routine, and stress control strategies by virtue of the performance of *Kapalabhati* and *Pranayama*.

An organized assessment of clinical progression was noted once a month. The symptomatology progressively improved in a 9.5-month range. By the third month, the thirst had normalised, along with a decreased fluctuation of appetite, an increased diurnal pattern to urinary frequency, especially in the absence of nocturia, in addition to the recovery of erectile dysfunction. The patient also said that he had an increase in energy and less fatigue.

The HbA1c had dropped down to 6.62% and the estimated mean plasma glucose come down to 143 mg/dL in the follow-up assessment taken in May 2025. At the same time, the fasting-blood sugar was 127.1 mg/dL. In spite of this biochemical improvement, liver enzyme indices were within the acceptable reference range - SGPT: 15.3 IU/L; SGOT: 39.2 IU/L and renal functions markers - Creatinine: 0.86 mg/dL.

There are low TSH (1.920 µIU/mL) and vitamin B12 (256.7 pg/mL). In spite of the minimally incremented level of low-density lipoprotein (LDL) concentration (166.9 mg / dL), the further dietary therapeutic regimen and *Rasayana* treatment were deemed reasonable.

No episode of hypoglycaemia or adverse effects of drugs or de novo symptoms developed during the full course of treatment. The patient was very pleased with the holistic treatment regime, indicating its ability to provide symptomatic treatment and also provide biochemical normalisation.

Treatment plan

Table 1: Comprehensive Ayurvedic Treatment Schedule: Dosage and Duration

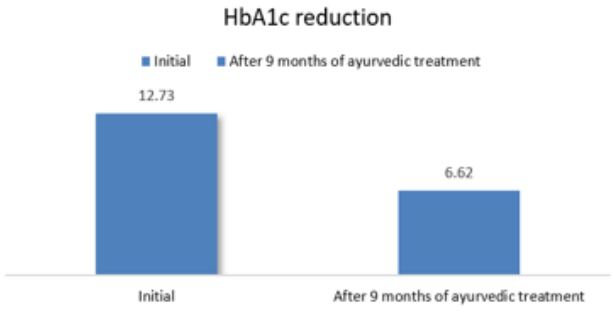
Medicine	Dosage	Duration
Vairayadi® (Salacia reticulata)	12.5 ml, BD with warm water	Continuous
Bhumi Amalaki Ghana (Phyllanthus niruri)	500 mg, TID	Continuous
Agnitundivati	250 mg, BD, cyclical dosing	One-week on, one-week off cycle, repeated continuously for 12 months.
Chandraprabhavati	250 mg, BD	Continuous
Lodhrasavam	20 ml, BD	Continuous
Amruthotharam Kashaya	12.5 ml, BD with warm water	Initial therapy
Madhumalini Vasant	250 mg, BD	Continuous
Hinguvachadi Gulika	500 mg, BD	Continuous
Prameha Gajkesari	250 mg, BD	Continuous
Balaguluchyadi Kashaya	12.5 ml, BD	Continuous
Chitrakgranthikadi Kashaya	12.5 ml, BD	Continuous
Vasantkusumakar Ras	250 mg, OD (10 tablets/month)	1 month

At the time of the admission, the patient had clear signs of poorly controlled diabetes that is mainly defined by enhanced polydipsia, polyuria, polyphagia, and overall weakness, which is interfering with his daily activities and mind status. They also produced a consistent and profound alleviation of subjective symptoms and quantifiable internal measures, with the diminution of HbA1c level being the most prominent, as it can be seen in table 2.

Table 2: Symptoms severity over time (Patient reported outcome)

Symptom	At presentation	1 month	3 months	6 months	9 months
Polydipsia	++++++	+++++	++++	Nil	Nil
Polyphagia	++++++	+++	++	+	Nil
Nocturia	++++++	+++++	+++	+	Nil
Weakness	+++++	+++++	+++	++	+
Erectile dysfunction	++++++	+++++	+++	+	Nil

The reduction of HbA1c was quantified as the main clinical outcome of the current investigation. At baseline, a HbA1c level of 12.73 % was observed, which demonstrates a significantly uncontrolled diabetes condition, As well as a mean plasma glucose level of 318.65 mg/dL an index that is above diagnostic characteristics, which indicates the severe and chronic condition of hyperglycaemia, hence increasing the likelihood of microvascular and macrovascular complications. At about 9.5 months of uninterrupted Ayurvedic treatment (including a multi-herbal pharmacological intervention combined with dietary recommendation and a holistic lifestyle change) the HbA1c had decreased to 6.62 %, a relative decrease of almost 48 % and an absolute decrease in long-term glycaemic control of 6.11 percentage points (Figure 1). The degree of this decrease is similar to or higher than that achieved in combination oral hypoglycaemic drugs administration or insulin therapies with more traditional allopathic cares. Furthermore, none of the adverse effects, hypoglycaemic incidences, or any other pharmacotherapy were reported in the course of treatment. At the same time, fasting glucose stabilised at 127.1 mg/dL, and the patient reported that he felt more energetic subjectively; however, the extent of improvement in terms of HbA1c is the most clinically convincing outcome and proves the effectiveness of the integrative Ayurvedic paradigm in overturning insulin-resistant diabetes.



Discussion

The current case study demonstrates the high efficiency of the Ayurvedic approach to a patient with highly uncontrolled Type 2 Diabetes Mellitus (T2DM). First, at the time of his initial visit, the HbA1c in the patient was more than 12% and, therefore, a high risk of both acute complications and chronic sequelae, such as nephropathy, retinopathy, neuropathy, and cardiovascular events, were possible. Traditional approaches toward management of this point of threshold normally involve administration of oral hypoglycemics in high dosages, or insulin.

In the given case, however, an integrative Ayurvedic treatment regime, the implementation of which is devoid of allopathic pharmacotherapy in any way also produced a significant decrease in HbA1c of 12.73% at initial time-point to 6.62% in 9.5 months.

Absolute 6.11% reduction of HbA1c is of significant biomedical importance considering that it implies the actual reversal of the chronic metabolic dysregulation instead of better glucose control. These effects in monotherapy are uncommon and are only achieved in intensive, multi drug regimens with concomitant safety issues. The effectiveness of the ayurvedic polyherbal regimen used is comparable to the ancient prescriptions and is substantiated by the up-and-coming pharmaco-logical data within the articles defining the antidiabetic properties of each particular herbs. Mechanisms include

- Inhibition of intestinal glucose absorption
- Beta-cell regenerative potential
- Hepatoprotective and insulin-sensitizing properties
- Enhanced peripheral glucose utilization

Lodhrasavam and *Amruthotharam Kashaya* contain digestive support which is essential in *Agni Deepana* and *Ama Pachana*, basic *Ayurvedic* treatments of chronic metabolic disease.**[29,30]** That it was able to do so simultaneously with the emphasis on dietary and lifestyle changes (consumption of low-glycemic-index foods, daily yoga practice, brisk walking, and rigorous sleep hygiene) was equally notable, since each of them contributed synergistically to pharmacologic treatment in the restoration of metabolic stasis.

The participant of the study stated that his symptoms were waning quickly and progressively, especially, in connection with thirst, frequency of urination, tiredness, and erectile dysfunction that are symptoms of *Kapha* and *Vata* vitiation. Such similar clinical outcomes have been associated with the classical Ayurvedic expectations after *Kapha-Kleda Shamana* and *Vatanulomana* interventions. The safety of the intervention and the multiplex positive effects penetrate the laboratorial parameters and the satisfaction of the patients, in even more convincing the non-provision of negative effects. This inquiry is not a random selection or a control but is a single-patient observation,

But it supports the existing body of literature reporting that *Ayurvedic* care produces long-term benefits in disease management with little negative side effects, especially in the early- to modestly-advanced stages of type 2 diabetes.

Conclusion

This case highlights the potential of Ayurvedic management in achieving significant glycemic control in a patient with poorly controlled Type 2 Diabetes Mellitus. The remarkable reduction in HbA1c, along with the resolution of classical diabetic symptoms, was achieved without the use of conventional antidiabetic drugs. These findings support the integrative role of *Ayurveda* in diabetes care and warrant further evaluation through larger clinical studies.

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