

Efficacy of Ayurvedic Management in Diabetes Mellitus Type II – A Case Study

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Diabetes mellitus is a metabolic disorder characterized by persistent hyperglycemia resulting from defects in insulin secretion, insulin action, or both. The chronic hyperglycemia of diabetes is associated with long-term damage, dysfunction, and failure of various organs, and can cause Diabetic Retinopathy, Chronic Kidney Disease, Diabetic Neuropathy, and cardiovascular disorder. Out of 20 types of Prameha, Madhumeha is one type of Vataj Prameha which greatly resembling diabetes mellitus type 2. Additionally, Madhumeha also corrupts Oja (immunity). A 56-year-old Male, known case of Diabetes Mellitus Type 2 visited Jeena Sikho Lifecare Limited Hospital, Derabassi, Punjab, India, with complaints of uncontrolled Blood Glucose level with raised HbA1c level along with Vibandh (Constipation), Bahumutrata (Polyuria), Bala Kshaya (General weakness), Ajeerna (Indigestion), and Tanava (Stress). He was on Vildagliptin 50 mg with Metformin 500 mg once daily for 6 months. The symptoms and lab parameters however did not improved significantly. He was advised indoor treatment at Jeena Sikho Lifecare Limited Hospital, Derabassi, Punjab, India for Ayurvedic management for 9 days. Treatment protocol included Nidan Parivarjan (avoiding the causative factors), Dietary and lifestyle modifications, Shodhan Chikitsa by Panchkarma (removal of toxin from the body) and Shaman Chikitsa (controlling of aggravating Doshas in the body) by Ayurvedic Medicines consisting of ingredients like Triphala (Embolica officinalis, Terminalia bellirica, Terminalia chebula), Shilajit (Black Bitumen), Ashwagandha (Withania somnifera), Guduchi (Tinospora cordifolia), Neem (Azadirachta indica), Karela (Momordica charantia) etc. The patient followed all the treatments carefully, agreed to taper down the Allopathic tablets completely stopping in four days and kept on showing significant improvements in symptoms and lab parameters. Following the inpatient treatment, the doctor and patient remained in regular contact with proper follow-ups until May 31st, 2025. During this time, the patient consistently shared his blood glucose readings and HbA1c levels, which showed continuous improvement. This case study paves path for successful implementation of Ayurvedic regimen against DMT2, however for a disease as common as DM T2 a larger sample size will be more appropriate.

Keywords: Ayurveda, Basti, Diabetes Mellitus Type 2, Glycated Hemoglobin, Shodhan Chikitsa, Shaman Chikitsa

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Introduction

Diabetes mellitus is a metabolic disorder resulting in increased blood glucose levels, forms a big health challenge worldwide. Its multifaceted nature often leads to various complications, straining healthcare systems. Conventional management of DMT2 predominantly involves pharmacotherapy, lifestyle modifications, and, in some cases, insulin therapy, aiming to control blood glucose levels and prevent complications. These approaches may not fully address the holistic needs of individuals with diabetes, highlighting the importance of exploring complementary and integrative management strategies.[1,2]

Chronic hyperglycemia in DMT2 is associated with long-term damage, dysfunction, & can cause Diabetic Retinopathy, Chronic Kidney Disease, Diabetic Neuropathy, Cardiovascular Disorders etc.[3] Long term usage of allopathic medication can sometimes cause indigestion and burden on liver and kidney. Anti-diabetes plant-based therapies are less expensive and have fewer adverse effects than allopathic treatments while having a similar mode of action. [4,5]

Madhumeha (DMT2) is *Kapha* Predominant *Tridosha* disease, impacting *Dushyas* (Tissues) as *Meda* (Adipose Tissue), *Mamsa* (muscle), *Kleda* (body fluids), *Shukra* (reproductive tissue), *Shonita* (blood), *Vasa* (muscle fat), *Majja* (bone marrow), *Lasika* (lymph), *Rasa* (plasma), and *Oja* (immunity).[6]

In the last several decades, detection of glycated hemoglobin (HbA1c) has become a standard investigation in diabetic patients. Glycated hemoglobin reflects the average blood glucose level of patients over a while, and large-scale studies have also shown that HbA1c is a test index for diabetes mellitus.[7]

Nidana[8]

Prolonged sitting, excessive sleep, consumption of curd, meat, meat soup from domesticated, aquatic, & marsh-dwelling animals, milk and milk products, freshly harvested grains, and preparations made from jaggery are considered causes of *Prameha* (diabetes) and contribute to an increase in *Kapha* (bodily humor associated with mucus & heaviness).“ *Samprapti Ghatak* mentioned in **Table 1**.

Samprapti[8] (pathogenesis)

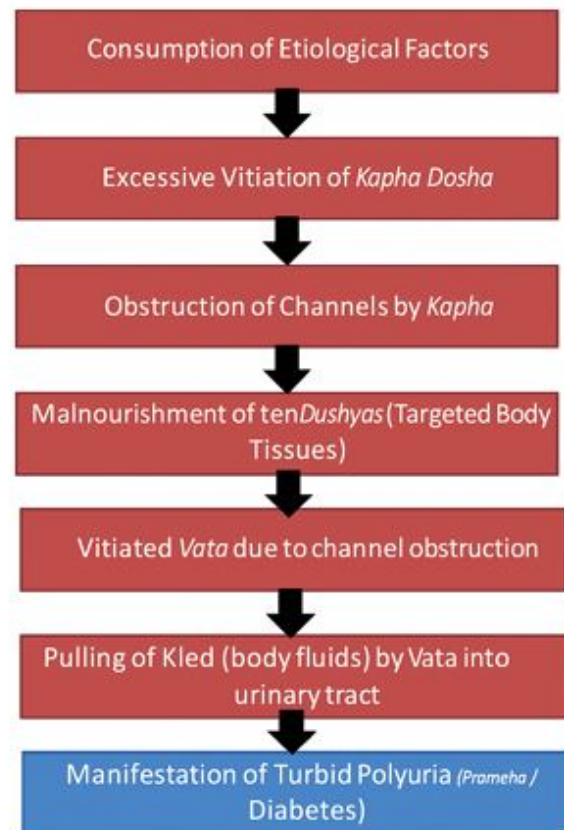


Table 1: Samprapti Ghatak

Dosha (Bodily Humors or three Energies of Body)	Kapha Predominant Tridosha
Dushya (Targeted Body Tissues)	Meda, Mamsa, Kleda, Shukra, Rakta, Vasa, Majja, Lasika, Ras, Ojas
Srotas (Body Channels)	Mutravah Srotas, Medovah Srotas (Urine, Adipose tissue channels)
Srotodushti (Affliction of Body Channels)	Sanga (Obstruction) and Atipravriti (Excessive Secretion)
Agni (Digestion and Metabolic Strength)	Jatharagni, Medodhatu Agni (digestive fire, adipose tissue metabolism)
Udbhavasthan (Site of Origin of Disease)	Amashaya (Stomach)
Adhishthan (Site of Manifestation)	Basti (Urinary Bladder)
Rogmarg (Route of Pathogenesis)	Bahya Rogmarg (Impaired Tissue Metabolism)
Swabhava (Stage of Disease Manifestation)	Chirakari(Chronic disease)
Sadhya Asadhyata (Prognosis)	Yapya (Palliable)
Dosha (Bodily Humors or three Energies of Body)	Kapha Predominant Tridosha

Case Report

A 56-year-old Male presented with a history of Diabetes Mellitus Type 2 for 6 months.

The complaints were *Vibandh* (Constipation), *Bahumutrata* (Polyuria), *Bala Kshaya* (General weakness), *Ajeerna* (Indigestion) and *Tanava* (Stress) at Jeena Sikho Lifecare Limited Hospital, Derabassi, Punjab on 14th November 2024. There was no significant Medicinal, or family history. General examination mentioned in **Table 2**. The patient was on Tablet Vildagliptin 50mg and Metformin 500 mg once a day since May 2024. This tablet was taper down and completely stopped by the third day of initiating *Ayurvedic* treatments. *Ayurvedic* Medicines which were prescribed during IPD, discharge, follow ups, along with ingredients, dose and therapeutic effects mentioned in **Table 3,4**. Tapering of Allopathic medicine mentioned in **Table 5**.

Table 2: History taking and examination on first visit on 14th November 2024

Personal history
Diet - Vegetarian
Appetite - Normal
Bowel - Constipation
Urine Output - 7 to 8 times/day
Sleep - Normal
General examination
Pulse rate - 60/min
Blood Pressure - 130/82 mm hg
Weight - 67 Kg
Height - 163 cm
Body Mass Index - 25.2 Kg/m2
Respiratory rate - 18/min
Temperature - 98°F
Ashta Sthan Pareeksha (Eight - fold Examination)
Nadi - Vataj Pittaj
Mala - Vibandh (Constipation)
Mutra - Bahumutrata (Polyuria)
Jihwa - Saam (Coated)
Shabda - Spashta (Clear)
Sparsha - Anushna Sheet (Normal)
Drik - Avikrit (Normal)
Akriti - Sthool (obese)
Systemic examination
Cardio Vascular System - S1,S2 Normal, no murmur
Central Nervous System - Conscious, Oriented
Respiratory System - Air Entry Bilaterally Normal

Investigations

- 14th November 2024 Hemoglobin 14.6 g/dl, Red Blood Cells 4.80 Mill/Cumm, Total Leucocytes Count 6600/Cumm, Platelet Count 1.20 Lacs/Cumm.
- 16th November 2024 HbA1c 3%.

Treatment Plan

A. Diet

Disciplined & Intelligent Person's Diet (DIP) [11] & *Ayurvedic* Dietary Guidelines from Jeena Sikho Lifecare Limited Hospital:

- Do not consume rice, wheat, refined foods, animal products like meat, milk, curd etc.
- Do not eat after 8 PM.
- While having solid foods, take small bites and chew each bite 32 times.
- Sip any liquid slowly.

Hydration:

- Aim to drink 1 liter of alkaline water in a day.
- Include herbal tea, living water, and turmeric-infused water into daily consumption.

Millet Consumption:

- Include five types of millets in your diet: Foxtail, Barnyard, Little, Kodo and Browntop Millet.
- Cook millets in mustard oil using stainless steel cookware.

Meal Timings and Structure:

- Early Morning (5:45 AM): Begin with herbal tea along with raw ginger and turmeric.
- Breakfast (8:30-9:30 AM): Have fruits according to season and low glycemic index (in grams, equal to patient's weight × 10) and a fermented millet shake.
- Morning Snacks (11:00-11:20 AM): 100 gm of sprouts and 150 ml of red juice and soaked almonds.
- Lunch (12:30 PM - 2:00 PM): Two plates - Plate 1: steamed salad (in grams, equal to patient's weight × 5); Plate 2: cooked millet-based dish.
- Evening Snacks: Green juice (100-150 ml) and 4-5 almonds.
- Dinner (6:15-7:30 PM): Plate 1: Raw salad, chutney, green garden delight (in grams, equal to patient's weight × 5), and soup; Plate 2: millet Khichdi/ fermented millets/ millet chapatti, etc.

Fasting:

- It was recommended to fast for one day.

Special Instructions:

- Offer thanks to divine before eating or drinking.
- Practice *Vajrasan* after every meal.
- Take a slow 10-minute walk after each meal.

Diet Types:

- The diet includes low salt solid, semi-solid and smoothie options.
- Suggested foods include herbal tea, red juice, green juice, a variety of steamed fruits, fermented millet shakes, soaked almonds & steamed salads.
- (Procedure to make Alkaline water as follow):

1. Take a Glass Jug: Fill jug with normal drinking water.

2. Add any clean Copper Vessel: Place a copper vessel in the jug.

3. Raw vegetables & fruits: Add slices of carrot, cucumber, and lemon to the water.

4. Add fresh Herbs: Include ginger slices, 8 to 10 mint leaves, and 8 to 10 coriander leaves.

5. Optional Spice: Add slice of green chili to enhance the flavor.

6. Let it Sit: Allow the mixture to sit for 12 hours.

7. Add Amla (*Emblica officinalis*) and Basil (*Ocimum tenuiflorum*): After 6 hours, add 3–4 pieces of *Amla* and a handful of *Basil*. Let it infuse for 6 hours.

8. Ready to Drink: 3 to 4 times a day in divided portions.

(Procedure to make Living water as follow):

Living water (The approach involves a three-tiered filtration system using clay pots, each serving a specific purpose to purify and energize the water:

1. Top Pot: Fill this pot with a mixture of small and large river stones, followed by charcoal made from burning wood. This layer acts as an initial filter, removing larger impurities.

2. Middle Pot: Place a similar mix of stones here. Additionally, add *Moringa* seed powder (also known as drumstick or "*Sahjan*" powder), a silver vessel, a copper vessel, and *Rudraksha* (*Elaeocarpus angustifolium*). *Moringa* seeds are known for their natural water-purifying properties, while silver and copper are believed to enhance the quality of water.

3. Bottom Pot: This pot remains unaltered and serves as collection chamber for the purified water.

- Advised to drink as per the need

B. Lifestyle Recommendations

1. Wake up early in morning.

2. Engage in physical and mental activities such as practicing Yoga (*Sukhasana* and *Sukshma Pranayama*), taking a brisk 30-minute barefoot walk, and meditation.

3. Sleep for 6-8 hours every night.

4. Neem Kerala therapy: Place both feet in a bucket containing a paste of *Neem* and *Karela*, and gently knead them by moving your feet until a bitter taste is felt on the tongue.

5. Follow these activities in routine.

C. Shaman Chikitsa (Herbo- Mineral preparations)

Table 3: Medicines on all visits with dosage, timings, and Anupaan (Vehicle)

During IPD 14th to 22nd November 2024	Discharge medicine 22nd November For 1 Month	1st Follow up medicine 31st January 2025	2nd Follow up 1st April 2025
DM Capsule 1 Capsule B.D Adhobhakta (After Meal) with Koshna Jala (Lukewarm Water)	DR Shuddhi Powder ½ tsf HS /Nishikal with Koshna Jala	Prameh Har Powder ½ tsf BD with Pragbhakta with Koshna Jala	Prameh Har Powder ½ tsf BD Pragbhakta with Koshna Jala
Prameh Har Powder 1 tsf OD Pragbhakta (Before Meal) with Koshna Jala	Tab Chitrakadi Vati 2 Tablet BD for chewing	Madhumeh Nashak Syrup 15 ml BD Adhobhakta with Sama Matra Koshna Jala	Chander Vati 1 Tablet BD Adhobhakta with Koshna Jala
DR Shuddhi Powder ½ tsf HS /Nishikal with Koshna Jala	DM Capsule 1 Capsule B.D Adhobhakta with Koshna Jala	DM Capsule 1 Capsule B.D Adhobhakta with Koshna Jala	-
Tab Chitrakadi Vati 2 Tablet BD for chewing	-	DR Shuddhi Powder ½ tsf HS /Nishikal with Koshna Jala	-

Table 4: Medicines, Ingredients and Therapeutic effects

Medicines	Ingredients	Therapeutic Effects
DM Capsule	Jambu (Syzygium cumini), Guduchi (Tinospora cordifolia), Methika (Trigonella fenugreekum), Safed Musli (ChlorophytumRakta Sharkara borivilianum), Neem (Azadirachta indica), Karvellak (Momordica charantia), Aamragandhi Haridra (Curcuma amada), Bilva patra (Aegle marmelos leaves), Gudmar (Gymnema sylvestre), Shilajit (Black Bitumen)	Niyantran (reduce blood glucose levels)
Prameh Har Powder	Kutaki (Picrorhiza kurroa), Chiraita (Swertia chirata), Neem (Azadirachta indica), Karela (Momordica charantia), Rasonth (Berberis aristata), Imli Beej (Tamarindus indica), Kala Namak, Giloy (Tinospora cordifolia), Sonth (Zingiber officinale), Babool Chaal (Vachellia nilotica), Sarpagandha (Rauvolfia serpentina), Trivang Bhasm (Stannum, Plumbum, Zincum), Yashad Bhasm (Zincum, Hydrargyrun, Sulphur) Revend Chinni (Rheum emodi), Shodhit Guggul (Commiphora mukul), Methika (Trigonella fenugreekum), Jamun (Syzygium cumini), Babool Fruit (Vanchellia nilotica), Karanja (Pongamia pinnata), Shilajit (Black bitumen), Haldi (Curcuma longa), Harad (Terminalia chebula), Inderjaun (Holarrhena antidysenterica), Vanshlochan (Bambusa arundinacea), Bahera (Terminalia bellirica), Amla (Emblica officinalis), Safed Musli (Chlorophytum borivilianum), Gudmar (Gymnema sylvestre)	Niyantran (reduce blood glucose levels)
DR Shuddhi Powder	Trikatu (Piper longum, Piper nigrum, Zingiber officinale), Triphala (Emblica officinalis, Terminalia bellirica, Terminalia chebula), Nagarmotha (Cyperus rotundus), Vay Vidang (Embelia ribes), Chhoti Elaichi (Elettaria cardamomum), Tej Patta (Cinnamomum tamala), Laung (Syzygium aromaticum), Nisothe (Operculina turpethum), Namak Sendha (Rock salt), Dhaniya (Coriandrum sativum), Pipla Mool (Piper longum root), Jeera (Cuminum cyminum), Nagkesar (Mesua ferrea), Anardana (Punica granatum), Badi Elaichi (Amomum subulatum), Hing (Ferula assafoetida/ narthax), Kachnar (Bauhinia variegata), Ajmod (Trachyspermum ammi), Sazzikhar (Alkaline salt), Pushkarmool (Inula racemosa), Mishri (Saccharum officinarum).	Deepan (stimulate hunger), Pachan (digest previous undigested food), Nitya Virechan (regular purgation)
Tab Chander Vati	Kapoor Kachri (Hedychium spicatum), Vacha (Acorus calamus), Mustak (Cyperus rotundus), Kalmegh (Andrographis paniculata), Giloy (Tinospora cordifolia), Devdaru (Cedrus deodara), Desi Haldi (Curcuma longa), Atees (Aconitum heterophyllum), Daru Haldi (Berberis aristata), Pipla Mool (Piper longum root), Chitrak (Plumbago zeylanica), Dhaniya (Coriandrum sativum), Harad (Terminalia chebula), Bahera (Terminalia bellirica), Amla (Phyllanthus emblica), Chavya (Piper chaba), Vayavidang (Embelia ribes), Pippal (Piper longum), Kalimirch (Piper nigrum), Sounth (Zingiber officinale dried ginger), Gaj Pipal (Scindapsus officinalis), Swarn Makshik Bhasm, SajjiKhar, Sendha Namak, Kala Namak (Salt), Chhoti Elaichi (Elettaria cardamomum), Dalchini (Cinnamomum verum), Tejpatra (Cinnamomum tamala), Danti (Baliospermum montanum), Nishoth (Operculina turpethum), Banslochan (Bambusa arundinacea), Loh Bhasma, Shilajit (Black Bitumen), Guggul (Commiphora wightii).	Deepan, Pachan, Mutra Sharkara Nirharana, Dhatu Poshak (Strengthen every tissue)
Madhumeh Nashak Syrup	Karela (Momordica charantia), Jamun (Syzgium Cumini), Neem (Azadirachta indica), Chiraita (Swertia chiraita), Gudmar (Gymnema sylvestre), Kutaj (Holarrhena antidysenterica), Chavya (Piper retrofractum), Chitrak (Plumbago zeylanica), Bael (Aegle marmelos), Ashwagandha (Withania somnifera), Vijaysar (Pterocarpus marsupium)	Rakta Sharkara Niyantran
Chitrakadi Vati	Chitrak (Plumbago zeylanica), Pippal (Piper longum), Sonth (Zingiber officinale dried ginger), Hing (Ferula asafoetida), Ajmod (Trachyspermum ammi), Senda Namak (Sodium Chloride), Samudra Namak (Sodium Chloride)	Deepan, Pachan, Amahar (removal of Ama Dosha)

D. Panchkarma (Detoxification)

- Abhyangam with Bala Tail & Sarwang Swedan
- Madhutailik Basti
- Shirodhara Brahmi oil
- Shiropichu Brahmi oil

A. Abhyangam with Bala Tail and Sarwang Swedan[12]

Procedure

- The patient was advised to lie in a supine position, and warm *Bala Tail* was applied. Then, the patient was asked to shift to a prone position, and warm *Bala Tail* was applied to the remaining dry areas of the skin.
- Long strokes were used during the massage for 45–60 minutes, applied in circular motions with gentle pressure.

- Special attention was paid to areas like neck, shoulders, lower back and joints. The patient was advised to sit in the steam chamber or *Swedan* box for 10-15 minutes at a maintained comfortable temperature (40-45°C/104-113°F).
- A warm bath was advised to relax muscles and remove excess oil.
- He was advised to take rest for 30 minutes.

B. Madhutailik Basti with Honey and Castor oil [13]

Procedure:

- A medicated enema with mixture of *Madhu* (honey 40 ml) & Castor oil 40 ml at 40 degree Celsius was given on empty stomach per rectum.
- The patient was positioned on his left side with knees slightly bent.

- A cotton gauze was placed at the anus to absorbed oil leakage if any.
- The patient retained the mixture as long as comfortably possible.

C. Shirodhara with *Brahmi* oil[14,15]

Procedure

- The patient laid down in a supine position with his neck slightly extended.
- *Brahmi* oil at 40 degree Celsius was poured over his forehead through a *Shirodhara* vessel as a gentle stream from a height of 5 to 6 inches.
- This procedure continued for 30 minutes every day on alternative days, with 1 liter of oil.

D. Shiropichu with *Brahmi* oil[14,16]

Procedure

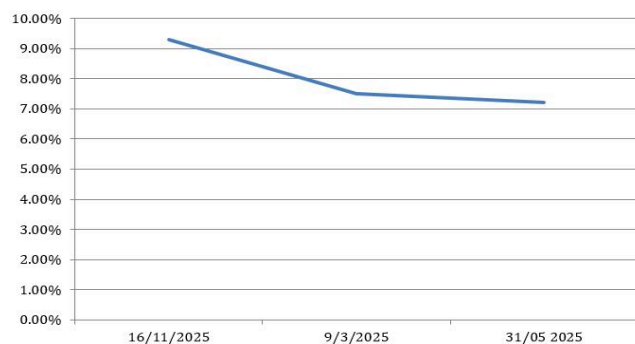
- A gentle circular massage was given to ensure the oil evenly covered the entire scalp.
- A cotton pad soaked in the *Brahmi* oil and placed on the scalp and left for 20-30 minutes to allow oil to nourish and penetrate the scalp.
- After the treatment, excess oil was wiped off with a hand towel.
- *Shirodhara* and *Shiropichu* were done on alternative days.

Table 5: Allopathic Medicine Tapering during IPD treatment

Medicine Name	15th Novem-ber	16th Novem-ber	17th Novem-ber	18th Novem-ber	19th Novem-ber	20nd Novem-ber
Vildagliptin 50 mg and Metformin 500 mg	¾ Tablet	½ Tablet	½ Tablet	On hold	On hold	On hold
	OD	OD	OD			

Results

The results are shown in Table 6,7,8,9; and Picture 2,3,4,5 and



Graph 1: Graphical Representation of HbA1c

Table 6: Lab Reports Before & After Treatment

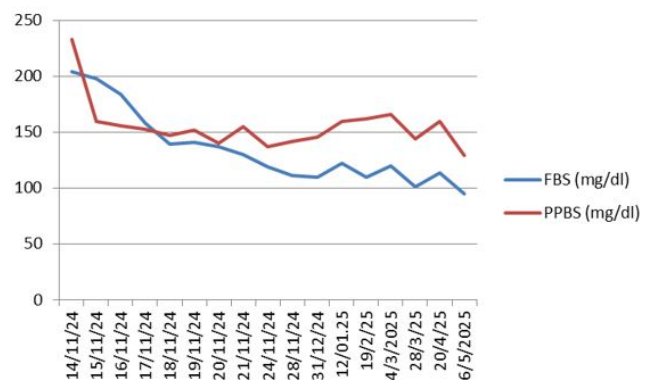
Lab Test	Before Treatment on 16th November 2024	On 9th March 2025	On 31st May 2025
HbA1c	9.3%	7.5%	7.2%

Table 7: Patient Complaints Before Treatment, After IPD Treatment, and Follow-Up

Complaints	On admission 14th November 2024	On discharge 22nd November 2024	1st April 2025
Vibandh (Constipation)	Present	Absent	Absent
Bahumutrata (Polyuria)	7 to 8 times at day / 2 to 3 times in night	4 to 5 times at day / 0 to 1 time in night	4 to 5 times at day / 0 to 1 time in night
Ajeerna (Indigestion)	Present	Absent	Absent
Bala Kshaya (General weakness)	Present	Reduced	Good energy levels
Tanava (Stress)	Present	Absent	Absent

Table 8: Blood Glucose Levels during the IPD Period

Dates	FBS (mg/dl)	Postprandial blood sugar (PPBS) 2hr after Breakfast (mg/dl)
14th November 2024	204 at home	233 at OPD
15th November 2024	198	160
16th November 2024	184	156
17th November 2024	158	153
18th November 2024	139	147
19th November 2024	141	152
20th November 2024	137	140
21st November 2024	130	155
22nd November 2024	126	-



Graph 2: Graphical Representation of FBS and PPBS

Table 9: Blood Glucose Levels monitored at home till 31st May 2025 with personal glucometer

Dated	FBS (mg/dl)	PPBS 2hr after Breakfast (mg/dl)
24th November 2024	119	137
28th November 2024	111	142
2nd December 2024	126	-
13th December 2024	-	155
21st December 2024	98	-
31st December 2024	110	146
12th January 2025	122	160
19th January 2025	-	153
26th January 2025	92	-
4th February 2025	115	-
19th February 2025	100	162
26th February 2025	129	-
1th March 2025	-	174
4th March 2025	120	166
5th March 2025	-	152
6th March 2025	108	-
19th March 2025	132	-
28th March 2025	101	144
2nd April 2025	-	123
7th April 2025	89	-
20th April 2025	114	160
29th April 2025	-	153
6th May 2025	95	129
17th May 2025	-	136
22nd May 2025	-	149
26th May 2025	112	-

Discussion

Discussion on Etiologic Classification of *Prameha*

1. Sahaja Prameha (Hereditary): This form is considered incurable. Affected individuals remain underweight, frail, and typically have reduced lifespans. Believed to stem from genetic defects (*Beeja Dosha*), no treatment yields a cure. *Acharya Charaka* also noted that *Prameha* due to *Beeja Dosha* is irreversible. This aligns closely with modern Type 1 diabetes (T1DM), which likewise had no cure until insulin was discovered in 1921

2. Apathyanimittaja Prameha (Acquired): The characteristics of this form correspond well with Type 2 diabetes (T2DM). It arises from improper diet and lifestyle, including stress. *Ayurvedic* texts describe management strategies specifically for this variety.

Discussion on *Nidana*[8] *Prameha* (Diabetes)

■ Sedentary lifestyle

- Excessive sitting
- Lack of physical activity
- Excessive sleep
- Sleeping during the day
- Oversleeping at night
- *Kapha*-increasing foods, such as:
- Freshly harvested rice
- Jaggery and jaggery-based sweets
- Excessive intake of water
- Non-Veg
- Milk and milk products

Discussion on *Samprapti* / Pathogenesis

Nidan Sevan causes bodily humors or *Doshas* (*Vata*, *Pitta*, or *Kapha*) to get imbalanced and reach the *Basti* (Urinary bladder, and pollute the urine). This vitiation leads to disorders of urination such as *Prameha* (diabetes and related conditions). The type of disorder depends on the nature of the *Dosha* involved. *Kapha Dosha* may lead to sweet, thick, and/or oily urine, producing 10 types of *Prameha* - typical of early-stage diabetes. *Pitta Dosha* may cause hot, burning sensations with yellowish urine can lead to 6 types of *Prameha* this subtype with 6 forms represents the intermediate stage between prediabetes and full-blown diabetes mellitus the symptoms in general are caused by lower immunity leading to infections. *Vata Dosha* may result in frequent, frothy, or pale urine lead to 4 types of *Prameha* - likened to frank diabetes mellitus, and complications.

Discussion on *Purvarupa* / Prodromal symptomatology

Many of the *Purvarupa* (prodromal signs and symptoms) mentioned by ancient *Ayurvedic* sages such as *Charaka*, *Sushruta*, and *Vagbhata* are today categorized by Western medicine as complications of diabetes. Features like *Chikkanata Dehe* (unctuousness of body parts), *Ghanangata* (excessive or unhealthy nourishment), *Jatilibhuteshu Kesheshu* (entanglement & matting of hair), *Keshanakhativridhi* (excessive growth of hair and nails), *Maadhuryam Aasyam* (sweetness in the mouth),

Mukha-Taalu-Kantha Shosham (dryness of mouth, palate, and throat), *Pipasa* (increased thirst), and *Mutre Cha Mutradoshanam Madhur Shukla Mutrata* (sweet, turbid, and whitish urine) appear to reflect the accumulation of Advanced Glycation End Products (AGEs) in the body. These changes affect proteins and tissues, contributing to structural and functional alterations, particularly in the skin and mucosa. Similarly, symptoms like *Kara-Padayo Suptata, Daha*, and *Suptata Cha Angeshu* (burning sensation and numbness in limbs and other parts of the body) are indicative of diabetic neuropathy, which arises due to the disruption of protein metabolism and activation of the polyol pathway, ultimately causing oxidative stress and nerve damage. It is particularly interesting to note that many signs which *Ayurveda* considered to be early indicators or prodromal are now understood in modern science as long-term complications. This highlights the depth of observational insights in *Ayurveda*, which, as a preventive and clinical health science, emphasized early detection & intervention. While modern science typically identifies these features only in the later stages of diabetes, *Ayurveda* had already documented them as part of the disease's initial manifestation, demonstrating its emphasis on early diagnosis & holistic management.

Discussion on Rupa / clinical picture

Prabhoota Mutrata (Polyuria), and *Avil Mutrata* (Turbid micturition) are the two symptoms of *Prameha* (Diabetes). This is a different perspective when compared to the modern science, as most other signs, and symptoms are enumerated under the **Purvarupa** (Prodromes), and / or *Bheda* (Complications). *Avil Mutrata* represents loss of precious *Dhatu*s from human body to urine causing most of the signs and symptoms of *Prameha*. *Avil Mutrata* can be likened to increase specific gravity of urine in the patients with T2DM.

Discussion on Aahar/ Diet

Ayurvedic diet: Disciplined & Intelligent Person's Diet (DIP) & *Ayurvedic* Diet consist of foods with low glycemic index, rich in fiber and improve metabolism. Food items which increase the risk of sugar spike are eliminated from diet such as rice, wheat, refined food, all animal products like milk, curd, all types of meat. Fiber rich and low glycemic food items advised are Millets - such as Browntop, Foxtail, Barnyard, Kodo, and Little, fresh seasonal fruits and salad.

These food items being rich in complex carbohydrates undergo a slow and prolonged digestion to ensure sustained release of energy and better glucose control. Alkaline, living water—with its high pH—helps resist inflammatory processes, supporting the body in controlling disease progression during the *Pitta* stage. *Madhumeha* (DMT2) being a *Vata*-dominant disorder, is associated with weak appetite and slow digestive metabolism. Large volumes of food are difficult for them to digest; therefore, small, and frequent meals and drinks, as per the DIP and *Ayurvedic* diet guidelines, were advised for this patient.

Discussion on Vihar/ lifestyle

Life Style Modification: Wakeup before Sun rise helps in hormonal balance and enhances metabolic function; practicing light exercise such as barefoot walk, Yoga and Meditation improves physical and mental status of patient. For proper hormone balance it is important to have 6 to 8 hours sleep at night. *Neem Karela* therapy increase metabolism and reduce blood glucose level. Positive lifestyle increases overall strength of body. Helps to utilize surplus glucose so that diabetes can be managed and no further complication occurs like CKD (chronic kidney disease), CLD (Chronic Liver Disease), CAD (Coronary Artery Disease) or other complications.

Discussion on Aushadi/ Medicine

Ayurvedic Medicines prescribed: The Prescription herbs owing to their Anti *Vata*, Anti *Kapha* Meda purifying, tissue nourishing, anti-oxidant, anti-stress, anti-constipation, & blood glucose regulating properties could ensure a promising outcome in this case study. The main evidence-based properties of medicines used are as follows - **Neem** (*Azadirachta indica*) - *Rasa* (Taste): *Tikta* (Bitter), *Kashaya* (Astringent), *Guna* (Qualities): *Laghu* (Light), *Veerya* (Potency): *Sheeta* (Cooling), *Vipaka* (Post-digestive effect): *Katu* (Pungent), *Prabhava* (Specific action): *Krimighna* (anti-parasitic), *Raktashodhaka* (blood purifier). **Karela** (Bitter Gourd) - *Momordica charantia*, *Rasa*: *Tikta* (Bitter), *Kashaya*, *Guna* *Laghu* (Light), *Ruksha* (Dry), *Tikshna* (Sharp), *Veerya*: *Ushna* (Hot), *Vipaka*: *Katu* (Pungent), *Prabhava*: *Pramehaghna* (anti-diabetic), *Deepana* (appetizer), *Krimighna* (anti-parasitic). **Ashwagandha** - *Withania somnifera*, *Rasa*: *Kashaya* (Astringent), *Tikta* (Bitter), *Madhura* (Sweet), *Guna*: *Guru* (Heavy), *Snigdha* (Unctuous/oily),

Veerya *Ushna* (Hot), *Vipaka*: *Madhura* (Sweet), *Prabhava*: *Balya* (Strength-promoting), *Rasayana* (Rejuvenative), *Vajikara* (Aphrodisiac). **Shilajit** - Black bitumen, *Rasa* (Taste): *Tikta* (Bitter), *Katu* (Pungent), *Guna* (Qualities): *Laghu* (Light), *Ruksha* (Dry), *Tikshna* (Sharp), *Veerya*: *Ushna* (Hot), *Vipaka* (Post-digestive effect): *Katu* (Pungent), *Prabhava* (Specific action): *Yogavahi* (Catalyst), *Rasayana* (Rejuvenator), *Vrishya* (Aphrodisiac), *Tridoshaghna* (Balances all three *doshas*). **Hing** - (*Ferula asafoetida*), *Rasa*- *Katu* (Pungent), *Guna*- *Laghu* (light), *Snigdha* (unctuous), *Teeksha* (penetrating), *Veerya*- *Ushna* (hot), *Vipaka* - *Katu* (Pungent), *Prabhava* (balance *Vata* & *Pitta*), **Amla** - *Rasa*: Predominantly *Amla* (Sour), *Madhura* (Sweet), *Katu* (Pungent), *Tikta* (Bitter), *Kashaya* (Astringent): *Guna* *Laghu* (Light), *Ruksha* (Dry), *Sheeta* (Cool). *Veerya*: *Sheeta* (Cooling). *Vipaka*: *Madhura* (Sweet). *Prabhava*: *Rasayana* (Rejuvenator) - promotes longevity, enhances immunity, and supports overall wellness, *Chakshushya* - improves eye health, *Tridoshaghna* - balances *Vata*, *Pitta*, and *Kapha*, & Diabetes-supportive - enhances digestion, supports pancreas function, and reduces excessive thirst and urination. **Haritaki** - *Rasa*: All five tastes except *Lavana* (Salty), *Kashaya* (Astringent) - predominant *Madhura* (Sweet), *Amla* (Sour), *Tikta* (Bitter), *Katu* (Pungent). *Guna* *Laghu* (Light), *Ruksha* (Dry), *Sara* (Flow-inducing promotes movement). *Veerya* (Potency): *Ushna* (Hot). This hot potency helps stimulate digestion and remove *Ama* (toxins), especially beneficial in *Kapha* and *Vata* disorders. *Vipaka*: *Madhura* (Sweet), *Prabhava*: *Rasayana* (Rejuvenator), *Anulomana* (Mild laxative / regulates bowel movement), *Medohara* (Reduces excess fat), *Vatanulomaka* (Pacifies *Vata*), *Shroto-shodhaka* (Cleanses body channels). **Bibhitaki** - *Rasa*: *Kashaya* (Astringent), *Tikta* (Bitter), *Madhura* (Sweet) *Guna*: *Ruksha* (Dry), *Laghu* (Light), *Veerya* (Potency): *Ushna* (Hot), *Vipaka*: *Madhura* (Sweet), *Prabhava* (Specific Action): *Kaphaghna* (*Kapha*-reducing), *Medohara* (Fat-reducing), *Netrahitkara* (Beneficial for eyes), *Shroto-Shodhaka* (Purifies the body's channels).

Prime Ingredients of Prescribed Drugs:

1. DM Cap: It mainly contains **Jambu** (*Syzygium cumini*)[17], and **Neem** (*Azadirachta indica*)[18], to control blood glucose levels, improve digestion, and being effective *Kshaya* (astregent), *Tikta* (bitter) respectively bring *Kleda* and *Mutra* down, resulting in reduced Polyuria, dense reduce polydipsia.

2. Madhumeh-Nashak Syrup: It consists herbs mainly **Neem** (*Azadirachta indica*)[18], **Haritaki** (*Terminalia chebula*)[13], **Karela** (*Momordica charantia*)[20], **Jamun** (*Syzygium cumini*).[16] Helps against diabetes mellitus, diabetic neuropathy, and retinopathy.

3. Chander Vati: It is an *Ayurvedic* formulation consists herbs mainly **Kapoor Kachri** (*Hedychium spicatum*), *Triphala*[14] (*Emblia officinalis*, *Terminalia bellerrica*, *Terminalia chebula*). This formulation has diuretic and has anti-diabetic

4. Prameh har powder: It consists herbs mainly *Triphala*[14] (*Emblia officinalis*, *Terminalia bellerrica*, *Terminalia chebula*), **Neem** (*Azadirachta indica*).[18] This is helpful in diabetes, urinary problems; strengthen immunity, diabetic neuropathy, and diabetic retinopathy.

5. Dr Shuddhi Powder: It consists herbs mainly *Triphala*[14] (*Emblia officinalis*, *Terminalia bellerrica*, *Terminalia chebula*) *Trikatu*[21] (*Piper longum*, *Piper nigrum*, *Zingiber officinale*). This is an *Ayurvedic* formulation which is rich in nutrients and antioxidants, increases energy and immunity and helps in better digestion.

Chitrakadi Vati: *Deepan*, *Pachan*, *Amahar* (removal of *Ama Dosh*) it includes *Chitrak* (*Plumbago zeylanica*) [20], *Hing* (*Ferula assafoetida*) [23]

Discussion on Panchkarma

1. Abhyangam with Bala Tail and Sarwang Swedan[12] *Abhyangam*, is a type of *Bahya Snehana* (external oleation). Warm oil is an anti-*Vata* by all physical attributes, hence acts against *Vata* predominant *Madhumeha*. The main action of *Abhyangam* is to bring all the *Vitiated Doshas* towards *Amashaya* (digestive tract). In *Ayurveda* it is mentioned that if *Dosha* comes into the digestive tract, it indicates the patient is recovering and if *Doshas* are moving out from digestive tract towards rest of the body its poor health. *Abhyangam* with minimal oil reduces *Ama* toxins in body. After *Abhyangam*, *Sarwang Swedan* helps in removing toxin through skin by sweating. It makes body feel light and more active.

2. Madhutailik Basti: *Madhutailik Basti* is established to be useful in metabolic diseases as diabetes by improving digestion, anti-inflammatory action, and enhancing insulin sensitivity by detoxifying and *Dosha*-balancing effects.[13]

3. Shirodhara with Brahmi oil[14,15] *Shirodhara* with warm *Brahmi* oil stimulates parasympathetic nervous system, promoting relaxation, reducing stress and lowering cortisol levels.[10] Stress is proven to raise glucagon release, causing hyperglycemia.

4. Shiropichu and Brahmi oil[14,16]: Like *Shirodhara*, *Shiropichu* with warm *Brahmi* oil helps in mental and physical benefits. In *Shiropichu* Central Nervous System (CNS) is impacted by systemic cellular absorption & circulation. Unlike *Shirodhara*, oil absorption in *Pichu* is better due to presence of hair follicles, The skin is known lipophilic organ, ensuring oil absorption thus controlling *Vata Vitiati*on. *Shiropichu* oil is administered, & it has an excellent compact concentration and a long contact time.

This case study highlights the potential benefits of *Ayurvedic* therapy with *Ayurvedic* Medicine, Lifestyle and *Ayurvedic* and DIP diet for managing Diabetes. *Ayurvedic* treatments offer a more accessible, cost-effective approach, addressing underlying imbalances that contribute to pancreatic dysfunction.

Need For Further Research

While the results of this case study are promising, it is essential to acknowledge the limitations inherent in single-case reports, including the lack of control groups and the potential for subjective bias in symptom reporting. Future research should aim to conduct larger, controlled studies to validate the efficacy of *Ayurvedic* interventions in Diabetes Type 2 management and to explore the mechanisms underlying their therapeutic effects.

Conclusion

Ayurveda considers *Prameha* (Diabetes), and its deteriorated *Medhume*ha (DMT2) as conditions resulting from imbalances in *Dosh*as (*Vata*, *Pitta*, *Kapha*), weak *Agni* (digestive/metabolic fire) and malfunctioning of *Basti* (urinary tract). One of the basic treatment principles in *Ayurveda* is *Nidan Parivarjan* (removal of etiology), which involves identifying and avoiding the root causes of disease (either *Aahar* or *Vihar*). By avoiding these triggers factors - such wheat, refined, dairy, coffee, tea and packaged foods, and stress—one can significantly reduce the risk of developing chronic conditions like this Diabetes and its further complications such as diabetic retinopathy, diabetic nephropathy, diabetic foot, Cardiovascular disorders erectile dysfunction.

Stress management is equally important, since Type 2 diabetes is induced by psychological stress and physical inactivity[25] and cause further defect in beta cell and cause insulin resistance.[24] *Yoga* and *Meditation* are known to reduce stress. *Ayurvedic* and DIP Diet, or wholesome diet play key roles in this rejuvenation. Lifestyle Modifications as following *Dincharaya* (daily routine) and *Ritucharya* (seasonal adaptations) help combat all non-commutable diseases including Diabetes. *Panchakarma* helps in eliminating toxins. *Ayurvedic* Medicines mostly contain plant and/ or minerals-based components which help in balancing physical and mental *Dosh*as, have rejuvenating properties and build immunity. In this case diabetes has been improved reduction in HbA1c along with that regular control of glucose levels and vanishing of complaints without any aid of allopathic medicine. This knowledge was applied to manage to significantly manage one known case of DMT2 during treatment period of nine days. *Ayurveda* offers a comprehensive, non-invasive, and natural approach to DM Type 2 by focusing on root causes rather than just symptoms.

Age / Gender : 56 years / Male		Collection Time : NOV 14, 2024, 01:09 P.M.	
Patient ID : 81552024		Receiving Time : NOV 14, 2024, 01:09 P.M.	
Source : WELLCARE PATH LAB		Reporting Time : NOV 14, 2024, 02:26 P.M.	
		Sample ID : 3782	
Test Description	Value(s)	Reference Range	
Complete Blood Count(CBC)			
Hemoglobin (HB)	14.6	13.0 - 17.0	g/dL
Total Leucocytes Count (TLC)	6600	4000 - 11000	/cmm
DIFFERENTIAL COUNT			
Neutrophils	57	40 - 75	%
Lymphocytes	35	20 - 45	%
Monocytes	05	2 - 10	%
Eosinophils	03	1 - 6	%
Basophils	00	0 - 1	%
Total RBC Count	4.80	3.50 - 6.50	Mil/Cumm
Platelet Count	1.20	1.50 - 4.50	Lacs/Cumm
PCV/HCT	42.6	35.0 - 47.0	%
Red cell distribution width (RDW)	12.2	13.0 - 18.0	%
Mean corpuscular volume (MCV)	69.1	76.0 - 96.0	f
Mean Corpuscular Hemoglobin (MCH)	30.3	27.0 - 32.0	pg
Mean Corpuscular Hemoglobin Concentration(MCHC)	34.1	30.0 - 35.0	%

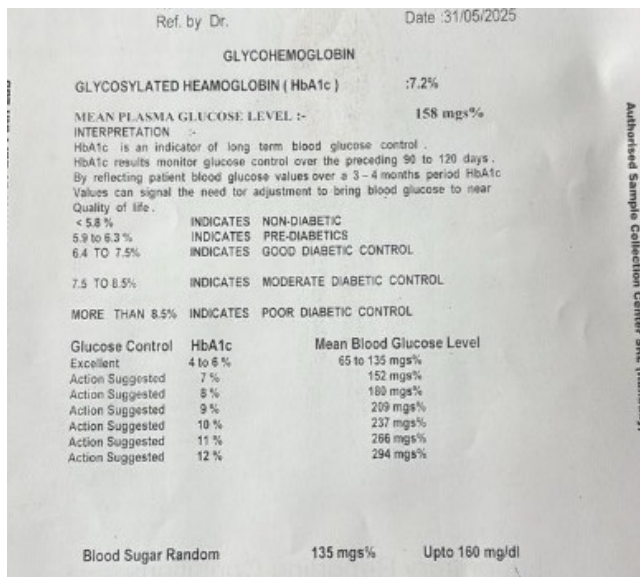
Picture 1: CBC Reports 14th November 2024

Age / Gender : 56 years / Male		Collection Time : NOV 16, 2024, 09:07 A.M.	
Patient ID : 81552024		Receiving Time : NOV 16, 2024, 09:07 A.M.	
Source : WELLCARE PATH LAB		Reporting Time : NOV 16, 2024, 05:50 P.M.	
		Sample ID : 3782	
Test Description	Value(s)	Reference Range	
Glycosylated Hb (HbA1C)			
Glycosylated Hb (HbA1C)	9.3	Non-diabetic level: 4.60 - 6.20	%
		Goal: 5.70 - 6.40	
		Good control: 6.20 - 7.20	
		Action suggested: > 7.20 %	
Estimated Average Glucose	220.21		mg/dL
Method: HPLC on Merit GluQuant A1c			

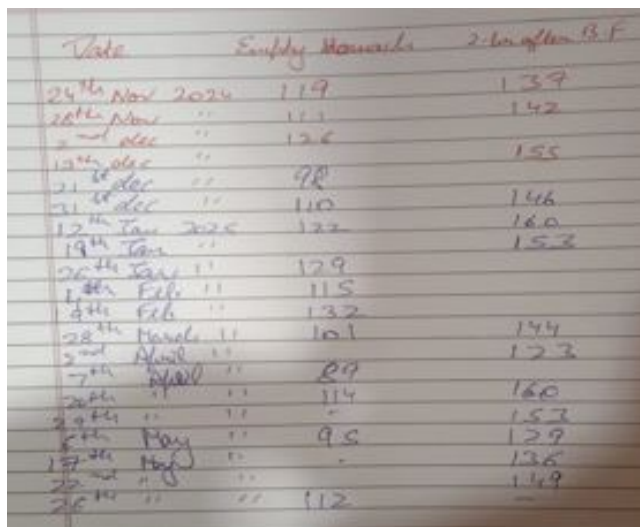
Picture 2: HbA1c Before Ayurvedic Treatment 16th November 2024

Ref. by Dr.		Age & Sex: 57/Male Date :09/03/2025	
GLYCOHEMOGLOBIN			
GLYCOSYLATED HEAMOGLOBIN (HbA1c)		:7.5%	
MEAN PLASMA GLUCOSE LEVEL :-		166 mgs%	
INTERPRETATION :-			
HbA1c is an indicator of long term blood glucose control .			
HbA1c results monitor glucose control over the preceding 90 to 120 days .			
By reflecting patient blood glucose values over a 3 - 4 months period HbA1c			
Values can signal the need for adjustment to bring blood glucose to near			
Quality of life .			

Picture 3: HbA1c Ongoing Ayurvedic Treatment 9th MARCH 2025



Picture 4: HbA1c After Ayurvedic Treatment 31st May 2025



Picture 5: Blood Glucose Levels monitored at home till 31st May 2025 with personal glucometer

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