

A REVIEW ON ETIOPATHOGENESIS AND MANAGEMENT OF MADHUMEHA (DIABETES MELLITUS)

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ABSTRACT

Madhumeha is foremost in life style disorders and it was described as one among the *Astamahagadas* in *Ayurvedic* classics. *Madhumeha* (Diabetes mellitus) is becoming fastest considerable diseases in the world. It is a metabolic disorder may result in deficiency or dysfunction of the insulin production. The main causative factors is said to be sedentary lifestyle, stressful mental conditions and food habits are running down to *Madhumeha*. In *Ayurveda* it is described in *Vataja pramehas*, which can be managed conservatively with *Yoga*, Exercise, Diet and Internal medication.

Keywords: *Madhumeha*, *Vatajapramehas*, *Astamahagadas*

INTRODUCTION

India is well known as the cradle of ancient civilization and has acquired immense knowledge on the nutritional and medicinal properties of large number of plant products through its rich heritage and traditional system of medicine.¹

Ayurveda the finest treasures of ancient period, is an eternal science and is claimed as *Anaadi* and *Saashwat* in the *Samhitas*. *Ayurveda* deals with the preventive and curative aspects of health. Worldwide need of alternative medicine has resulted in growth of natural product markets and interest in traditional system of medicine.

Nowadays, the sedentary life style and stressful mental conditions are running down to many distressing diseases, among them

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The word "*Prameha*" means passage of urine in large quantities or more products of metabolism which may or may not be a normal constituent of urine in large amounts. There are twenty types of *Prameha* mentioned in our *Ayurvedic* classics. If *Prameha* ignored and not treated properly in time it leads to *Madhumeha*.

The disease *Madhumeha* is clearly mentioned as a type of *Prameha* in all *Samhitas* like *Charaka*, *Sushruta* and *AshtangaHridayam*.^{2,3} One of the symptom of *Madhumeha* explained in *Ashtanga-Hridayam Nidana* is "*MadhumehiMadhuSamamMutram*" which

means honey like sweet urine, this can be correlated to glycosuria⁴. The disease *Madhumeha*, its definition, aetiology, clinical picture & principles of treatment appears to have great similarity with Diabetes mellitus. Hence, *Madhumeha* can be equated with Type II Diabetes.

Diabetes mellitus is a metabolic disorder characterized by hyperglycemia, glycosuria, hyperlipidemia, negative nitrogen balance, sometimes ketonemia and insulin resistance, which may be combined with relatively reduced insulin secretion.⁵ It is mainly produced by variations in lifestyle, like faulty dietary habits, lack of exercise, excess stress, addictions like smoking, alcoholism and the latest evidence based facts illustrates that genetic, environmental, functional and hereditary also contribute in the production of disease.

The incidence of Diabetes has shown an alarming increase around the world. WHO concluded that, the total number of people with diabetes is projected to rise from 171 million in 2000 to 366 million in 2030. India is included in the top 3 countries having highest number of people with diabetes along with China & U.S. increasing day by day.⁶

Aims and Objectives:

1. To study etiopathogenesis of *Madhumeha*.
2. To study current treatment trends of *Madhumeha*.

Materials and Methods:

Madhumeha is studied through different *Ayurvedic* and modern text, journal, magazine, internet. It is a review article based on data collected from different source.

Etiology:

The etiological factors such as frequent and excessive intake of fresh corns like *Hayanaka*, *Yavaka*, *Chinaka*, *Uddalaka*, *Naishadha*, *Itkata*, *Mukundaka*, *Mahavrihi*, *Pramodaka* and *Sugandhaka* lead to the immediate manifesta-

tion of *Prameha* to *Kaphadosha*. Intake of *Ushna*, *Amla*, *Lavana*, *Kshara* and *Katu Dravyas*. Intake of food before the digestion of the previous meal; Exposure to excessively hot sun, heat of the fire, physical exertion and anger; Intake of mutually contradictory food articles lead to *Paittaja Prameha*. Excessive intake of *Dravyas* having predominantly *Kashaya*, *Katu*, *Tikta Rasa*, *Ruksha*, *Laghu* and *Sheeta* due *Veerya*; *Excessive* indulgence in sex and physical exercise; fasting, assault, exposure to sun, anxiety, grief, excessive blood-letting, keeping awake at night and irregular postures of the body cause *Vataja Prameha*.

Madhumeha Nidana:

The person indulges in food substances having *guru*, *snigdha* qualities & excessive indulgence of *Amla* & *lavana rasa* substances and *navanapana*, excessive sleep, sitting in a same place for longer duration, avoiding exercises, excessive thinking and also not performing the *shodhana* process in a proper time⁷. *Acharya Sushruta* has narrated that untreated *Prameha* in its initial stage, gets converted into *Madhumeha* which becomes incurable.⁸

CLASSIFICATION

In the *Ayurvedic* classics *Madhumeha* has been classified as follows on the basis of various aspects

1. On the basis of Body Constitution:

(a) Sthula Pramehi:

Related to the obese diabetic person

(b) Krisha Pramehi:

Describing about the lean diabetic person

2. On the basis of the etiological factors:

(a) Sahaja (Hereditary):

Sahaja means due to *Matapita beeja dosha kruit* (Chromosomal defect from parents). This type can be compared with Type 1D.M.

(b) Apathyanimittaja (Acquired): Mainly due to Unwholesome things – food and exercise etc.,).⁹

3. On the basis of Pathogenesis:

(a) *Avaranjanya*:

Avaranjanya pathogenesis occurs due to etiological factors which lead to the vitiation of *Kapha*, *Pitta*, *Meda* and *Mamsa* which in turn cause *Avarana* of *Vata Dosha* leading to its provocation and manifestation of *Madhumeha*.¹⁰

(b) *Dhatuapakarshanjanya*:

Dhatuapakarshanjanya pathology occurs due to depletion of *Dhatu*s because of the *Vata* vitiated etiological factors.¹¹

4. Classification of *Prameha* for the management purpose:

***Santarpanjanya* and *Apatarpanjanya*:** This type of classification is described by Acharya Charaka. Classification is mainly based upon the over nutrition and under nutrition. So, *Santarpanjanya Madhumeha* can be correlated with *Avaranajanya Madhumeha* and *Apatarpanjanya* can be correlated with *Dhatukshayajanya Madhumeha*.^{12 13}

5. Classification as per *Dosha* Predominance

a) *Kaphaja Prameha* (10 types)

b) *Pittaja Prameha* (6 types)

c) *Vataja Prameha* (4 types), according to the characteristic of urine, its volume, *Dhatu* being excreted through urine.¹⁴

Pathogenesis (*Samprapti*)

When *sadhya roga* changes into *krichra sadhya* or *asadhya*, it can be called as *vidhi samprapti*. It commonly occurs in the untreated condition. As far as *madhumeha* is concerned, we can partly include it in *vidhi samprapti*. Acharya Sushruta explains it as if all the *Pramehas* are not treated first, they will gradually pass to stage of *madhumeha*. The different types of *Samprapti* which are mentioned by various Acharyas are being described below:-

1. Due to *Shuddha Vata*: Due to *Vata kara Nidana*, *Vata Dosha* provoked leading to *Kshaya* of other two *Doshas* and *Sarabhoota dhatu*s like *Vasa*, *Majja*, *Lasika* and *Oja*.

Due to *Kshaya* of *Dhatu*s, *Vata* further gets provoked. This highly provoked *Vata*

draws *Oja* towards *Basti* and leads to *Madhumeha*. This is *Asadhya* to treat due to its *Arambhaka Dosha Vata* and resultant further provocation due to *Dhatu Kshaya*.¹⁵

2. *Dhatu Kshaya Janya Madhumeha Samprapti*: The *Kshaya* of *Gambhira* and *Sarabhuta Dhatu*s like *Majja*, *Vasa*, *Oja* and *Lasika* leads to *Vata Prakopa*. *Vata Dosha* gets vitiated leading to *Ksharana* of *Sarabhuta Dhatu*s through *Mutra Pravriti* in such a quantity that this *Ksharana* of *Sarabhuta Dhatu*s itself acts as etiological factor again for *Vata Prakopa*, hence this vicious circle goes on. But due to *Ashukaritva* of *Vata* all the stages of *Samprapti* proceeds so fast that, it leads to *Asadhya* stage of the disease very quickly.¹⁶

3. *Aprathikaritha Vatanubandita Madhumeha Samprapti*: This type of *Madhumeha* is actually not a separate entity but it is the further stage of *Kaphaja* or *Pittaja Prameha* due to *Deerga Kalanubandha* or this may be called as ignored stage of *Prameha* due to lack of proper treatment. *Kaphaja* and *Pittaja Prameha* which are present from quite longer period they do get *Anubandha* of *Vata* to chronicity i.e., they get converted into *Vataja Prameha*.¹⁷

4. *Avarana Janya Madhumeha Samprapti*: Here one sees that *Nidana* is same as that of *Kaphaja Prameha* but still the resulting disease is *Madhumeha*. *Guru*, *Snigdhadhi Ahara*, *Avyayam*, *Adi Vihara* etc. leads to provocation of *Kapha* and *Pitta Dosha* in turn increases in quantity of *Meda* and *Mamsa*. All these increased factors obstruct the *Gati* of *Vata* leading to provocation of *Vata* and this withdraws *Oja* from the body and takes it towards *Basti* and leads to *Madhumeha*, which is *Krichra Sadya* for treatment.

SAMPRAPTI GHATAKAS

Dosha: *Tridosha specially vata*

Dushyas: *Rasa, Rakta, Mamsa, Meda, Majja, Vasa, Lasika, Oja, Shukra, Ambu*

Srotas: *Medovaha, Mutravaha, Udakavaha*

Srotodushti: *Atipravritti, Sanga*

Sanchaya: *Dhatu-gata (Tissue level)*

Prakopa: *Sarva sharira*

Prasara: Rasayani

Sthanasamshraya : Mutravaha Srotas

Agni : Dhatwagni mandya

Ama : Dhatugata (AparipakwaDhatu)

Udbahva : Amashaya

Swabhava: Chirkari 18

TREATMENT TRENDS IN AYURVEDA:

Chikitsa sutra (principles of treatment) and *Chikitsa* (Management Proper) are the two divisions of this major part. Both these are described very well in classics. But the concepts & methods are different in different conditions, considering the *Vyadhi swabhava & Atura*. The *Samprapti* should be considered deeply before stepping to manage. Following are the treatment modalities we can apply in *Madhumeha* to alleviate the disease.

Nidanaparivarjana

Treatment according to *Dosha, Dushya, Mala* complications. The eminent ancient *Ayurvedists, Charaka, Sushruta & Vagbhata* are considering the body constitution & strength of the body of the patient when dealing with the management aspect. After considering all the factors the two types of management emphasized are

Samshodhana Chikitsa [Elimination Therapy]

Samshaman Chikitsa [Normalizing Therapy]

In Pratyakhyeya vyadhis, symptomatic relief can be given by proper management.

SAMSHODHAN CHIKITSA: do proper spacing in words

Considering *Sthula & krisha pramehi*, *Samshodhan Chikitsa* should be administered only to the *sthula & Balvan Pramehi*. *Anuvasana & Asthapana Vasti chikitsas* are able enough to control the provocation of *vata, pitta & kapha*. Like this all the *doshas* are normalized to keep the *doshasamyata*. *Anuvasana* with medicated oils & *ghritas* are prescribed in *madhumeha*.

After proper *Shodhan Chikitsa*, appropriate *Santarpana Chikitsa* is indicated by *Charaka-charya* to prevent the complications.

SAMSHAMAN CHIKITSA:

Samshaman Chikitsa includes mainly *deepana, Pachana, Kshut, Trit, Vyayama, Atapa & Marut*. According to the conditions of vitiated *doshas, dushyas, vaidya* has to suggest proper *Shaman Chikitsa* to the patient. *Acharyas* introduces different *tarpana upkramas* in *vatika mehas*. It is due to the less strength of the patient.

ORAL MEDICATION:¹⁹ As regards drugs, there are so many drugs and formularies but the main drugs are either bitter (*Tikta*) or astringent (*kashaya*) in taste. They improve the fat and carbohydrate metabolism. Some of the medicines are given below; The drug of choice is (1) *Shilajatu* (2) *-Guggulu* and (3) *Haritaki* (myrobalan) and *Amalaki*. For obese persons *Guggulu* may also be used as *Guggulu* has been proved as hypo-cholesterimic drug.

Single formulations

1. *Guduchi swarasa* (*Tinosporacardifolia*) – 10ml twice a day with honey (A.H.Ci 12/6)
2. *Amalaki Curna* (*Phyllanthusemblica*) – 6 gm twice a day with honey (A.H.Ut. 40/48)
3. *KaravellakaPhala Curna* (*Momordiacharantia*) – 3 gm twice a day with water (D. V. P. V. Sharma. Voll.II. page – 685)

Compound preparations do proper spacing in words

1. T. *Chandraprabha*, 500 mg twice a day with water/milk (S.S.Ma.K.)
2. T. *VasantkusumakaraRas*, 125 mg twice a day with Honey (R. S. *RasayanaVajikaranaAdhikara*)
3. *BrihatvangeswaraRasa*, 125 mg twice a day with *Ajadugdha/Godugdha* (B. R. *Pramehacikitsa*)
4. *NisamalakiVati*, 500 mg trice a day with

TriphalaKasaya (A. H. *PramehaCikitsa*)

5. T. *MehariRas* (*Vangabhasma*, *paradabhasma* and *Rasasindura*) - 125 mg twice a day with *Ajadugdha/Godugdha*.
6. T. *MeghanadaRasa* (Purified *parada*, *gandhaka*, oxides of *kantaloha*, *teekshnaloha* and *swarnamakshika*, *shilajatu*, *manashila*, *triphala* and *haridra*. Prepared with *bhringaraja* juice), 125 mg twice a day with *Ajadugdha/Godugdha*
7. *Mauktikamadugha*, 125 mg twice a day with *Ajadugdha/Godugdha*
8. *Pravalbhasma*, 100 mg twice a day
9. *Mehmudgara* (BR), 125 mg twice a day
10. T. *Suvarnamalinivasantras* (Ay.SS), 125 mg once a day
11. *Tarakeshwara Rasa* (BR), 125mg twice a day with *Ajadugdha/Godugdha* (page 65 – Impcops Therapeutic index)
12. T. *Suvarnavangaraja*, 125 mg twice a day (Dr. SubhasRana KC text book)
13. T. *Arogyavardhini*, 500 mg twice a day
14. *Trivangabhasma*, 100 mg twice a day
15. T. *Apurvamalinivasanta*, 100 mg twice a day (BR)

Medicated Ghee

1. *Dhanvantaraghrita* 5 to 10 gm/day - (*Bhavapraksh* page 496)
2. *Dadimadyaghrita* 5 to 10 gm/day - (*Bhavapraksh* page 494)
3. *Sinhamritaghrita* 5 to 10 gm/day - (*Bhavaprakash* page 496)

Avaleha

1. *Saraleha*: (*Bhavaprakash*): Prepare decoction of *asana* (*Pterocarpusmarsupium*), *khadira*, *babbula* and *bakula* (*Mimusopse-lengi*). During boiling add oxides of *tamra* and *loha* and powders of *amalaki*, *danti*, *lodhra* and *priyangu*. This is useful for all types of *Prameha*. Dose: 3to 5 mg / day.
2. *Gokshuradyavaleha* (*Bhavaprakash*): prepare decoction of *gokshura* and add *trikatu*, *nagakeshara*, cinnamon, *ela*, *jatipatra* and *vamshalochana*. This is also useful in all types of *Pramehas*. Dose: 3to 5 mg /

day.

Kwatha (decoction)

(1) *Darvi*, *Surahwa*, *Triphala*, *Musta*.

(2) *Triphala*, *darvi*, *Vishala*, *Musta*. Composition of the above two decoctions are same except for one drug. The first contains *Surahwa* (*Devadaru*) and the second contains *Vishala*. *Vishala* is drastic purgative and so can be used in constipated persons. The dose and duration of therapy, *pathya*– *apathya* (wholesome and unwholesome) may be conveniently decided by the physician on case to case basis on *Ayurvedic* parameters.

YOGA²⁰

Yoga provides an appropriate lifestyle intervention that would be greatly helpful in regeneration of beta cells of pancreas may be taking place, which may increase utilization and metabolism of glucose in peripheral tissues, liver and adipose tissue through enzymatic processes. Improved blood supply to the muscles and muscular relaxation along with its development enhances insulin receptor expression causing increased glucose uptake and thus reducing blood sugar. Various type of *Yoga Asana* performed as a preventive therapy are *Suryanamaskar* (increase blood supply and improving insulin administration), *Mandukasana* (stimulate pancreas to secrete insulin), *Dhanurasana* (improves functioning of pancreas and intestines), *Sarvangaasana* (improves blood circulation), *Halasana*[16] (stimulates pancreas and activate immune system). Apart from this *Pranayama* as *Kapalbhati*, *Anulom-Viloma* are the best options for diabetic since reduction of stress hormones like adrenaline and cortisol lower blood glucose levels.

DISCUSSION

Western approach for Diabetes is based on wrong footings. Treating hyperglycemia with hypoglycemic drugs without caring to correct the metabolic impairment is something like applying dye to the grey hair which though

helps to look younger does not reverse the fundamental process of senescence.

General treatment modalities include lifestyle modifications, treatment of obesity, oral hypoglycemic agents and insulin sensitizers like Metformin etc. On long standing usage of DM drugs, people are more vulnerable to various forms of short and longterm complications, which often lead to their premature death.

Under the present circumstances *Ayurvedic* approach for etiopathogenesis and treatment would be of great use for *Madhumeha* (Diabetes Mellitus). *Ayurvedic* remedies for *Madhumeha* were the oldest among all available therapies and give the best and powerful treatment.

CONCLUSION

Ayurveda does not regard diabetes mellitus as a disease that can be treated by mere medicine or by a dietary regimen. Though it is a *yapya* (not totally curable / difficult to cure) disease, the prolonged use of the above treatment procedure will not only generate the person free from Diabetes Mellitus but protect to live a long life (*deerghajeevanam*), healthy (*sukhayu*) and will be useful to the society (*hitayu*).

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