



ISSN 2456-3110

Vol 7 · Issue 11

December 2022

Journal of
**Ayurveda and Integrated
Medical Sciences**

www.jaims.in

JAIMS

An International Journal for Researches in Ayurveda and Allied Sciences



Maharshi Charaka
Ayurveda

Indexed

A single case study on *Madhumeha* w.s.r. to Diabetes Mellitus (Type II)

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ABSTRACT

Diabetes Mellitus is a chronic metabolic disease of multifaceted etiology prevalent all over the world. However, in the recent years the prevalence of Diabetes is on rise, more upsetting in developed countries. It is a leading cause of morbidity and mortality all over the world. The global prevalence of Diabetes among adults over 18 years of age has risen from 4.7% in 1980 to 8.5% in 2014. In India cases of Diabetes Mellitus has shown surprisingly higher susceptibility which is a matter of great concern. The prevalence of Diabetes in India is currently reported to be around 13-15% and by the year 2025 it is estimated that approximately 55 million Indians will be diabetic. In modern era due to total sedentary life, having a lot of junk foods and weight gaining these are the main factors which are responsible for causing Diabetes mellitus. It can be correlated with *Madhumeha* which is one of twenty types of *Prameha* in *Ayurvedic* treatises. A 37 years old male patient presented in OPD of *Kayachikitsa* at Government Ayurvedic College and Hospital, Patiala on 22 December 2021 with complaint of burning sensation in feet, numbness around feet & hands along with generalized weakness since 1 month. Examination, investigations and history leads to *Madhumeha*. Single drug of plant origin along with *Nidana Parivarjana* is given to the patient. *Bhumyamalaki* is mentioned in *Yogratnakar* in *Prameha Chikitsa* and also *Raja Nighantu* has described it in *Parpartadi Varga*. So patient was treated with *Bhumyamalaki Churana* along with life style modification.

Key words: *Diabetes Mellitus, Madhumeha, Bhumyamalaki, Nidana Parivarjana*

INTRODUCTION

Diabetes Mellitus is a clinical syndrome characterized by hyperglycemia due to absolute or relative deficiency of insulin. As per WHO, it is a heterogeneous metabolic disorder characterized by common features of chronic

hyperglycemia with disturbances of carbohydrates, fat & protein metabolism.^[1] The term 'Diabetes' means that condition in which a large volume of urine is passed and 'Mellitus' means sweet. It is characterized by polyuria, polydipsia, polyphagia, fatigue etc. It is one of the lifestyle disorders whose prevalence is rising more rapid in almost all countries. It is a leading cause of morbidity and mortality all over the world. The global prevalence of Diabetes among adults over 18 years of age has risen from 4.7% in 1980 to 8.5% in 2014. The prevalence of Diabetes in India is currently reported to be around 13-15% and by the year 2025 it is estimated that approximately 55 million Indians will be diabetic. Diabetes is worldwide in distribution and the incidence of both types of primary Diabetes i.e., IDDM and NIDDM is rising.

Though Type 2 Diabetes (NIDDM) is heterogeneous disease, it is by far the commonest type, accounting for

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Submission Date: 08/10/2022 Accepted Date: 21/11/2022

Access this article online

Quick Response Code



Website: www.jaims.in

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almost 90% of all Diabetics. In India, studies have shown a rising prevalence of type 2 Diabetes mellitus. Prevalence of Diabetes is more in urban than in rural areas.

In *Ayurveda* Diabetes Mellitus significantly resembles with *Madhumeha* which is one of twenty types of *Prameha* as described in almost all Ayurvedic texts. All *Prameha* if not treated properly, may be converted to *Madhumeha* (DM) in due course of time.^[2] *Acharaya Sushruta* has described two types of *Prameha Roga* in *Chikitsa Sthan*: 1. *Sahaja Prameha* (Hereditary Diabetes), 2. *Apathya Nimittaja Prameha* (Acquired Diabetes).^[3] The second type i.e., *Apathya Nimittaja Prameha* resembles in signs and symptoms with Diabetes Mellitus (Type-2). Considering the seriousness of disease and its prognosis, *Ayurvedic* scholars have referred *Madhumeha* to be ‘*Mahagada*’ or ‘*Maharoga*’ i.e., a disease which has grave and serious clinical manifestation.^[4] It is a *Tridoshaja* condition with dominance of *Kapha and Dushya* involved in it are *Meda, Mamsa, Kleda, Shukra, Shonita, Vasa, Majja, Lasika, Rasa* and *Oja* which are all *Kapha Vargiya*. Except *Asthi Dhatu* All the *Dhatu* are affected by both etiopathological mechanisms of *Avarana* and *Dhatukshya*. The prodromal features of *Prameha* are excess *Mala* in tooth, palate and tongue, burning sensation of hands and feet, oiliness in the body, excess thirst, and sweet sensation in mouth. The main symptoms of the disease are of *Prabhootha Mutrata, Avila Mutrata, Karapada Daha, Bahasi, Shrama* etc.

The *Ayurvedic* classics describe a comprehensive concept of the pathogenesis of Diabetes Mellitus marked with depletion of *Agni*, disturbance in Fat (*Meda*) metabolism and lowering of immune system (*Ojas*). Promotion of *Agni* and *Ojas* and correction of *Medas* seems to be the principle trio of cure approach in this disease along with modified diet and lifestyle. In context of *Ojas*, *Acharaya Charaka* also named *Madhumeha* as *Ojomeha* in *Chikitsa Sthana*. In the present era people are having total sedentary life, having a lot of junk foods and weight gaining these is the main factors which are responsible for causing diabetes.

CASE REPORT

A 37 years old male patient presented in OPD of *Kaya Chikitsa* at Government Ayurvedic College and Hospital, Patiala on 22 December 2021 with complain of burning sensation in feet, numbness around feet & hands along with generalized weakness since 1 month. There is no history of dryness of mouth, bowel disturbances, chest pain, joint pain, unhealed ulcer etc. He was diagnosed as *Madhumeha* (Type II DM) three years back. Patient was on oral hypoglycemic drugs. Apart from this he didn’t suffer from other medical problems like HTN, PTB, Asthma, Thyroid disorder etc. Patient had his own business. He belongs to joint family and his mother was also suffering from *Madhumeha* (Type II DM).

OPD no: 11596, Dept. No: 4257

Table 1: General Examination

General Condition	Good
Height	5.6 inch
Wight	74 Kg
BMI	25
Skin	Normal
Hair	Normal
Pulse	82/min, Regular
BP	130/80 mm of Hg
Temp	98.7 F
Respiration rate	24/min
Tongue	Coated
Pallor / Icterus / Cyanosis / Clubbing / Edema / Lymphadenopathy	Absent

Table 2: Systemic Examination

CNS	Well oriented to time place and person, conscious.
CVS	S1 S2 Normal

RS	B/L symmetrical, Normal Vesicular Breathing heard, No added sounds heard.
P/A	Umbilicus centrally placed, soft, non-tenderness, no organomegaly

Table 3: Asthtavidha Pariksha

Nadi	82/min, Regular
Mutra	7-8 times a day and 1-2 times at night, Pale Yellow in colour and odourless
Mala	Once/day and with Niram Mala symptoms
Jihwa	Malavrit (Coated).
Shabda	Gambhira (Kaphaj Prakriti)
Sparsha	Anushana Sheeta, Snigdha
Drik	Prakrit (Normal)
Akriti	Madhyama

Table 4: Dashvidha Pariksha

Prakriti	Vata-Kaphaja
Vikriti	Dosha Dushya Nimitta (mainly Vata Dosha and Meda Dhatu)
Saara	Madhyama
Samhanana	Madhyama
Satmaya	Madhyama
Satva	Madhyama
Pramana	Madhyama
Ahara Shakti	Abhyaharana Shakti : Madhyama Jarana Shakti : Madhyama
Vyayama	Madhyama
Vaya	Madhyavastha

Investigations (Before Treatment)

- FBS - 156 mg/dl,

- PPBS - 200 mg/dl
- RFT and Urine routine and microscopic were in normal range.

As per Ayurveda text the symptoms of Madhumeha are Prabhootha Mutrata, Avila Mutrata, Karapada Daha, Shrama etc.

Diagnosis: Madhumeha (Type 2 Diabetes mellitus)

MATERIALS AND METHODS

Bhumyamalaki churana

Yog Ratnakar in its Prameha Prakaran chapter mentioned that even incurable Prameha (Madhumeha) can be cured with intake of Bhumyamalaki 20 gm and Maricha twenty in number are pounded together and taken. It alleviates Madhumeha within a week. So Bhumyamalaki was selected for the treatment of Madhumeha.

Preparation of Bhumyamalaki Churana

A. Collection of Raw material: The drugs Bhumyamalaki and Kali Maricha required for the preparation were collected from Herbal Health Research Consortium (HHRC), Amritsar, Punjab.

B. Authentication of the raw drugs: The Authentication of the raw drugs Bhumyamalaki and Kali Maricha were done at the Government Drug Testing Laboratory (A.S.U) Patiala, Punjab.

C. Procedure

Method of preparation: Raw drug Bhumyamalaki was cleaned and dried in sunlight for 3-4 days. Then the dried drug was passed through pulverizer and the powder was made. Then it was sieved through 44 sieve. The obtained powder was given for 30 days.

Table 5

Date	22-12-2021
Drug	Bhumyamalaki Churana
Dose	3 gm thrice a day before food
Anupana	Sukhoshna Jala

Duration	30 days
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Table 6: Pathya (Do’s) and Apathya (Don’ts)

	Pathya (Do’s)	Apathya (Dont’s)
Diet (Ahara)	<ul style="list-style-type: none"> Old cereals like Sali rice, Sastika rice, barley, Munga, Kulathi, Arhar Bitter leafy vegetables (Karela, methi, parvala etc.) Fresh fruits (jamuna, amla etc.) 	<ul style="list-style-type: none"> Vinegar, Tusodaka, Sura, Asava New grains Oil, milk, ghee, sugarcane products Preparation of rice flour, sour substances Meat of domestic, aquatic animals
Lifestyle	<ul style="list-style-type: none"> Regular exercise is recommended 4-6 times/week Pranayama Yogasana (Bhujangasana, Sarvangasana, Pawanmukta Asana) 	<ul style="list-style-type: none"> Avoid sitting idle, Day sleeping Dhumpana, Swedana Controlling natural urges like Mutravega (Vega Dharana)

RESULT

Bhumyamali Churana and diet control shows significant reduction in blood glucose levels along with complete relief from Karapada Suptata (Numbness of both palms and feet) and marked relief from Daurbalya (Weakness) and Prabhuta Mutrata (Polyuria). (Table 6 and 7)

Assessment in Present Case

Table 7: Subjective (Sign and Symptoms)

SN	Criteria	Before treatment	After treatment
1.	Prabhuta Mutrata (Polyuria)	8-10 times a day and 3-4 times at night	3-6 times a day and 1-2 times at night.

2.	Shrama (Weakness)	Present	Absent
3.	Daha/supti in Kara-Pada Tala (Burning sensation of both palms and feet)	Moderate	Absent
4.	Mukha Kantha Shosha (Dryness of mouth and throat)	Moderate	Absent

Table 8: Objective parameters

Investigation	Before treatment	After treatment
FBS	156 mg/dl	125 mg/dl
PPBS	200 mg/dl	170 mg/dl

DISCUSSION

Prameha has been described as Anushangi by Acharya Charaka which means a disease that runs for a prolonged course and remains attached forever. In Brihat Trayi Prameha is included under Ashtamahagada which shows dreadfulness of disease. Diabetes mellitus is a long-term metabolic disorder with multiple etiological factors, variable clinical manifestations, progression and number of complications. India has the distinction of having largest number of diabetics in the world. India has thus become the Diabetic capital of the world. The factor for this step rise includes genetic predisposition, urbanization insulin resistance and central obesity. Hence the disease has become matter of concern all over the world, which studies and researches in this focus. The advent of technology has greatly reduced the physical activity of our society and caused significant changes in our lifestyle as well. Although advancement of modern system of medicine i.e., oral hypoglycemic agent and insulin till date, an ideal drug which can control diabetes and is harmless also having a rejuvenating effect is necessary to manage the highly prevailing disease. Ayurveda has described that a rational treatment is one where the medicine modifies the disease; on the other hand it doesn’t provoke new complaints. In Prameha Agni is also disrupted due to

various factors which disturb the balance of *Tridosha*. Therefore, anything which is ingested is converted in *Ama*. So, the process of *Dhatuposhana* and *Dhatu-Utpatti* is hampered. This *Agnimandhya* lead to *Dhatvagnimandya* of each *Dhatu*. In *Prameha*, especially *Medodhatvagnimandya* is seen. Therefore, the treatment should be in path of restoration of *Agni* in its normal state and having *kapha-Medohara* property. It should also include *Rasayana* and *Balya* effect as all *Dhatus* are involved and *Ojakshaya* is seen in this disease.

Bhumyamalaki (*Phyllanthus niruri* Linn.) consists of many active constituents like phyllanthin, hypophyllanthin in leaves, estradiol in bark, root and ellagic acid, gallic acid as a whole plant. The drug has shown significant anti-diabetic activity, anti-inflammatory, hepatoprotective activity and stomachic activity. *Yog Ratnakar* has also mentioned in *Prameha Prakarana* that even incurable *Prameha* (Madhumeha) can be cured with intake of *Bhumyamalaki* with of Black pepper. *Bhumyamalaki* has *Tikta, Kashaya & Madhura Rasa; Laghu, Ruksha Guna; Madhura Vipaka* and *Kapha-Pittahara Dosha Karma. Tikta Rasa* is *Kleda Upashoshaka*. Also, it may be due to improved blood sugar level brought about by the anti-diabetic action of the drug which reduces osmotic diuresis. *Tikta & Kashaya Rasa* of *Bhumyamalaki* are *Mutra Sangrahaniya*. *Bhumyamalaki* consists of *Madhura Vipaka* and *Sheeta Veerya*. Also, *Madhura Vipaka* is *Dhatuvaradhaka* which leads to proper formation of *Rasa Dhatu* and thus by working on *Rasa Dhatu* it will also work & nourish the rest of *Agrima Dhatus* and thus providing energy to cells. Hence it acts as *Balya* and *Rasayana* by promoting all *Dhatu*. *Tikta Rasa* is *Akash & Vayu* dominant which leads to *Srotoshodhana* by which insulin resistance is also corrected. This leads to better utilization of glucose. Due to *Madhura & Tikta Rasa, Sheeta Virya* and *Madura Vipaka* of *Bhumyamalaki* pacifies *Pitta* leading to reduction in *Daha* in *Kara-Pada Tala*. *Tikta Rasa* also helps in eliminating excessive *Mukh Madhurta* which is due to aggravated *Kapha*; which leads to *Shoshana* of *Kapha (Mala)* and also causing *Srotomukh Shodhana* by which it cleanses mouth that increases mucus secretion of

both mouth and throat; hence overcoming dryness of mouth and hence acting on *Mula* of *Udakavaha Srotas* i.e., *Talu* and *Kloma*. *Tikta rasa* possess *Trishna-Nigrahana (Mala Rupa Kapha)* property which reduces thirst.

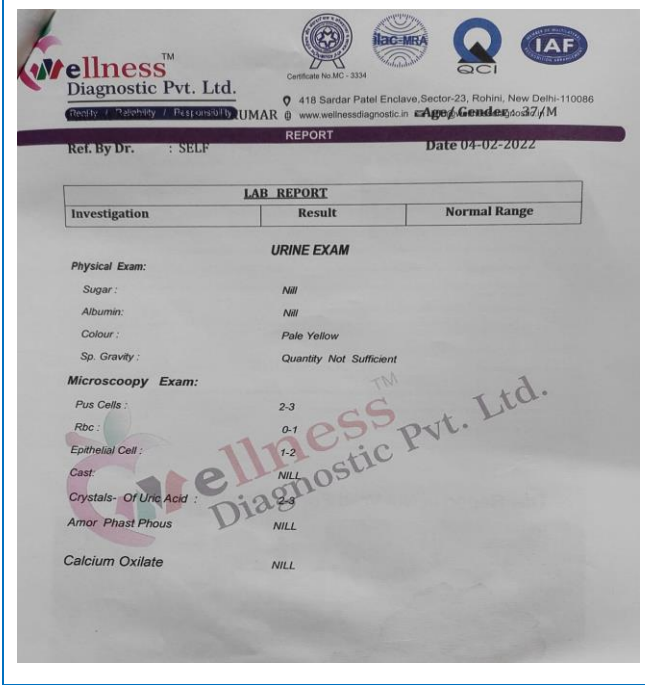
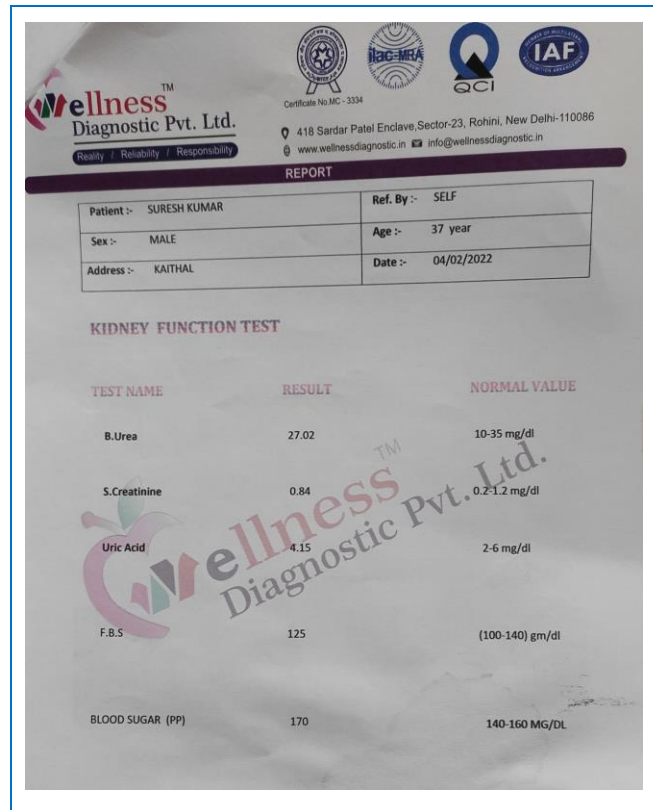
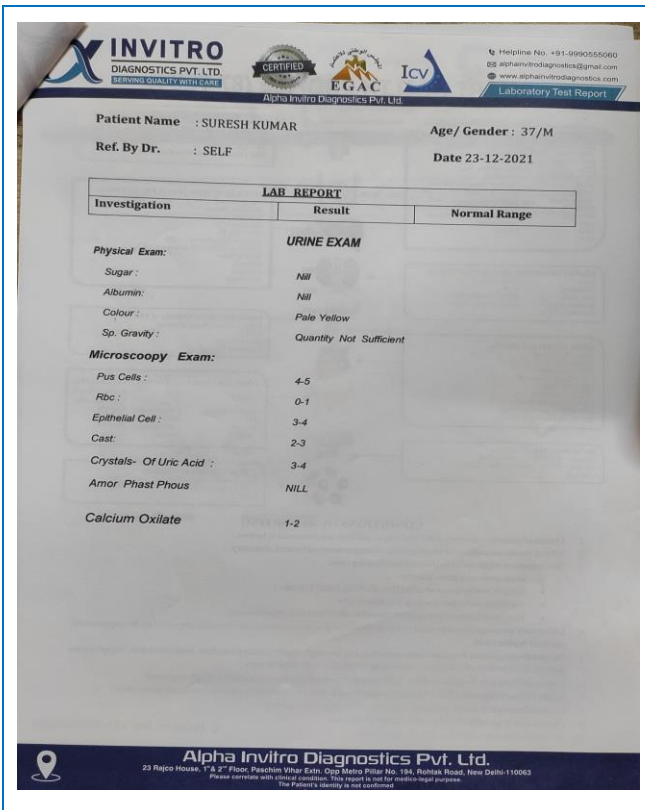
CONCLUSION

In this case study we got good result of *Bhumyamali Churana* along with diet control in the treatment of *Madhumeha* in both subjective and objective parameter. It also advocates a specialized pattern of dietary restrictions required for the management of *Prameha* where *Madhura* and *Lavana Rasa* are to be reduced while *Tikta* and *Kashaya Rasa* are advocated to be advocated. Thus, *Ayurveda* set forth a unique principle of curative management of this disease.

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TEST NAME	RESULT	NORMAL VALUE
B.Urea	32.06	10-35 mg/dl
S.Creatinine	0.95	0.2-1.2 mg/dl
Uric Acid	5.25	2-6 mg/dl
F.B.S	156	100-140 mg/dl
BLOOD SUGAR (PP)	200	140-160 MG/DL



How to cite this article: Monika Sharma, Pankaj Sharma. A single case study on Madhumeha w.s.r. to Diabetes Mellitus (Type II). J Ayurveda Integr Med Sci 2022;11:195-200.

Source of Support: Nil, **Conflict of Interest:** None declared.

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