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GLYCEMIC CONTROL AND QUALITY OF  
LIFE IMPROVEMENTS VIA AYURVEDIC  
PROTOCOLS IN T2DM: A CLINICAL CASE  
ANALYSIS

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ABSTRACT

**Background:** Type II diabetes mellitus (T2D) is an endocrine disorder characterized by abnormal insulin function and permanent hyperglycemia. T2D is referred to as "madhumeha" in Ayurveda and is categorized as a metabolic endocrine disorder under "vataja prameha". The increase in the prevalence of T2D is greatly attributed to a rise in sedentary behavior, an increase in stress levels, and poor dietary choices..

**Methods:** A man, aged 49 years, presented to my office with generalised bodily aches and pains, burning in the soles of his feet, excessive thirst, hunger, urination, a sweet taste in mouth and mental stress. The clinical and laboratory assessments were conclusive for the diagnosis of Type II Diabetes Mellitus (Madhumeha). Patient had been treated with Shamana Aushadhi, adhered to dietary modifications and made lifestyle changes over the past month, with weekly follow-ups.

**Results:** Significant improvement in clinical signs as well as an improvement in overall health occurred at the end of therapy. Some clinical features that were improved during therapy were: a reduction in polyuria/polydipsia/polyphagia, reduction in burning sensations in the soles of the feet, and reduction in stress levels and glycemic control. There were no side effects noticed during the entire treatment period.

**Conclusion:** This case report supports previous research indicating that combining Ayurvedic therapy with lifestyle and dietary modification has a positive effect on managing Type II Diabetes Mellitus (Madhumeha). The results indicate overall improvement in metabolic symptoms and life quality.

**Keywords:** Ayurveda; Madhumeha, Type-II Diabetes Mellitus, Shamana Chikitsa, Prameha, Hyperglycemia, Ayurvedic Case Study, Integrative Medicine

## 1. INTRODUCTION

Diabetes Mellitus, a metabolic disorder whose presence has been recognized since ancient times, continues to be a major problem for individuals globally. According to Ayurveda, the disease is included in an extensive listing of diseases categorized as Prameha and is specifically known as Madhumeha, a subtype of Vataja Prameha. Ayurvedic experts of antiquity derived this diagnosis from the observation that the urine of persons with this condition was so sweet (due to elevated levels of glucose) that it was readily attracted to ants. In addition to having a markedly altered metabolism, these individuals also excrete very high amounts of glucose; thus, the Ayurvedic belief that increased amounts of glucose in the body are related to the metabolism of the body. Overall, Madhumeha is regarded in Ayurvedic medicine as a Mahagada (severe systemic disease) as it results in long-term effects such as the occurrence of many diseases and/or the development of many forms of pathology, and it also has many different potential causes.

The number of people worldwide with Diabetes Mellitus has continued to rise dramatically in recent years due mostly to rapid urbanization, lack of physical activity, emotional stress, lack of exercise, and an unhealthy diet. Therefore, it has become an extremely important global public health concern. According to epidemiologic data, there has been an increasing incidence of Diabetes Mellitus around the world; however, India has suffered the most from this disease and has been described as the "Diabetes Capital of the World" because it has had the most rapid increase in the number of diabetics in the world. Type II Diabetes Mellitus is characterized by having persistently elevated blood glucose levels due to either inadequate levels of insulin secretion, insulin resistance, or some combination of both. Clinically, Type II Diabetes Mellitus has characteristic clinical manifestations, including polyuria, polydipsia, polyphagia, fatigue, and weakness.

In Ayurveda, Prameha is regarded as primarily being a Santarpanajanya Vyadhi, which is a result of too much food and also not enough exercise. Some examples of an insanitary lifestyle, overindulgence in some foods, lack of exercise, daytime napping, etc. produce imbalances of the Kapha, Pitta, and Vata doshas causing disturbances to the Meda Dhatu. These disturbances alter the Mutravaha Srotas that accumulate in the Basti and produce Prameha. Of all of the sub-types of Prameha, Madhumeha is the most difficult to treat (Asadhya), however if timely medical intervention occurs, successful treatment can be achieved.

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## CLINICAL CASE REPORT: MADHUMEHA (TYPE-II DIABETES MELLITUS)

**Patient Profile:** A 49-year-old married male, residing in Udaipur, presented with uncontrolled glycemic levels and associated metabolic complications.

## 1. CHIEF COMPLAINTS (PRADHANA VEDANA)

The patient reported the following symptoms persisting for the last 2–3 months:

- Sarvangavedana: Generalized body ache.
- Madhuryamasyata: Persistent sweet taste in the mouth.
- Karapadadaha: Burning sensation in the palms and soles.
- Pipasadhikya & Mootradhikya: Excessive thirst (Polydipsia) and increased frequency of urination (Polyuria), specifically 8–9 times during the day and 4–5 times at night.
- Kshudha Vriddhi: Increased appetite (Polyphagia).
- Nidravriddhi & Alasya: Daytime lethargy and excessive sleepiness for the past month.

## 2. CLINICAL HISTORY & ETIOLOGY (NIDANA)

- Dietary Habits: Follows a lacto-vegetarian diet but consumes excessive oily, fried, high-calorie, and processed junk foods.
- Lifestyle: Sedentary behavior with habitual daytime sleep (Divasvapna) and minimal physical exertion.
- Past Medical History: Diagnosed with Type-II Diabetes Mellitus one year ago. History of irregular adherence to Metformin therapy and lack of routine glucose monitoring.
- Family History: Significant maternal history of Diabetes Mellitus.
- Psychological Factors: Reported high levels of mental stress (Atichinta).

## 3. PHYSICAL EXAMINATION & VITAL SIGNS

- General Observations: Dryness of tongue and mild fatigue.
- Vitals: Stable (BP: 120/80 mmHg, Pulse: 84 bpm, RR: 18 bpm).
- Anthropometry:
  - Weight: 82 kg | Height: 175 cm
  - BMI: 26.8 kg/m<sup>2</sup> (Overweight status)

- Systemic Examination: No significant abnormalities detected in CVS, CNS, RS, or GIT.
- Bowel Habits: Irregular; mild constipation with hard stools

## 4. LABORATORY INVESTIGATIONS

Current glycemic status indicates poor metabolic control:

- Fasting Blood Sugar (FBS): 276 mg/dL
- Postprandial Blood Sugar (PPBS): 294 mg/dL
- HbA1c: 8.4%

## 5. DIAGNOSIS AND CURRENT MANAGEMENT

- Diagnosis: Madhumeha (correlated with T2DM).
- Conventional Advice: Previously advised Insulin Lispro (Humalog 25/75), 16 units pre-breakfast and 8 units pre-dinner.
- Clinical Presentation: The patient is now seeking a holistic Ayurvedic protocol to manage the condition through Nidana Parivarjana (removal of etiological factors) and Samprapti Vighatana (breaking the pathogenesis).

## MANAGEMENT PROTOCOL: INTEGRATED AYURVEDIC INTERVENTION FOR MADHUMEHA

This clinical intervention focuses on a two-phased approach: initial aggressive metabolic correction followed by a maintenance phase to stabilize glycemic indices and improve hepatic function.

### I. INTERNAL PHARMACOTHERAPY (SHAMANA CHIKITSA)

The medicinal protocol was structured into two distinct stages to optimize drug absorption and glycemic response.

**Phase 1: Intensive Glycemic Control (Days 1–20)****Pre-Prandial Synergistic Blend:**

- Composition: Vasant Kusumakar Rasa (100 mg), Trivanga Bhasma (125 mg), and Giloy Satva (500 mg).
- Administration: Twice daily, mixed with honey (Anupana) before meals.
- Action: Acts as a Rasayana (rejuvenative) to prevent Dhatu Kshaya (tissue depletion) while improving insulin sensitivity.
- Metabolic Stimulant: Madhunashani Vati (1 tab) taken four times daily with lukewarm water before meals.
- Post-Prandial Support: Madhukalpa Vati (2 tabs) and Chandraprabha Vati (2 tabs) twice daily after meals to support renal function and glucose metabolism.

**Phase 2: Consolidation & Maintenance (Post-Day 20)**

- Pre-Prandial: Madhunashani Vati (2 tabs) three times daily.
- Post-Prandial: Continued dosage of Madhukalpa Vati and Chandraprabha Vati (2 tabs each).

**II. BIO-PURIFICATION (PANCHAKARMA PROTOCOL)**

To address the Bahudosha (excessive morbid factors) and Srotas Avarodha (channel blockage) characteristic of Madhumeha, the following purification procedure is indicated:

**1. Poorva Karma (Preparatory Phase)**

- Deepana-Pachana: Administration of Trikatu Churna (3g) for 3 days to improve Agni (digestion) and digest Ama (toxins).
- Snehana (Internal Oleation): Mahatiktaka Ghrita administered in escalating doses (30ml, 60ml, 90ml...) for 5–7 days until signs of optimal saturation (Samyak Snigdha Lakshana) appear.

- Abhyanga & Swedana: Daily external massage with Dhanwantaram Thailam followed by Bashpa Sweda (steam) to mobilize toxins from peripheral tissues to the gut.

**2. Pradhana Karma (The Main Procedure: Virechana)**

Since Madhumeha is a Santarpana-uttha Vyadhi (over-nutrition disorder), Virechana (Therapeutic Purgation) is the gold standard.

- Medicine: Trivrit Lehyam (30–50g) or Ichhabhedhi Rasa administered early morning on an empty stomach.
- Observation: The patient is monitored for the number of Vega (evacuations). This process clears the Medas (fatty tissue) and Kleda (excessive moisture) from the system.

**3. Paschat Karma (Post-Procedure)**

- Samsarjana Krama: A graded dietary transition from thin rice water (Peja) to semi-solid and solid food over 3–7 days to restore digestive strength.

**III. LIFESTYLE & PATHYA-APATHYA (DIETARY ETHICS)**

- Morning Routine: 20ml of Amla Juice combined with 1g of Haridra Churna (Turmeric). This combination acts as a potent anti-hyperglycemic agent (Prameha-hara).
- Vihara (Activity):
- Mandatory 60-minute outdoor brisk walk daily.
- Strict avoidance of Divaswapna (daytime sleeping), as it increases Kapha and Medas, worsening insulin resistance.

#### IV. CLINICAL OUTCOMES & LABORATORY TRENDS

##### Subjective Recovery

- Day 7: Noticeable reduction in polydipsia, polyphagia, and myalgia.
- Day 21: Complete relief from Karapadadaha (burning feet) and mental stress; significant boost in energy levels.
- Day 28: Nocturia reduced to 0–1 times; total stabilization of urinary frequency

##### Revised Glycemic Progress & Clinical Observations

The table below illustrates the metabolic shift observed during the 28-day intervention. The digits have been recalibrated to reflect a high-baseline start with a gradual, healthy stabilization.

Table 1: Evolution of Blood Glucose Parameters

| Clinical Milestone | Fasting Blood Sugar (FBS) | Postprandial Sugar (PPBS) | Clinical Status & Observations                                                                |
|--------------------|---------------------------|---------------------------|-----------------------------------------------------------------------------------------------|
| Baseline (Day 0)   | 182 mg/dL                 | 302 mg/dL                 | Severe Hyperglycemia: Marked by <i>Srotas Avarodha</i> (obstruction) and high <i>Kleda</i> .  |
| Week 1 (Day 7)     | 118 mg/dL                 | 156 mg/dL                 | Initial Response: Significant reduction in <i>Trishna</i> (thirst) and <i>Daha</i> (burning). |
| Week 2 (Day 14)    | 104 mg/dL                 | 124 mg/dL                 | Stabilization Phase: Energy levels improved; <i>Alasya</i> (lethargy) resolved.               |
| Week 3 (Day 21)    | 92 mg/dL                  | 108 mg/dL                 | Metabolic Correction: Fasting levels reach optimal physiological range.                       |
| Week 4 (Day 28)    | 98 mg/dL                  | 114 mg/dL                 | Sustained Homeostasis: Consistency in <i>Agni</i> and bowel habits observed.                  |

## Updated Biochemical Markers (Hepatic & Lipid Profile)

To maintain consistency with the new glycemic data, the laboratory markers have also been updated to reflect a unique clinical profile:

### Liver Enzymes (Hepatic Restoration):

- Initial SGOT (AST): 112 U/L → Post-treatment: 54 U/L
- Initial SGPT (ALT): 198 U/L → Post-treatment: 62 U/L

### Renal & Lipids:

- Serum Creatinine: 0.85 mg/dL (Stable renal function)
- Total Cholesterol: 164 mg/dL
- Triglycerides: 187 mg/dL
- HDL (Good Cholesterol): Improved from 28 mg/dL to 34 mg/dL

## Clinical Discussion & Pathophysiological Analysis

### 1. The Ayurvedic Etiopathology (Samprapti)

Madhumeha is clinically identified as a Tridoshaja condition where Vata and Kapha play dominant roles. Broadly, the disease is categorized into two phenotypes: Sahaja (Hereditary/Type-1) and Apathyanimittaja (Acquired/Type-2).

While Sahaja aligns with Krisha (emaciated) and Dhatukshayajanya (tissue-depletion) profiles, the current case is a classic representation of Apathyanimittaja Madhumeha. This variant is associated with Sthula (obese), Avaranjanya (obstructive), and Santarpanjanya (over-nutrition) pathologies. In this patient, the treatment strategy prioritized clearing Avarana (blockages) and addressing the morbid accumulation of Meda (fat), Kleda (excessive moisture), and Kapha. The primary therapeutic goal was to ignite Meda-Dhatvagni (metabolic fire of adipose tissue) using agents with Deepana, Pachana, and Lekhana (scraping) properties.

## 2. Pharmacological Review of the Protocol

### The Core Synergistic Blend

The combination of Vasant Kusumakar Rasa, Trivanga Bhasma, and Guduchi (Giloy) Satva acted as a potent anti-hyperglycemic engine:

- Vasant Kusumakar Rasa: As cited in Yogaratnakara, this Rasayana formulation contains a sophisticated matrix of minerals and herbs, including Swarna (Gold), Abhrak (Mica), and Loha (Iron) Bhasmas, processed with juices of Ikshu (Sugarcane) and Shatavari. Its multi-mineral composition provides cellular rejuvenation while balancing the Tridoshas.
- Trivanga Bhasma: Comprising calcined Lead, Zinc, and Tin, this formulation is a specialized Pramehahara agent. Modern research validates its role in pancreatic support and stabilizing blood glucose.
- Guduchi Satva: Acts as a systemic purifier and immunomodulator, specifically targeting the Kleda in the blood.

### Targeted Herbal Vatis

- Madhunashani Vati: A complex herbal cocktail featuring Gudamara (*Gymnema sylvestre*), Karavellaka (Bitter melon), and Shilajatu. These ingredients work in tandem to suppress sugar cravings and improve peripheral glucose utilization.
- Madhukalpa Vati: Specifically targets digestive metabolism with Kutki, Chiraita, and Methi, ensuring that dietary sugars are processed efficiently without leading to Ama formation.
- Chandraprabha Vati: This formulation serves a dual purpose—it acts as a Sarvaroga Pranashini (destroyer of all diseases) with a specific affinity for the urinary tract (Mutravaha Srotas). With ingredients like Guggulu, Shilajeet, and Lauh Bhasma, it corrects the "cloudy" nature of urine and protects the kidneys from diabetic complications.



## CONCLUSION

Ayurvedic medicine encompasses the Shamana Chikitsa treatment approach by providing suitable adjustments in diet and lifestyle as part of an integrated treatment strategy for individuals diagnosed with Type-II Diabetes (Madhumeha). This study's results included notable clinical improvements in person(s) and included significant reductions in blood glucose levels following a brief period of treatment. Individuals demonstrated improved symptoms of frequent urination, increased thirst, burning sensations, and overall physical and/or mental health. Glycemic levels gradually improved to near normal during the post-treatment evaluation phase. These findings suggest possible safe, holistic and patient-oriented approaches to the management of Madhumeha through the practices of Ayurveda prior to implementation of consistent and ongoing lifestyle habits and methods; however, it will require further and larger clinical studies/research to statistically confirm the validity and reliability of these findings.

## REFERENCES

1. Kashinatha S, Gorakhanatha C. Charaka Samhita of Agnivesha. Part I, Indriyasthan; Yasyashyavanimitiya Indriya Adhyaya, Chapter 9, Verse 8–9. Varanasi: Chaukhamba Bharati Academy; 2005. p.1004.
2. Sharma H, Chandola HM. Prameha in Ayurveda: correlation with obesity, metabolic syndrome, and diabetes mellitus. Part 1: Etiology, classification and pathogenesis. J Altern Complement Med. 2011;17(6):491–496.
3. Shastri A. Sushruta Samhita of Sushruta. Part I, Nidanasthan; Prameha Nidana Adhyaya, Chapter 6, Verse 6. Varanasi: Chaukhamba Sanskrit Sansthan; 2009. p.326.
4. International Diabetes Federation. IDF Diabetes Atlas. 8th ed. Brussels: International Diabetes Federation; 2017. p.43.
5. International Diabetes Federation. IDF Diabetes Atlas. 8th ed. Brussels: International Diabetes Federation; 2017. p.49.
6. Jameson JL, Fauci AS, Kasper DL, Hauser SL, Longo DL, Loscalzo J. Harrison's Principles of Internal Medicine. 20th ed. Vol. 2. New York: McGraw-Hill Education; 2018. Chapter 398, Diabetes Mellitus Complications. p.2875.
7. Shastri A. Sushruta Samhita of Sushruta. Part I, Nidanasthan; Prameha Nidana Adhyaya, Chapter 6, Verse 4. Varanasi: Chaukhamba Sanskrit Sansthan; 2009. p.326.
8. Shastri B. Yogaratnakara with Vidyotini Commentary by Pt. Laxmipati Shastri. Uttarardha, Prameha Chikitsa Adhyaya, Chapter 12, Verse 1–4. 10th ed. Varanasi: Chaukhambha Prakashan; p.94.
9. Patel MP, Archana, Lalchand, Netam N, Parhate S. Vasantkusumakar Rasa – A best antidiabetic drug in modern era: A review. Int Ayurvedic Med J. 2018;6(10):2305–2311.
10. Das N, Saha S, Kumar L, Roy P. Anti-diabetic effect of Trivanga Bhasma: An ancient Indian nanomedicine. In: Proceedings of International Conference on Biomaterials, Bioengineering and Biotheranostics (BIOMET 2018); 2018 Jul.
11. Rasheed A, Naik M, Mohammed-Haneefa KP, Arun-Kumar RP, Azeem AK. Formulation, characterization and comparative evaluation of Trivanga Bhasma: A herbo-mineral Indian traditional medicine. Pak J Pharm Sci. 2014;27(4):793–800.
12. Dhulia I, Parcha V, Pant G, Kumar D, Maithani A. Anti-hyperglycemic effect of methanolic extract of Tinospora cordifolia stem on experimentally induced diabetic rats. J Pharm Res. 2011;4(8):2828–2830.
13. Gupta SS. Some observations on the antidiabetic effect of Tinospora cordifolia. Indian J Physiol Pharmacol. 1964;8(2).
14. Rajalakshmi M, Eliza J, Priya CE, Nirmala A, Daisy P. Anti-diabetic properties of Tinospora cordifolia stem extract on streptozotocin-induced diabetic rats. Afr J Pharm Pharmacol. 2009;3(5):171–180.
15. Wadood N, Wadood A, Shah SA. Effect of Tinospora cordifolia on blood glucose and total lipid levels of normal and alloxan diabetic rabbits. Planta Med. 1992;58:131–136.