



Review Article

ISSN 2320-4818

JSIR 2015; 4(4): 193-196

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Received: 17-08-2015

Accepted: 29-08-2015

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Diabetes Mellitus: An Ayurvedic View

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Abstract

Diabetes Mellitus refers to a group of common metabolic disorders that share the phenotype of hyperglycemia. Several distinct types of DM are caused by a complex interaction of genetics and environmental factors. Depending on the aetiology of the DM factors contributing to hyperglycemia include reduced insulin secretion, decreased glucose utilization, and increased glucose production. Diabetes is known as *Prameha*, which has been discussed in Ayurveda since antiquity. *Caraka* has given exhaustive description of the disease *Prameha* which ultimately progresses towards *Madhumeha* or the sweetness of urine in addition to Polyurea.

Keywords: Diabetes Mellitus, Hyperglycemia, *Prameha*.

INTRODUCTION

As of 2014, an estimated 387 million people have diabetes worldwide, with type-2 diabetes making up about 90% of the cases. This is equal to 8.3% of the adult population, with equal rates in both women and men. In the years 2012 to 2014, diabetes is estimated to have resulted in 1.5 to 4.9 million deaths per year. The causes of DM-2 are comparable to the disease entity *Prameha/Madhumeha* in Ayurveda. The Ayurvedic texts reflect two major categories of *Prameha* 1. *Sahaja Prameha* 2. *Apathyanimittaja Prameha*, out of these two, *Apathyanimittaja Prameha* is closely resemblance with the contemporary concepts of Type-2 Diabetes mellitus. On this basis, Ayurveda has described *Sthula Pramehi*, which clearly corresponds to the current concepts of obese and its role in the genesis of type-2 Diabetes mellitus.

MATERIALS

All the description related to *Prameha* available in *Caraka Samhita* and *Sushruta samhita* is collected and reviewed. *Prameha* has been described eloquently and elaborately in *Caraka Samhita* (C.S.Ci.6). In *Sushruta Samhita* it is found in *Nidana Sthana* sixth chapter and in *Cikitsa Sthana*'s 11th, 12th and 13th chapter. While *Madhavakara* describes it in its 33rd chapter, which is *Prameha Nidana*.

Etymology of *Prameha*

The word *Prameha* consists of two words i.e. *Pra* (upsarga-prefix) and '*Meha*'. *Meha* is derived from the root '*Mih Secane*' meaning watering with reference to disease of human body. Excessive quantity and frequency is indicated by the prefix *Pra*. Therefore the word *Prameha* means passing of urine profusely both in quantity and frequency.

Definition of *Prameha*

Acarya Vagbhata describes *Prameha* as frequent and copious urine with turbidity i.e. *PrabhutAvila Mutrata*.

Classification of *Prameha*

Twenty types of *Prameha* have been described in Ayurveda:

- | | | |
|----------------------------|---|----|
| i. <i>Kaphaja Prameha</i> | - | 10 |
| ii. <i>Pittaja Prameha</i> | - | 06 |
| iii. <i>VAtaja Prameha</i> | - | 04 |

Types of Prameha according to different texts

Types	Caraka	Sushruta	Vagbhata
a. Kaphaja	1. Udakameha	Udakameha	Udakameha
	2. Iksuvalikarasameha	Iksuvalikameha	Iksimeha
	3. Sandrameha	Sandrameha	Sandrameha
	4. Sandra Prasadameha	–	–
	5. Sukla meha	Pistameha	Pistaameha
	6. Sukra meha	Sukrameha	Sukrameha
	7. Sitameha	–	Sitameha
	8. Sikatameha	Sikatameha	Sikatameha
	9. Sanairmeha	Sanairmeha	Sanairmeha
	10. Alalameha	–	Lalameha
b. Pittaja	–	Surameha	Surameha
	–	Lavanameha	–
	–	Phenameha	–
	1. Ksudrameha	Ksudrameha	Ksudrameha
	2. Kalameha	–	Kalameha
	3. Nilameha	Nilameha	Nilameha
c. Vataja	4. Lohitameha	Sonitameha	Raktameha
	5. MĀanjisthameha	Manjisthameha	Mañjisthameha
	6. Haridrameha	Haridrameha	Haridrameha
	–	Amlameha	–
	1. Vasameha	Vasameha	Vasameha
	2. Majjameha	Sarpimeha	Majjameha
3. Hastimeha	Hastimeha	Hastimeha	
4. Madhumeha or Ojomeha	Ksaudrameha	Madhumeha	

Aetiological classification

On the basis of aetiology, Sushruta has mentioned clearly two types of Prameha. One is Sahaja (hereditary) another is Apathyanimittaja (Acquired). Acarya Bhela has named them as – Prakétaja and Svakétaja Prameha.

a. Sahaja : Sahaja Prameha occurs as a result of Bija dosa i.e. genetic origin. While describing prognosis, Acarya Caraka has narrated that Jatapramehi is incurable.

b. Apathyanimittaja : It occurs due to unwholesome Āhara & Vihara. (Faulty diet & life style errors)

Prognostic classification

Sadhya : Kaphaja, Sthula, Apathyanimittaja, New case without complications, Pittaja in which Medodhatu not highly vitiated.

Yapya : Pittaja Prameha

Asadhya : Vataja, Jatapramehi

ETIOLOGY

The general etiological factors of Prameha are elaborately mentioned in Ayurvedic classics. For convenience, aetiological factors can be broadly classified into Sahaja and Apathyanimittaja.

Sahaja Nidana

In addition to other factors, the classics have also accepted the concept of hereditary factor as a cause of Prameha.. Caraka has mentioned that overindulgence of Madhura rasa by mother during pregnancy is likely to induce Prameha.

Apathyanimittaja

Hayanaka, Yavaka, Cinaka, Uddalaka etc. in newly cultivated form, Consumption of new pulses like Harenu and Masa with Ghrita, Guda and Iksu vaikrita preparation, milk, fresh milk, Mandaka dadhi and all

other materials which increase Kapha ,Lack of exercise, Laziness, Excessive sleep during day, alcohol consumption etc.

Clinical features of Prameha

The Rupa described in Ayurveda includes both signs and symptoms. These can be categorized under following head:

1. General features of Prameha.
2. Premonitory features of Prameha.
3. Specific symptomatology of Prameha

1. General features of Prameha

a. Urine Characteristics:

Prabhutamutrata : This cardinal feature described by all Ācharyas. Vagbhata mentioned Prameha as the disease of Mutratipravrtija (A.H.Ni 9/40) i.e. patient voids more urine both in quantity and frequency. Gayadasa on (Su. Ni. 6/6) opines that this excess urine quantity is because of liquification of the Dusyas and their amalgamation.

Āvilamutrata : Patient voids turbid urine. According to Gayadasa and Dalhana, this turbidity of urine is due to the nexus between Mutra, Dusya and Dosa. (Su.Ni. 6/6)

Kasyapa mentioned following symptoms of Prameha to be observed in pediatric patients (Ka. Su. 25/22).

- Akasmata Mutranirgama: Child excretes urine suddenly with no intention.
- Maksika Akaranta : Flies get attracted towards the urine.
- Sveta and Ghana Mutrata : Child excretes urine having Sveta colour and solid consistency i.e. turbidity.

b. Associated signs and symptoms

Before propounding the treatment of Prameha, Ācharya Sushruta in Chikitsa sthana asserted two type of Prameha as follows:

Sahaja Pramehi

- Krisa (Asthenic)
- Rauksa (Dry body)
- Alpashi (consumes less food)
- Bahu Pipasa (Voracious thirst)
- Parisaranasila (Restless always desires to wander)

Apathyanimittaja

- Sthula (Obese)
- Bahuasi (Voracious eater)
- Snigdha (Unctuous body texture)
- Sayyasanasvapnasila (Like to sit down & sleep always)

2. Premonitory features of Prameha

According to Sushruta the person should be diagnosed as Pramehi when complete or partial premonitory symptoms of Prameha accompanied by polyuria (**Prvritamutramatyartham**) get manifested (Su.Ni.6/22-23). In this context, Gayadasa opined that in this disease all prodromal symptoms get converted into Rupa due to specific nature of disease i.e. Vyadhi Prabhava.

3. Specific Symptomatology of Prameha

This includes the physio-chemical characteristics of urine of twenty types of *Prameha*, which is based on specific interactions of *Dusya* and *Dosa*. Further categorized into three major head of *Vataja*, *Pittaja*, and *Kaphaja Prameha*. The clinical features are summarized in a given table.

Clinical features of *Kaphaja Prameha*

Name	Characteristics
<i>Udakameha</i>	Individual passes large quantity of water like urine, which is transparent, white, cold and without any smell.
<i>Ikshuvalikarasameha</i>	Urine like sugarcane juice and extremely sweet, cold and slight slimy and turbid.
<i>Sandrimeha</i>	Precipitation in the urine, which is deposited in the pot when kept for sometime. Urine is turbid and thick.
<i>Sandraprasadameha/Surameha</i>	Urine is partially viscous and partially clear when kept overnight. <i>Surameha</i> means alcoholic smell in the urine.
<i>Suklameha / Pistameha</i>	Urine seems to be mixed with some paste.
<i>Sukrameha</i>	Urine passed mixing along with semen.
<i>Shtameha</i>	Cold, sweet and increased quantity of urine with increased frequency.
<i>Siktameha</i>	Urine passed with some particles.
<i>Sanairmeha</i>	Quantity of urine is small and passed with difficulty and slowly.
<i>Alalameha / Lalameha</i>	Urine is slimy like <i>Kapha</i> and seems as if full of threads.

Clinical features of *Paittika Prameha*:

Name	Characteristics
<i>Ksharameha</i>	Smell, colour, taste and touch of the urine is as like alkali.
<i>Kalameha</i>	Blackish urination.
<i>Nilameha</i>	Bluish urination.
<i>Lohitameha/Raktameha</i>	Colour of urine is reddish, having smell of fresh blood and salty taste.
<i>Mañjisthameha</i>	Colour of urine is like decoction of <i>Mañjisthawaha</i> and smell like of raw flesh and passes frequently.
<i>Haridrameha</i>	Colour of urine is like decoction of <i>Haridra</i> (yellow) and taste pungent accompanied with burning sensation.

Clinical features of *Vatika Prameha*

Name	Characteristics
<i>Vasameha</i>	Patient frequently passes urine mixed with fat (<i>vasa</i>)
<i>Majja meha, Sarpimeha</i>	Patient frequently passes urine mixed with bone marrow like substance.
<i>Hastimeha</i>	Large quantity of urine passes as like in elephant.
<i>Madhumeha, Ksaudrameha</i>	Urine passes sweet, astringent like honey.

General pathogenesis of *Prameha*

General pathogenesis of *Prameha* is described elaborately by *Caraka* in *Nidana sthana* (Ca. Ni. 4/8). Although *Prameha* is a *Tridosika* disease but initially it starts with derangement of *Kapha Dosa*. Prolonged and excess use of *Kapha Prakopaka Ahara-Vihara* leads to vitiation of *Kapha*. The vitiated *Kapha* (*Bahudrava Kapha*) have basic similarity to characteristics of *Meda*, both interact each other and flows with loose *Medas* in the system. During the course, the vitiated *Kapha* further interact with *Mamsa* and *Kleda*. The association with *Mamsa* produces *Prameha Pidika*. The association with *Kleda* converts the *Kleda* in to *Mutra* and the vitiated *Meda* and *Kleda* obstruct the opening of *Mutravaha Srotas*. They stay remain for some time and this retention for considerable duration causes *Kaphaja* type of *Prameha*.

According to *Caraka*, *Kaphaja* and *Paittika Prameha* follow the same course except with only one difference that *Pitta* is predominant in place of *Kapha*.

Prameha Upadrava (Complications)

1. General Complications

Trishna, Atisara, Daha, Daurbalya, Arocaka, Avipaka, Putimaisa pidaka, Alaji, Vidradhi etc. (Ca.Ni.4/48)

2. Specific Complications

a. *Kaphaja Prameha*

Maksikopasarpanam, Alasya, Mamsopacaya, Pratisyaya, Saithilya, Arocaka, Avipaka, Kapha praseka, Chardi, Nidra, Kasa and *Svasa* (Su.Ni.6/15).

b. *Pittaja Prameha*

Vrisanayoravadaranam, Basti-bheda, Medhra-toda, Hridaya Sula, Amlika, Jvara, Atisara, Arocaka, Vamathu, Paridhumayana, Daha, Murcha, Pipasa, Nidranasa, Pandu, Pitta-vinmutranetratva. (Su.Ni.6/15)

c. *Vataja Prameha*

Hridgraha, Laulya, Anidra, Stambha, Kampa, Sula, Baddha Purisatva (Su.Ni.6/15).

Prameha Pidaka

Ayurvedic texts have described *Prameha pidaka* as a major complication of *Prameha*, *Prameha pidaka* develops dependently in patients of *Prameha* and independently in the patients having primary features of *medodusti*. These *Prameha pidaka* require surgical intervention.

Prognosis

1. The ten *Kaphaja Prameha* are curable because of the compatibility in the principles of treatment due to similar nature of *Dosa* and *Dusya* i.e. *Samakriyatvat*.
2. The *Pittaja Prameha* are palliable because of the incompatibilities in the line of treatment i.e. *Visamakriyatvat*.
3. The *Vataja Prameha* are incurable because of great severity of disease or involvement of *Dosa* and *Dusyas* (especially *Ojas*) contradictory treatment i.e. *Mahatyayvatvat*.

Management of *Prameha*

(A) *Cikitsasutra* (Principles of treatment)

(B) *Chikitsa* (Management)

Chikitsa sutra (Principles of treatment)

In all types of *Pramehas*, *Kapha* gets vitiated, but in *Madhumeha* comparatively *Vata* is often aggravated as well. Therefore therapies will be directed at both *Kapha* and *Vata* simultaneously.

Caraka has said that the patients who are obese and strong body built, one should adopt *Samsodhana* treatment and who are asthenic body built and weak, one should undergo for *Brihmana* therapy.

According to *Sushruta*, *krisa Pramehi* should be treated with *Santarpana* measures processed diet and drink, while obese should be treated with *Apatarpana* measures (*Vyayama and shodhana*).

Chikitsa (Management):

It consists of triangular approach.

1. *Ahara* (Diet)
2. *Vihara* (Exercise & Yoga)
3. *Ausadhi* (Medicines)

Ausadhi (Medicines)

As it is evident that *Kapha Dosa* is predominant in *Prameha* and the *Dusya Meda* is of same nature. In *Ayurveda* for the treatment of *Prameha*, drugs having *Tikta* (bitter), *Katu* (pungent) and *Kasaya* (astringent) *Rasa* have been recommended. *Susruta* clearly indicated the decoction of *Salasaradi Gana* drugs with *Shilajatu* for the treatment of "*Prameha/Madhumeha*".

Ahara Chikitsa (Diet Therapy)

First of all "*Nidana Parivarjana*" is very firmly advocated in all classics for the management of disease. So, *ahara* which does not increase body weight and opposite to etiological factors of *Prameha* is advised to the patient. It is well known that diabetes is a disease of modified life style and faulty *Agni*, so more emphasis should be given on diet and bio-purificatory measures.

Caraka has recommended *Yava* etc. as a principle diet for *Pramehi*. In this concern he suggested that *Yava* first given to animals and then remaining parts collected from the dung of that animals to be consumed by *Pramehi*.

Vihara (Exercise)

As mentioned earlier, lack of exercise and excessive sleep during day and night time play an important role in etiology and pathogenesis of *Prameha*. *Sushruta* has described that in advance stage of *Prameha*, *Pramehi* should practice of regular physical exercise, wrestling, actual sports, riding on a horse, or an elephant, long walks, pedestrian journeys, practicing archery, casting of javelins etc.

Conclusion

Diabetes Mellitus or *Prameha* is disease of *Mutravaha Srotasa* having *Kapha* dominancy. Diabetes Mellitus is defined as the state of chronic hyperglycemia due to impairment of insulin secretion or its action. Diabetes mellitus (DM) comprises a group of common metabolic disorders that share the phenotype of hyperglycemia. Through triangular approach of diet, exercise and medicine it can be managed by *Ayurveda*.

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