Effective Ayurvedic management of Madhumeha (Diabetes Mellitus): A Case Study

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ABSTRACT

Madhumeha known as silent killer needs to be treated as early as possible to stop onset of complication. Madhumeha is a Tridosha redominant Vyadhhi but Avrutta Vata and Bahuhrtra Shlesma is the main ailments. It is a subtype of Vataja Prameha. 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. Methodology: A Case of 23 years female, complaining of increased frequency of Micturition, increased thirst since 7-8 months associated with loss of weight around 12-15 kg within one year, and generalized weakness was reported to Sri Kalabhraveshwara Ayurvedic Medical College & Research. Patient was under regular insulin since 1 and ½ years. Along with regular insulin, advised Shamaanaushadhi, Udvatampa, Virechanakarma and Nidanaparimarjana. Discussion: This Article is a discussion about a case of Diabetic mellitus successfully treated with Ayurvedic approach. Conclusion: The above described sets of Pacnchakarma treatment along with Shamanoushadhi has shown significant result clinically with speedy recovery within a month in present case study. 

Key words: Madhumeha, Diabetes mellitus, MODY, Shamaanaushadhi, Shodhana Karma

INTRODUCTION

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. 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.[1] Acharaya Sushruta has described two types of Prameha Roga in Chikitsa Sthana: 1. Sahaja Prameha (Hereditary Diabetes), 2. Apathya Nimittaja Prameha (Acquired Diabetes).[2]

As Acharya has explained Madhumeha is a ‘Mahagada’ or ‘Maharoga’ i.e., a disease which has grave and serious clinical manifestation. 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 Dhatuksha. The prodromal features of Prameha are excess Mala on 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.[3]

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, Acharya 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.

As we know Maturity onset diabetes of Young (MODY) is subtype of Type 2 DM characterized by single gene defect with autosomal dominant inheritance and presents in Young age (20-25years). Patients are non obese and their hyperglycemia is progressive due to impaired glucose induced secretion of insulin.[4]

**CASE REPORT**

A Female patient aged about 23 years, complaining of increased frequency of Micturition, increased thirst since 7-8 months associated with loss of weight around 12-15 kg within one year, and generalized weakness was reported to Sri Kalabyraveshwara Ayurvedic Medical College & Research Center, Bangalore.

**History**

Patient was apparently healthy before April 2021. Then she developed fever, cough, cold, weakness, during 2nd wave of COVID-19, for that she visited to nearby clinic, where they advised to do RT-PCR. That report showed RT-PCR Positive. There, Physician advised medication (unknown) and she got relief from above mentioned symptoms within.

In June 2021 she observed gradual weight loss in spite of increased appetite and proper intake of nutritious food. She had lost about 5-6 kg along with increased frequency of micturition, increased thirst. But she did not visit any hospital or clinic.

Then in December, 2021 when they observed symptoms were still increasing she visited the nearby clinic and there they advised to do blood investigation and Reports showed FBS-351mg/dl, PPBS-655mg/dl, HbA1C - 14.8%, urine sugar - 3+, total cholesterol level - 250mg/dl on the date of December 14th 2021.

Doctor advised insulin to control her sugar levels with (Inj. Actrapid 8-8-0 units before food and Inj. Lantus 0-0-22 units after food)

Again she did regular blood investigation on 14th June 2022, reports shown HbA1c - 6.8% and urine sugar - 3+, but symptoms such as increased frequency of micturition, increased thirst, increased appetite and weight loss were persisting. Around 12-15 kg weight loss was observed within one year and patient was not ready to take insulin for long duration or lifetime and hence she came to our hospital for treatment.

**Medication history**

Patient was on Insulin - Inj. Human Actrapid 8-8-0 units s/c before food Since December 2021, Inj. Lantus 0-0-22 units after food since December 2021, Tablet Novastat - TG 10mg 0-0-1 after food since December 2021.

**Family History**

All the family members are said to be healthy. Her parents are not known case of any metabolic disorder, and Grandfather was known case of type 2 Diabetic mellitus, No history of Consanguineous marriage.

**General Examination**

Nourishment: Moderately nourished

Respiratory rate: 16 / min

BP: 120/70mm Hg

Height: 156 cm

Weight: 48 kg (one year ago 60-64kg)

BMI: 20 kg/m²

Heart rate: 78/min

**Ashtha Sthana Pareeksha**

Nadi: 76/min
Mutra: 7-8 times / day, 3-4 times / night
Mala: once in day
Jihwa: Alipta
Shabda: Prakruta
Sparsha: Anushnasheeta
Drik: Prakruta
Akruti: Madhyama

Systemic Examination

Central Nervous System
No significant abnormalities have been reported.

Respiratory System
No significant abnormalities have been reported.

Cardio Vascular System
The chest appears symmetrical with no visible pulsations or dilated veins. The apex beat is palpable at the 5th intercostal space on the left side, and lung sounds are resonant, except for cardiac dullness. Auscultation reveals normal S1 and S2 heart sounds with no murmurs. Overall, the clinical assessment indicates a healthy chest and heart.

Gastrointestinal System
The patient's tongue is uncoated, maintaining good oral hygiene with no mouth ulcers. Abdominal examination reveals a scaphoid-shaped abdomen with a centrally placed umbilicus, and no visible pulsation, peristalsis, or mass. The abdomen is soft, non-tender, with no organomegaly. Bowel sounds are heard and no abnormal sounds are noted.

Roga Pareeksha

Nidana: Aharatmaka; Guru, Snighdha, frequent use of Paneer, Chocolates, fried items like Chips, Bakery food, soft drinks.

Viharatmaka: Ayayayama, Ratrijagarana, Divaswapna

Manasika: Stressful work

Other: Covid 19 Positive and detail treatment unknown

Poorvaroopa

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>Present/Absent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sweda</td>
<td>+</td>
</tr>
<tr>
<td>Angagandham</td>
<td>+</td>
</tr>
<tr>
<td>Anga Shithilatwam</td>
<td>-</td>
</tr>
<tr>
<td>Sayyasana</td>
<td>+</td>
</tr>
<tr>
<td>Swoonasukhabhishangithwam</td>
<td></td>
</tr>
<tr>
<td>Hridyopadeham</td>
<td>-</td>
</tr>
<tr>
<td>Netrapadeham</td>
<td>-</td>
</tr>
<tr>
<td>Jihwopadeham</td>
<td>-</td>
</tr>
<tr>
<td>Angaghantwa</td>
<td>+</td>
</tr>
<tr>
<td>Keshathivridhi</td>
<td>-</td>
</tr>
<tr>
<td>Nakhativridhi</td>
<td>-</td>
</tr>
<tr>
<td>Sheetha Priyathwam</td>
<td>+</td>
</tr>
</tbody>
</table>

Roopa

Frequent urination, Increased thirst, Loss of weight

Samprapti

Due to above mentioned Nidana lead to an imbalance in the three Doshas, with an emphasis on Kapha Dosha (Kapha Pradhana Tridosha Dushti). This Doshic imbalance can result in "Agnimandhyata," indicating a weakened digestive fire. This, in turn, can lead to the formation of "Ama," i.e., a toxic, undigested substance in the body. Ama further disrupts the balance of the "Rasadi Dhatus," including Kapha and Pitta, along with tissues like Mamsa (muscle) and Meda (fat), and leads to "Avarana" or obstruction. This can result in the "Sithilata" or debility of the Dhatu. Subsequently, the progression describes the accumulation of "Bahu Dravakapha" (excess liquid-like Kapha), "Apachita Meda" (impaired fat metabolism), "Kleda" (excess moisture), and "Drava Roopa Dhatu" (fluid-like...
Adopted Treatment

Table 1: Phase-1 Course of treatment

<table>
<thead>
<tr>
<th>Name of the treatment</th>
<th>Medicines used</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sarvanga Udwartana</td>
<td>Mudgachurna + Triphala Churna</td>
<td>10 days</td>
</tr>
<tr>
<td>Sarvanga Parisheka</td>
<td>Dashamoolakwatha</td>
<td>10 days</td>
</tr>
<tr>
<td>Snehapanana</td>
<td>Mahatiktakaghrita</td>
<td>3 days</td>
</tr>
<tr>
<td>Virechana</td>
<td>Trirutlehya + Triphala Kwatha</td>
<td>1 day</td>
</tr>
<tr>
<td>Samsharjana Krama</td>
<td>Mudgayusha</td>
<td>3 days</td>
</tr>
</tbody>
</table>

Table 2: Phase-2 Course of treatment

<table>
<thead>
<tr>
<th>Medicine</th>
<th>Dose</th>
<th>Time</th>
<th>Duration</th>
<th>Anupana</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shiva Gutika</td>
<td>1/2-0-1/2</td>
<td>Before food (6AM-6PM)</td>
<td>30 days (except during Snehapano)</td>
<td>Warm water</td>
</tr>
<tr>
<td>Mehabhyakasha</td>
<td>20ml-20ml-20ml</td>
<td>Before food</td>
<td>20 days</td>
<td>Warm water</td>
</tr>
<tr>
<td>Avipattikara Churna</td>
<td>1-0-1</td>
<td>1tsp after food</td>
<td>30 days</td>
<td>Hot water</td>
</tr>
<tr>
<td>Insulin - Inj. Human Actrapid</td>
<td>8-8-0 units s/c</td>
<td>Before food</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Inj. Lantus</td>
<td>0-0-22 Units s/c</td>
<td>Before food</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

RESULT

Table 3: Improvements

Before treatment                                      After treatment                                      On 26/12/2022
1. Increased sugar level                              1. Sugar level became normal range                  FBS - 79mg/dl, FUS – Nil
2. Increased frequency of urination                   PPBS - 110mg/dl,
basic cellular weakness

| (day-5-7 time, night 3-4 time) | 2. Reduced frequency of urination | PPUS - Nil |
| 3. Increased thirst | 3. Reduced frequency of thirst | |
| 4. Reduced appetite | 4. Appetite Improved | |
| 5. Generalized weakness | 5. Lightness of the body | |

**DISCUSSION**

**Probable Mode of action**

**Udvartana**

In *Madhumeha*, the dominant *Dosha* (morbid matter) and *Dushya* (target tissue) are *Kapha* and *Meda* (fat) so here *Udvartana* was selected for *Deepana-Paachana* as besides increasing the *Agni* (digestive power) it alleviates *Kapha* and *Meda* also. It is indicated in *Prameha*, hence, probably it helps in breaking the pathogenesis of *Prameha* which is produce a loss of fat, maintain integrity of tissues. It helps decrease *Kaphadosha* and *Medodhatu* which is main culprit to increase in diabetes. *Udvartana* improves the metabolic activities in the tissues. The effect of *Udvartana* could be due to its action on the enzymes regulating lipid breakdown. The powders of herbs commonly used for *Udvartana* may stimulate the lipolytic enzymes. Also, the action of brisk rubbing of powder over the skin may produce a mechanical effect on the receptors of the skin. Even though it is a non-invasive procedure it exerts its systemic action as evidenced by its effect on lowering the serum lipids.

This shows *Udvartana* may stimulate lipid catabolism throughout the body *Udvartana* has a compound influence on body fat as well serum lipids. This gives the dual advantage of preventing diabetes as well as its vascular complications.

**Snehapan**

*Snehapan* with *Mahatiktaka Ghrita* was given for 3 days (Doses 50ml, 100ml & 150ml). This processed *Ghrita* may help to reduce the insulin resistance at cellular level as well as the circulating free fatty acids in the blood. *Mahatiktaka Ghrita* with its *Sheeta* (cooling) and *Kleda Shoshana* (fluid-absorbing) properties, has the potential to alleviate the *Ushna* (heat-inducing) and *Tikshna Guna Vridhdi* (intense properties) associated with *Pitta Dosh*. In addition to this, when addressing *Pitta Kopa* (aggravation of *Pitta*), it aids in restoring the balance of *Dravaruipa Pitta Vridhdi* (excessive *Pitta*) and maintaining *Kledasamaavastha* (proper fluid balance). Perform reduction in peripheral resistance, Beta cell dysfunction, prevent further deposition of *Meda* (fat tissue) and brings normalcy in receptor function. This balanced approach can help prevent the progression of hyperglycemia by ensuring the normal functioning of *Saadhaka Pitta* and the preservation of *Ojas*,

**Virechana**

*Virechana Karma* is a potent therapeutic procedure aimed at eliminating excessive *Bahudrava Shleshma*, *Ambu*, and *Kleda*, all of which contribute to the development of *Prameha*. Through *Virechana*, one can attain a harmonious balance of *Dosha* and *Dhatu* in cases of *Prameha*. In *Prameha*, the primary issue lies in *Dhatwagnimandya*, and addressing this requires a focused approach to manage the *Agnimandya*. given its *Ushan*, *Tiksha*, *Vyavayi*, *Vikasi*, *Sukshma*, and Laghu properties, *Virechana* aids in the effective removal of morbid *Doshas* from the subtle channels (*Shukshma Strotas*) and stimulates *Agnivruddhi*. The qualities of *Kleda*, *Meda*, *Rasa*, *Ambu* and *Majja*, which are predominantly affected in *Prameha*, are in direct contrast to the properties of *Virechana Dravya*. Consequently, utilizing *Virechana* can be instrumental in achieving success in the treatment of *Prameha*.

*Virechana* is the process that helps in evacuation of toxins. As role of *Virechana* is on the site of *Pitta* it can be assumed that by acting primarily on liver and pancreas it may help to reduce hepatic glucose production and overcome the impaired insulin secretion. Both of these can justify its role in reducing both FBS and PPBS considerably.

**Avipattikara Churna**

*Avipattikara Churna* is a polyherbal Ayurvedic formulation that contains various herbs and spices...
such as Shunthi, Maricha, Pippali, Haritaki, Bibhitaki, Amalaki, Musta, and others. It is commonly used to treat Agnimandya (digestive impairment), Vibandha (constipation), Amlapitta (hyperacidity), Arsha (piles), Mutraghata (retention of urine), and Prameha (diabetes mellitus). Majority of drugs in Avipattikara Churna are possessing Katu, Tikta, Madhura Rasa, Laghu, Ruksha, Tikshna, Snigdha-guna, Ushna-sheetavirya, Madhura and Katuvipaka. Apart from Khandasharkara the main ingredient is Trivrut (Nishoth). It has Katu, Tikta Rasa, Laghu, Tikshna, Ruksha Guna, Ushna Virya and Katuvipaka. Trivrut is Tikta Rasa, Ushna Virya and Virechaka, thereby removes Kleda from the body, so it is helpful in Prameha. Studies have shown that Avipattikara Churna has a hypoglycemic effect, which is due to its ability to enhance insulin secretion. Additionally, the inclusion of Trikatu, which contains Piperine, has been shown to improve glutathione levels in diabetic rats. Overall, Avipattikara Churna is a useful Ayurvedic formulation that can help improve various health conditions.

**Shiva Gutika**

The Shiva Gutika[^9] is a polyherbal formulation that is believed to have been given to Lord Ganesha by Lord Shiva to cure Premeha, a syndrome involving conditions such as obesity, metabolic syndrome, and diabetes. The main ingredient in the Shiva Gutika is Shilajathu, which is believed to enhance immunity by balancing the three humors related to Vata, Pitta and Kapha. This polyherbal formulation can help cure the morbid factors through oral medication and nourishment while also enhancing immunity (Ojas). It is believed to act as an antibiotic, anti-diabetic, anti-venomous, anti-hypolipidaemic, anti-inflammatory, analgesic, immuno-modulatory, antiviral, antimicrobial, and antioxidant agent.

**Pathya-Apathya[^10]**

**Pathya:** Pathyapathy described by Acharya Charaka under the management of Premeha in Chikitsasthana that shows its importance. Advised to take Mudga Yusa (green gram), Barley, Roti prepare with Godhum (Wheat), Bitter vegetable, Kushodaka (warm water) and regular exercise is recommended, Pranayama and Yoga.

**Apathya:** Advised to avoid milk products like curd and pudding rice, milk based desserts, sugarcane items, Pishthana (highly carbohydrate rich food), sitting idle, Day sleeping, Dhumpana, controlling natural urges like Mutravega (Vega Dharana), lethargy and Ratrijaragara.

**CONCLUSION**

Ayurvedic Management such as Udvartana, Virechana and the use of herbal formulations like Avipattikara Churna and Shiva Gutika offer promising avenues for managing and preventing diabetes (Madhumeha). Udvartana, with its potential to stimulate lipid catabolism and maintain tissue integrity, addresses the key factors contributing to diabetes. Virechana, by improving Dhatwagni and reducing hepatic glucose production, plays a vital role in diabetes management. Avipattikara Churna and Shiva Gutika, with their unique blend of herbs, demonstrate hypoglycemic effects and enhance insulin secretion. These therapies and formulations provide a holistic approach to diabetes care. Pathya and Apathya, further complement these therapies to help individuals effectively manage their condition and reduce the risk of diabetes-related complications.

**REFERENCES**


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