



Case Study

A CASE STUDY ON THE MANAGEMENT OF TYPE 2 DIABETES MELLITUS (*MADHUMEHA*) BY AYURVEDIC INTERVENTION

Jeuti Rani Das^{1*}, P.L. Bharati², Girindra Kumar Bora³, Dinesh Baruah⁴

¹Research Officer (Ayu), ²Research Officer (S-3), ³Research Officer (Bio-Chemistry), ⁴Assistant Director In-charge, Central Ayurveda Research Institute, Borsojai, Beltola, Guwahati, Assam, India.

Article info

Article History:

Received: 22-02-2022

Revised: 01-03-2022

Accepted: 12-03-2022

KEYWORDS:

Diabetes Mellitus, *Madhumeha*, *Chandraprabha vati*, *Shiljitadi lauha*, *Haridra powder* and *Amlaki Churna*.

ABSTRACT

Diabetes Mellitus is a metabolic disorder associated with multisystem complications. The prevalence and incidences of the both types of diabetes are significantly increased over the past two decades. The recently published ICMR-INDIAB national study reported that there are 62.4 million people with type 2 diabetes mellitus and 77 million people with pre-diabetes in India. These numbers are projected to increase to 101 million by the year 2030 due to changed of lifestyle of the people all over the world. Habits of sedentary life, having a lot of fast foods and improper follow of diet habits are the main causes to develop diabetes mellitus. It can be correlated with *Madhumeha* in Ayurveda. A 45 years old female patient treated in the OPD of Central Ayurveda Research Institute, Guwahati from 23rd September 2020 with a complain of generalised weakness, weight loss, increase amount of urination and attraction of ant towards the excreted urine for 9 months. Examination, laboratory investigations and history leads to diabetes mellitus. Different Ayurvedic herbomineral drugs which were mentioned in different texts were given to the patient. It shows the effective results in the management of *Madhumeha* (Diabetes mellitus).

INTRODUCTION

Diabetes mellitus is a metabolic disorders where metabolism of carbohydrate remain underused which leads hyperglycemia.^[1] The most common symptoms are polyuria, polydipsia, polyphagia. It is also considered as lifestyle disorders and its prevalence is rising very rapidly in developing countries. Its leads complication like nephropathy, neuropathy or retinopathy. Though there are mainly two types of diabetes- Type 1 and Type 2 but prevalence rate of type 2 diabetes is more.^[2] Type 1 diabetes is mainly autoimmune-mediated where absolute insulin deficiency present and its frequency less than type 2 diabetes. Type 2 diabetes is either due to insulin resistance and/or abnormal insulin secretion.^[3]

Mainly Type 2 DM occurs from interaction between environmental, genetic and behavioral risk factors.^[4,5] A recent study has reported that diabetes was the 5th leading cause of death and responsible for about four million deaths in 2010.^[6] In the last several decades, detection of glycated hemoglobin (HbA1c) has become a standard investigation in diabetic patient. Glycated hemoglobin reflects the average blood sugar level of patients over a period of time, and large-scale studies have also shown that HbA1c is a test index for diabetes mellitus.^[7] In contemporary systems of medicine have developed medicines to control and treat diabetes but complete cure rate is low. The recently published ICMR-INDIAB national study reported that there are 62.4 million people with type 2 diabetes and 77 million people with pre-diabetes in India and the numbers are projected to increase to 101 million by the year 2030.^[8] In Ayurvedic texts there are many hypoglycaemic herbomineral formulations are mentioned that may be relatively effective and safe. Besides drugs, Ayurveda also prefers *Pathya-Apathya* (compatible and incompatible diet and lifestyle), in the management of diseases. Based on similarities in signs and symptoms

Access this article online

Quick Response Code



<https://doi.org/10.47070/ayushdhara.v9i1.904>

Published by Mahadev Publications (Regd.)
publication licensed under a Creative
Commons Attribution-NonCommercial-
ShareAlike 4.0 International (CC BY-NC-SA 4.0)

type 2 DM can be compared with *Madhumeha* in Ayurveda. In Ayurvedic texts *Madhumeha* is classified under the *Vatika* type of *Prameha*. *Prameha* is characterized with passage of excess and turbid urine.^[9] It is a *Tridoshaja roga* with predominance of *Kapha dosha* and *Dushya* involved here *Meda, Mamsa, Kleda, Shukra, Rakta, Vasa, Majja, Lasika, Rasa* and *Oja*.^[10] *Prabutamutra* (excessive urination), *Avila mutra* (appearance of haziness in urine), *Kasaya, Madhura, Rukshamutra* (astringent sweet and dry urination), *Sharir gouarava* (heaviness in the body), *Vibandha* (constipation), *Mukha Madhurya* (sweet taste in the mouth).

Case Report: A 45 years old female patient was treated in the OPD of Central Ayurveda Research Institute from 23rd September 2020 with a complain of

generalised weakness, weight loss, increase quantity of urination but not frequency, slight change in colour of urine along with froth in urine and foul smell and there was attraction of ant towards the excreted urine since 9 months. There was history of dryness of mouth, palate and throat. She was diagnosed as type 2 DM four months back and did not take any medicine and after that she had come to the OPD of Central Ayurveda Research Institute, Guwahati on 21st September 2020 to take Ayurvedic treatment. She was advised to do lab investigations. Then she had done the investigations on 22nd September. Apart from this she didn't suffer from other medical problems like HTN, asthma, thyroid disorder etc. Patient was housewife by occupation. There was family history. Her OPD no was-1523.

Table 1

General Examination	
Height	154cm
Weight	54kg
BP	130/80mm of Hg
Pulse	78/min
Temperature	98.6
General condition	Not good
Pallor/Icterus/Cyanosis/Clubbing/Edema /Lymphadenopathy	Absent
Srotas Examination	
<i>Mutravahasrotadushti lakshan</i>	Excess urination with froth and foul smell
<i>Medovhasrotadushti lakshan</i>	Lack of enthusiasm, weakness, foul body odour, excess sweating
<i>Udakvahasrotadusti lakshan</i>	Dryness of tongue, palate and throat
<i>Swedavahasrotadushti lakshan</i>	Excess sweating with bad odour
Asthtavidha Pariksha	
<i>Nadi</i>	78/min
<i>Mutra</i>	Hazy, frothy, increased amount
<i>Mala</i>	Normal
<i>Jihva</i>	Uncoated
<i>Shabda</i>	Normal
<i>Sparsha</i>	Normal
<i>Drik</i>	Normal
<i>Akriti</i>	Average
Dashvidha Pariksha	
<i>Prakriti</i>	<i>Kaphaja pittaja</i>
<i>Vikriti</i>	<i>Vata kapha and Medodhatu dushti</i>
<i>Sara</i>	<i>Medosara</i>
<i>Samhanana</i>	<i>Madhyam</i>
<i>Satmya</i>	<i>Madhyam</i>
<i>Satva</i>	<i>Pravar</i>
<i>Pramana</i>	<i>Madhyam</i>

<i>Ahara shakti</i>	<i>Madhym</i>
<i>Vyama shakti</i>	<i>Madhyam</i>
<i>Vaya</i>	<i>Madhyavastha</i>

Investigations (before treatment) FBS -84mg/dl, PPBS -214.1mg/dl, HbA1C-8 and other routine investigation lipid profile and urine routine and microscopic were in normal range. As per Ayurveda text the symptoms of *Madhumeha* are *Prabhootha Mutrata*, *Avila Mutrata*, *Daurbalya*, *Kshudaati Pravrti*, attraction of ant towards excreted urine etc. Diagnosis: *Madhumeha* (Type 2 Diabetes mellitus).

MATERIAL AND METHOD

Treatment Plan 1

Table 2: Oral Drugs

Date	Medicine	Dose	Duration
23.9.2020 upto 24.4.21	<i>Chandraprabha Vati</i> <i>Shilajitadi Lauha</i> <i>Amlaki Churna</i>	1 gm BD 250 mg BD 3 gm BD	30 days
21.06.21 upto 25.01.22	<i>Chandraprabha Vati</i> <i>Amlaki Churna</i> <i>Haridra Churna</i>	1 gm BD 3 mg BD 3 gm BD	30 days

▶ *Advise for Diet and lifestyle Modification

Do's (*Pathya*)

- ▶ **Cereals:** Adequate barley, millet, wild millet, wheat in less quantity, old rice in less quantity (more than one year old).
- ▶ **Pulses:** Bengal gram, green gram and horse gram, pigeon pea (less quantity).
- ▶ **Vegetables:** Patola, drumstick, leafy vegetables like fenugreek leaves, vegetables with bitter taste predominance like bitter guard and bottle guard, cauliflower, cabbage (in less quantity).
- ▶ **Fats:** Mustard oil, flax seed oil, meat of goat, rabbit (in less quantity).
- ▶ **Kitchen Spices:** Turmeric, piper, zinger, garlic, fenugreek seeds, rock salt.
- ▶ **Fruits:** Indian gooseberry, blackberry, and Indian bael, elephants nut, guava (in moderate quantity) and sweet lemon, unripe papaya, apple (in less quantity).
- ▶ **Drinks:** *Takra* (buttermilk), *Maduudaka* (honey + water).
- ▶ **Others food articles:** *Dhani* (pop corn of jowar), *Laja/Murmura* (puffed rice).

Don'ts (*Apathya*)

- ▶ **Cereals:** Newly harvested rice, processed wheat flour, newly harvested cereals.
- ▶ **Pulses:** Black gram, kidney beans.
- ▶ **Vegetables:** Starchy vegetables: potato, yam.
- ▶ **Fruits:** Ripen sweat fruits like mango, orange, chiku, grapes, banana, litchi, ripe papaya, pear, pineapple, jack fruit.
- ▶ **Drinks:** Sugarcane juice, whole milk, sweet buttermilk, curd, excessive water, cold and freeze water, soft cold drinks, alcohol.

RESULT

Oral medicine and diet control shows significant reduction in blood glucose levels (FBS, PPBS and HbA1C) along with complete relief from *Daurbalya* (weakness), *Avila* (hazyness) and *Prabhuta Mutrata* (polyuria). (Table 6 and 7). After completion of treatment RFT and LFT had also done and no abnormality was found.

Assessment in Present Case

Table 3: Subjective (Sign and Symptoms)

	Before treatment on 21.09.20	On 25.10.20	On 23.11.20	On 24.12.20	On 26.02.21
<i>Daurbalya</i> (weakness)	Present	Present	Present	Absent	Absent
<i>Avila</i> (hazyness)	Present	Present	Present	Slight present	Absent
<i>Prabhuta Mutrata</i> (polyuria)	3-4 litre/day	3 litre/day	3 litre/day	3 litre/day	2.5 litre/day

<i>Pippilika darshan</i> (attraction of ant towards excreted urine)	Present	Present	Present	present	Absent
---	---------	---------	---------	---------	--------

Subjective (Sign and Symptoms)

	on 24.04.21	On 21.06.21	On 23.08.21	On 21.10.21	On 05.12.21	On 23.01.22
<i>Daurbalya</i> (weakness)	Absent	Absent	Absent	Absent	Absent	Absent
<i>Avila</i> (hazyness)	Absent	Absent	Absent	Absent	Absent	Absent
<i>Prabhuta Mutrata</i> (polyuria)	2.5 litre/day	2 litre/day	2 litre/day	1.8 litre/day	1.8 litre/day	1.8 litre/day
<i>Pippilika darshan</i> (attraction of ant towards excreted urine)	Absent	Absent	Absent	Absent	Absent	Absent

Table 4: Objective Parameters

	Before treatment on 22.09.20	on 27.02.21	On 22.06.21	22.10.21	On 25.01.22	On 0.2.02.22
FBS	84 mg/dl	87		101		101
PPBS	214 mg/dl	131		99		127
RBS			132			
HbA1C	8	7.2	7	6.9	6.4	
Lipid profile	WNL	-	-	-	WNL	
Urine routine and microscopic	Physical examination- Sugar=trace Microscopic examination- NAD	-	-	-		NAD
RFT						Blood Urea-24.3 Serum creatinine-0.9
LFT						Total protein-7.3 Albumin-4.1 Globulin-3.2 SGOT-36 SGPT-45 Total bilirubin-0.5 Direct bilirubin-0.2 Indirect bilirubin-0.3 Alkaline phosphate-68

DISCUSSION

Diabetes Mellitus is considering as a metabolic disorder in this era. It also comes under lifestyle disorder. Habit of taking incompatible diet, fast foods and sedentary lifestyle and lack of exercise leads obesity and then this leads metabolic disorder like diabetes mellitus. Diabetes mellitus needs to be treated as early as possible to get rid from the onset of complication as neuropathy, retinopathy or nephropathy. *Madhumeha* is a *Tridoshasaja Vyadhi*. Basic pathology behind it is *Avritta Vata* and *Bahudrava Shlesma*. *Madhumeha* comes under *Vataja Prameha*. In Ayurvedic texts there is indication of *Chandraprabha vati*, *Shiljitadi lauha*, *Haridra* powder

and *Amlaki Churna* for the management of *Prameha*. *Chandraprabha vati*, exhibited both glucose and lipid lowering activities in experimental studies. *Chandraprabha vati* has got remarkable effect in mitigation of *Prameha* which correlates in many ways with diabetes mellitus.^[11] *Shiljitadi lauha* significantly lowered the blood glucose without any hypoglycemic effect on their control counterparts, which was comparable to that of the standard antidiabetic drug, glibenclamide, it seems to scientifically validate its traditional uses and might be a promising drug in the therapy of diabetes mellitus.^[12] *Haridra* is mentioned as *Pramehanashak* in *Caraka Samhita*, its *Rasa* is *Tikta*,

Virya is *Ushna* and *Vipak* is *Katu*. And according to *Vagbhatta Haridra* is *Tridosha samak*. *Haridra* powder is very effective with *Amlaki* and is known to contain terpenoids, cucuminoids, glycosides, and flavinoids. Maximal inhibition of the enzyme human pancreatic Amylase (HPA) was obtained with curcuma longa isopropanol extract and it causes reduction in starch hydrolysis which lowered glucose levels.^[13] In classical text *Amlaki* is said as *Pramehghna*. *Amlaki* is rich in quercetin, phyllaembelic compounds, gallic acid, tannins, flavonoids, pectin and vitamin C and also contains various polyphenolic compounds. Recent pharmacological studies reveals that its fruits act as an antioxidant, antidiabetic, anti-inflammatory etc^[14]. *Madhumeha* is a *Dhatvagnimandhyajanita vyadhi*. Almost all the drugs having *Deepana* and *Pachana Gunas*, *Katu* and *Tikta rasa* and *Usna Vriya* mitigates *Dhatvagnimandya* and increase the *Dhatvagni* and helps to form the *Dhatu* in proper proportion with proper qualities and it enhances all *Dhatuposhana* and pacifies weakness.

CONCLUSION

In this case study it shows that *Chandraprabha vati*, *Shilajitadi Lauha*, *Amlaki churna*, and *Haridra churna* along with following the rules of *Pathya* and *apathy* has great role to mitigate diabetes mellitus (type 2) in both subjective and objective parameter.

REFERENCES

- Burtis Ca, Ashwood Er, Bruns De. teitz text book of clinical chemistry and molecular diagnostics. in.: Elsevier; 2012. p. 1415.
- Harrison's Principles of Internal Medicine 19th edition, Volume 2. Mc Graw Hill Education. pg. 2400
- Zimmet P, Alberti kgmm, Shaw J. Global and Societal implications of the diabetes epidemic. nature. 2001 dec; 414.
- Chen L, Magliano DJ, Zimmet PZ. The worldwide epidemiology of type 2 diabetes mellitus: present and future perspectives. Nature reviews endocrinology. Available at: www.nature.com/uidfinder (Accessed 22nd December 2011)
- Genetic basis of type 1 and type 2 diabetes, obesity, and their complications. Advances and emerging opportunities in diabetes research: a Strategic Planning report of the DMICC. www2.niddk.nih.gov/NR (Accessed 22nd December 2011).
- Longo dl, Kasper dl, Jameson jl, et al, Editors. Harrison s principle of Internal medicine. in.: McGraw-hill; 2012. p. 2969.
- Ju H, Yang L, Fan J, Shu Z. Comparison of blood sugar and glycosylated hemoglobin in type 2 diabetic patients of Chinese provinces at different altitudes. Biomedical research. 2014; 25:3; p. 311-316)
- Mohan V, Shah S, Saboo B. Current glycemic status and diabetes related complications among type 2 diabetes patients in India: Data from the archive study. Supplement to JAPI. 2013 January; 61.
- Dr.Bramhanand Tripathi Editor (Reprint ed.). Charaka Samhita of Charaka (Vol- 1), Nidanasthana: Chapter 4, Verse 6. Varanasi: Chaukhamba Surbharati Prakashan, 2006; p. 613.
- Maharsi Agnivesa Charaka Samhita, Elaborated by Charaka and Dridhabala, Commentary by Sri Chakrapanidatta, Chaukhamba Surbharati Prakashan Varanasi, Ch.ni.4/6,7. pg.212.
- M.S. Bagul et al, Anti-inflammatory activity of two Ayurvedic formulations containing guggulu, Indian J phrmacol, Dec 2005, Vol-37, Issue 6, p. 399-400.
- Singh TR, Gupta LN, Kumar V. antidiabetic activity of Shilajitvadi lauha, an Ayurvedic herbo mineral formulation. International J health allied Sci 2016; 5:9-14.
- Ponnusamy S, Ravindran R, Zinjarde S, Bhargava S, Ameeta R (2011) Evaluation of Traditional Indian Antidiabetic medicinal plants for human pancreatic amylase Inhibitory effect In vitro Evidence-Based. Complementary and Alternative Medicine 10.
- Pandey AK, Verma Puja, Parihar Rahul *et al*. Amalaki (*Embllica officinalis Gaertn.*): A Comprehensive Classical review w.s.r. to Diabetes Mellitus. Research & Reviews: Journal of Herbal Science. 2018; 7(3): 4-10p.

Cite this article as:

Jeuti Rani Das, P.L. Bharati, Girindra Kumar Bora, Dinesh Baruah. A Case Study on The Management of Type 2 Diabetes Mellitus (Madhumeha) by Ayurvedic Intervention. AYUSHDHARA, 2022;9(1):35-39.

<https://doi.org/10.47070/ayushdhara.v9i1.904>

Source of support: Nil, Conflict of interest: None Declared

*Address for correspondence

Dr. Jeuti Rani Das

Research Officer (Ayu),
Central Ayurveda Research
Institute, Borsojai, Beltola,
Guwahati, Assam.

Email: djeutirani@yahoo.in

Disclaimer: AYUSHDHARA is solely owned by Mahadev Publications - A non-profit publications, dedicated to publish quality research, while every effort has been taken to verify the accuracy of the content published in our Journal. AYUSHDHARA cannot accept any responsibility or liability for the articles content which are published. The views expressed in articles by our contributing authors are not necessarily those of AYUSHDHARA editor or editorial board members.