

## Role of nutrition in *Madhumeha*

### Seminar Article

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### Abstract

*Ahara* is considered as one among the “*Thraya Upasthamba*”. Many of the diseases can be prevented by intake of proper *ahara* as per classics. One who follows the regimen mentioned in *ayurveda* can lead healthy and long life. Now a days people are more prone to several life style disorders. *Madhumeha* is one among the lifestyle diseases, which is more prone to those who consume inappropriate nutrition and lead sedentary life. *Ayurveda* mainly aims to prevent such diseases by emphasizing the importance of diet as well as healthy regimen. *Madhumeha* can be treated with *pathya ahara* (proper nutritional diet) and *vihara* (regimen) along with the drug intervention. *Ahara* is food as well as medicine to those who suffer with *madhumeha* as it corrects the vitiated *dosha* and *dhatu*. It prevents the further complications of *madhumeha*. So, by the administration of proper nutritive diet and regular exercise, *madhumeha* can be prevented. The present paper highlights the role of nutrition in *madhumeha*.

**Key Words:** *Ayurveda, Ahara, Life style, Madhumeha, Nutrition, Vihara.*

### Introduction

The disease where excessive sweet urination takes place is called as *Madhumeha*. *Madhumeha* is the combination of two words ‘*Madhu*’ which means sweet and ‘*Meha*’ means excessive urination (*atipravritti*). Sushruta mentioned *Madhumeha* as *kshaudrameha* but Charaka mentioned as *ojomeha*. According to Charaka the vitiated *vata* alters the *madhura rasa* of *ojas* into *kashaya rasa* and carry the same into *mutrasaya* that leads to *madhumeha*. As the birds are attracted towards the trees where lies their nests, similarly *Prameha* affects the people who are voracious eaters and have aversion to bath and physical exercise. They are exposed to several complications of *madhumeha* which finally leads to death(1, 2). According to Sushruta *prameha* if not treated properly leads to *madhumeha* and become incurable(3). But charaka categorized *madhumeha* under the *vataja* type of *prameha*. The word *prameha* is derived from two words *pra+meha*. The prefix *pra* means *prakarshanena* is the frequency and *meha* is derived from *miha sinchane* which means profuse or excessive quantity. So the main characteristic feature of *prameha* is *avila mutrata*(turbidity in the

urine) and *prabhuta mutrata*(excessive urination)(4). The person suffering from *madhumeha* prefers to stand rather than to move from place to place, prefers to sit rather than to stand, prefers to lie down rather than to sit and desires to sleep rather than to lie down.(3)

### Importance of Diet

The role of diet is elaborately mentioned in charaka samhita, as *ahara* is compared with *aushada* when taken properly. The body is constituted of food(5) and one should take wholesome food in appropriate quantity i.e., it should not disturb the equilibrium of *dosha* and *dhatu* of the body, then it gets proper digestion and metabolism in the body(6). One should take food in such a way that among three parts of the stomach, one part should be filled with solid food, one part filled with liquid and the last part with *vata, pitta & kapha*(7). *Guru ahara* should be taken only three fourth or half of the stomach capacity, where as *laghu ahara* also should not be consumed in excessive quantity(8). Taken in appropriate quantity, food provides the strength, complexion, happiness and longevity of the individual(8).

There are eight factors which determine the utility of food which are called as *Astaahara vidhivishesha aayathana* (9). They are :

- I. Nature of food
- II. Method of processing
- III. Combination
- IV. Quantity
- V. Habitat
- VI. Time

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VII. Rules for intake of food

VIII. Wholesomeness

One should follow ten rules before food intake(10).

They are:

- IX. *Usna* (food should be warm)
- X. *Snigdha* (unctuous)
- XI. *Mathravath* (proper quantity)
- XII. *Jeerna* (after digestion of previous meal)
- XIII. *Virya aviruddha* (no contradictory potency)
- XIV. *Ista desa & ista sarvopakarana* (proper with all accessories)
- XV. *Na ati dhrutam* (not too hurry)
- XVI. *Na ati vilambitham* (not too slow)
- XVII. *Ajalpan ahasan thanmana bunjitha* (intake with concentration)
- XVIII. *Atmanamabhisameekshya* (intake with self confidence)

### Classification of food

According to the source of availability, *ahara* can be divided into *sthavara* and *janghama*. According to the effect on the health of living beings *ahara* can be classified as *sama* or *hitha ahara* (wholesome) and *visama* or *ahitha ahara* (unwholesome)(11). Wholesome food is responsible for the cause of the growth of living beings whereas unwholesome food is responsible for the cause of the disease of living beings(12). According to the way of consumption *ahara* can be divided into four types a) *Ashitha*-eatables b) *Khaditha*-chewables c) *Peetha*-drinks & d) *Leeda*-lickables. According to the effect on tongue, food consists of six types of tastes which are *madhura*, *amla*, *lavana*, *katu*, *tiktha* & *kashaya*. Food consists of twenty qualities, which are heavy, light, cold, hot, unctuous, dry, dull, sharp, stability, fluidity, soft, hard, non sliminess, sliminess, smooth, rough, subtle, gross, solid and liquid(13).

### Digestion of food and nourishment of body tissues

All the four different types of food enters the *Amashaya* (stomach) which is present in between umbilicus and nipples. There the digestion of food occurs by means of agni. Food after digestion converts into two forms i.e., a) *prasada* or *rasa* which is the essential material for the body and b) *kitta* which is the waste product. All the digested food enters all the organs of the body through blood vessels(14).

The *prasada bhaga* provides nutrition to *rasa*(plasma and other body fluid), *rakta*(blood), muscle, fat, bone, marrow, semen, *ojas*, *pancha indriya*(five sense organs), joints and ligaments.

The *kitta bhaga* provides nutrition to sweat, urine, stool, *vata*, *pitta*, *kapha*, excreta of ear, eye, nose, mouth, hair follicles & genital organs, hair of the head, beard, small hair on body and nails(15).

### Contra indicated food (16)

One should not regularly take the following-

- *Guru hara ahara*
- Pastries
- Newly harvested rice
- *Sushka shaka* (dry vegetables)
- *Dadhi* (curd)
- *Masha* (phaseolus mungo)
- *Prithuka* (boiled & flattened paddy)

### Indicated food (16)

- *Sastika* (rice which is harvested in sixty days)
- *Saali* (*oryza sativum*)
- *Mudga* (phaseolus mungo)
- *Saindhava lavana* (rock salt)
- *Amalaka* (*emblica officinalis*)
- *Yava* (barley)
- Ghee
- Honey
- *Jangala mamsa* (animals in arid climate)

### Nidana of madhumeha (17,18)

- People who are addicted to the pleasure of sedentary habits.
- Day sleep.
- More curd intake.
- Who are lazy without any physical activity.
- Intake of freshly harvested food articles.
- Intake of freshly prepared alcoholic drinks.
- Intake of preparations of jaggery.
- Intake of cold, slimy, sweet and fatty food.
- Intake of *kapha* aggravating factors.

### Etiological factors

According to sushruta, there are two types of etiological causes of *prameha* which are, *Sahaja* and *Apathyanimittaja*(19).

### Hereditary

According to Charaka excessive intake of *madhura rasa ahara* like sugar cane preparations, jaggery, milk products, butter, rice, bread etc., by the parents is the chief cause of the chromosomal abnormality of the sperm and ovum. This congenital aspect can trigger the disease process for which there is a genetic predisposition. The dietary factors, lifestyle and adverse psychologic state of the mother during lactation may also play a decisive role to cause *prameha* in the infants(20). In addition, excessive intake of *madhura rasa* during childhood can contribute to the onset of *prameha* in children who are genetically predisposed. Thus, hereditary predisposition, unwholesome dietary habits and lifestyle plays major role to cause *sahaja* (hereditary) *prameha*.

### Acquired

Due to the habitual intake of heavy unctuous food, rice from newly harvested crop and fresh wine, those who sleep too much and those who lead sedentary life doshas especially *kapha*, *pitta*, *vata* and *dushyas* like *medas*, *rakta*, *sukra* (semen), *ambu* (body fluid), *vasa* (muscle fat), *lasika* (lymph), *majja*, *rasa*, *ojas* & *mamsa* are vitiated and leads to *prameha*.

### Pathogenesis

Due to the above mentioned etiological factors there will be increase of *kapha* & *pitta* along with *medas* & *mamsa dhatu*. Then the path of *vata* is obstructed and the *vata* along with *ojas* comes down to the *basti* (urinary bladder) which leads to *madhumeha*. If it is not treated properly causes carbuncles in

subcutaneous & muscular areas, vital parts and joints of the body(21)

### Prodromal features (22,18)

- Numbness and burning sensation in hands, feet and various organs of the body.
- Oiliness, sliminess & heaviness of limbs.
- Sweetness & whitish colour of urine.
- Attraction of ants by the body and urine
- Thirst, drowsiness & lethargy.
- Dryness in mouth, palate and throat
- Sweet taste and bad smell in the mouth.
- Production of deposits in the palate, throat, tongue & teeth.
- Matting together of hair.
- Increased growth of nails & hair.

**Table 1: Classification of Prameha**

1	According to etiological factors	a) <i>Sahaja or kulaja</i> (hereditary) b) <i>Apathya nimittija</i> (acquired)
2	According to <i>dosha</i>	a) <i>Kaphaja</i> - 10 types b) <i>Pittaja</i> - 6 types c) <i>Vataja</i> - 4 types
3	According to constitution	a) <i>Sthula pramehi</i> b) <i>Krusha or dourbalya pramehi</i>
4	According to prognosis	a) <i>Sadhya</i> (curable) b) <i>Yapya</i> (palliable) c) <i>Asadhya</i> (Incurable)

**Table 2: Samprapti ghataka of Prameha**

1	<i>Dosha</i>	<i>Tridosha</i> , especially <i>kapha</i>
2	<i>Dushya</i>	<i>Medha</i> along with <i>rasa</i> , <i>rakta</i> , <i>mamsa</i> , <i>vasa</i> , <i>majja</i> , <i>lasika</i> , <i>sukra</i> , <i>ambu</i> and <i>oja</i> .
3	<i>Adisthana</i>	<i>Vasti</i>
4	<i>Udbhava</i>	<i>Antahkostha</i>
5	<i>Srotas</i>	<i>Mutravaha srotas</i> , <i>medhovaha srota</i> , <i>udakavaha srotas</i>
6	<i>Srotadusti</i>	<i>Atipravritti</i>
7	<i>Agni</i>	<i>Dhatwagni mandha</i>
8	<i>Vyadhiswabhaba</i>	<i>Chirakari</i>

**Table 3: Types of Kaphaja Prameha (23)**

1	<i>Udaka meha</i>	Urine which resembles water.
2	<i>Ikshuvalika meha</i>	Urine which resembles sugarcane juice.
3	<i>Sandra meha</i>	Urine which possess density.
4	<i>Sandra prasada meha</i>	Urine which has density below and transparency in the upper layer.
5	<i>Suklameha</i>	Urine which is whitish colour.
6	<i>Sukrameha</i>	Urine mixed with semen.
7	<i>Sitamaha</i>	Urine which is cold to touch.
8	<i>Sanairmeha</i>	Urine which pass out slowly.
9	<i>Lalameha</i>	Urine with slimy material like saliva.
10	<i>Sikatameha</i>	Urine which contain sand like particles.

All these ten types are curable due to the compatibility of the therapies for their treatment(24).

**Table 4: Types of Pittaja Prameha (23)**

1	<i>Ksharameha</i>	Urine which resembles alkali.
2	<i>Kalameha</i>	Urine which is black in colour.
3	<i>Nilameha</i>	Urine which is blue colour.
4	<i>Haridrameha</i>	Urine which is yellow colour like turmeric.
5	<i>Manjisthameha</i>	Urine which is red colour like <i>manjistha</i> .
6	<i>Raktameha</i>	Urine mixed with blood.

All these six types are palliable due to the incompatibility of the therapies for their treatment(24).

**Table 5: Types of Vataja Prameha(23)**

1	<i>Majjameha</i>	Urine mixed with bone marrow.
2	<i>Madhumeha</i> or <i>ojomeha</i>	Urine mixed with ojas.
3	<i>Vasameha</i>	Urine mixed with muscle fat.
4	<i>Lasika meha</i> or <i>Hastimeha</i>	Urine mixed with lymph.

All these four types are incurable due to their extreme serious nature(24).

**Chikitsa**

The treatment of *Madhumeha* is based on the three important factors.

They are :

- *Ahara*
- *Vihara*
- *Aushada*

**Table 6: Pathya and Apathya ahara according to various Acharyas(25,26)**

	According to Charaka		According to Sushruta		According to Astanga Hridaya		According to Astanga Samgraha	
	Pathya	Apathya	Pathya	Apathya	Pathya	Apathya	Pathya	Apathya
<b>Vegetarian</b>	<i>Mantha</i> <i>Yava</i> Linctus & other varieties prepared with <i>yava</i> . <i>Yavaodana</i> <i>Vatya</i> <i>Apupa</i> <i>Tiktha sakha</i>	Ghee mixed with newly harvested food articles. <i>Pistanna</i> <i>Payas</i> <i>Krisara</i> <i>Vilepi</i> <i>Ikshuvikara</i> Sugar <i>Misri</i> <i>Kshira</i> New wine <i>Dadhi</i> <i>Tila</i>	<i>Tikta and kashay gana saakha with the oil of danti, ingudi</i> <i>Peya and ahara mixed with madhu &amp; Maricha</i> <i>Yusa mixed with hingu, saindhava lavana.</i>	<i>Souviraka</i> <i>Tusodaka</i> <i>Sukta</i> <i>Maireya</i> <i>Sura</i> <i>Asava</i> <i>Jala</i> Milk Oil Ghee <i>Ikshuvikara</i> <i>Dadhi</i> <i>Pistanna</i>	<i>Apupa</i> <i>Satthu</i> <i>Yava</i> Food preparation made of bamboo seeds <i>Khada</i> Old honey i.e., <i>purana madhu</i>	<i>Annapana</i> which increases <i>meda, mutra &amp; kapha</i> . <i>Sura</i> <i>Ikshu</i> <i>Guda</i> Milk & their products. <i>Nava dhanya</i> Food which are <i>madhura, amla, lavana, snigdha, guru, picchila</i> and <i>sitala</i> .	Food prepared with <i>Yava</i> mixed with <i>madhu &amp; amla</i> . <i>Sattu</i> <i>Mantha</i> <i>Apupa</i> <i>Dhanya</i> <i>Laja</i> <i>Vatya of Yava</i>	The food articles which increases <i>kapha, meda</i> and <i>mutra</i> .
<b>Non-veg</b>	Meat soup of <i>Vishkira mamsa &amp; Jangala mamsa</i>	<i>Gramya mamsa</i> <i>Anupa mamsa</i> <i>Oudaka mamsa</i>	<i>Harina mamsa and Jangala mamsa without ghee and amla.</i>	<i>Gramya mamsa</i> <i>Anupa mamsa</i> <i>O u d a k a mamsa</i>			<i>Jangala mamsa</i>	

<b>Cereals/ pulses</b>	<i>Old shali</i> <i>Yava</i> <i>Sasthika</i> <i>Mudga</i> <i>Trinadhanya</i>	Excessive intake of newly harvested– <i>Hayanaka</i> <i>Yavaka</i> <i>Chinaka</i> <i>Uddalaka</i> <i>Mukunda</i> <i>Pramodaka</i> Excessive intake of <i>drava padartha</i> , <i>madhura padartha</i> Newly harvested food articles.	<i>Shali</i> <i>Sasthika</i> <i>Yava</i> <i>Chana</i> <i>Kulattha</i>		<i>Yava</i> Seeds of bamboo <i>Syamaka</i> <i>Trinadhanya</i> <i>Old shali</i> <i>Old sasthika</i> <i>Tila</i> <i>Sarshapa</i>		<i>Sali dhanya</i> <i>Samyak</i> <i>Chana</i>	
<b>Vegetables</b>			Leafy vegetables of <i>tikta gana (patola)</i>		<i>Tikta saaka</i> <i>Triphala</i>		<i>Tikta shaka</i>	
<b>Others</b>	<i>Saarodaka</i> <i>Kusodaka</i> <i>Madhodaka</i> <i>Triphala rasa</i> <i>Sidhu</i> <i>Madhvika</i>		The powder of stool of camel, ass & donkey should be mixed with food.		Food preparation made of <i>yava</i> from the stool of <i>Gaja</i> , <i>Aswa</i> etc. <i>Sidhu made of Ikshu</i> <i>Sar bath of madhu</i>		<i>Sarodaka</i> Water of <i>Darbha</i> Food mixed with powder stool of camel, ass and donkey.	

**Table 7: Various types of Varga and pathya ahara(27)**

Varga	Pathya	Properties
<i>Shuka Dhanya</i>	<i>Purana shali</i> , <i>Yava</i> (barley), <i>Sastika shali</i> (rice), <i>Shyamaka</i> , <i>Godhuma</i>	- <i>Yava</i> is <i>kashaya rasa</i> , <i>laghu</i> , <i>ruksha</i> , <i>lekhana guna</i> it is <i>kapha</i> and <i>medho nashaka</i> . - <i>Yava peya</i> , <i>yava manda</i> , <i>yava saktu</i> and <i>yavarotika</i> are the various preparations. - <i>Godhuma</i> is <i>jeevana</i> , <i>brimhana</i> , <i>vrishya</i> , <i>snigdha</i> and <i>sthairya kara</i> . - <i>Sastika shali</i> is <i>sita virya</i> , <i>snigdha</i> , <i>tridoshagna</i> and <i>sthiratmaka</i> . - <i>Shyamaka</i> is <i>kashaya rasa</i> , <i>laghu</i> , <i>ruksha guna</i> , <i>sita veerya</i> , <i>kaphapittagna</i> , bowel binding property with <i>lekhana</i> it is <i>kaphahara</i> .
<i>Shami Dhanya</i>	<i>Mudga</i> (Green gram), <i>Kulattha</i> ( <i>dolichos biflorus</i> )	- <i>Mudga</i> is <i>kashaya rasa</i> , <i>laghu</i> , <i>ruksha guna</i> and acts as <i>kaphahara</i> . <i>Mudga yusha</i> is the variety of preparation. - <i>Kulattha</i> is <i>kashaya rasa</i> it is <i>kaphahara</i> and reduces constipation.
<i>Mamsa Varga</i>	<i>Aja Mamsa</i> (Goat meat), <i>Gramya Kukkuta Mamsa</i> (Domestic chicken)	- <i>Aja mamsa</i> is not much <i>sheeta</i> , not <i>guru</i> , not <i>snigdha</i> & not <i>abhishyandi</i> . - <i>Gramya Kukkuta Mamsa</i> is <i>Kapha hara</i> , <i>tiktarasa</i> , <i>laghu guna</i> , <i>ushna virya</i>



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<i>Shaka Varga</i>	<i>Patola</i> (Pointed gourd), <i>Shigru</i> (Drum stick), <i>Karavellaka</i> (Bitter gourd), <i>Thanduliyaka</i> (Amaranthus), <i>Koshataki</i> (Ridgegourd), <i>Kakamachi</i> .	- <i>Patola</i> is <i>tikta rasa</i> , <i>laghu guna</i> , <i>ushna veerya</i> and <i>katu vipaka</i> it is <i>kaphahara</i> - <i>Shigru</i> is <i>tikta kashaya rasa</i> , <i>laghu ruksha guna</i> and <i>ushna veerya</i> it is <i>kaphahara</i> - <i>Karavellaka</i> is <i>tikta rasa</i> , <i>laghu guna</i> and <i>katuvipaka</i> so it is indicated in <i>prameha</i> - <i>Tanduliyaka</i> is <i>laghu and ruksha guna</i> it is <i>kaphahara</i> - <i>Koshataki</i> <i>laghu guna</i> and indicated in <i>prameha</i> - <i>Kakamachi</i> is <i>katu tikta rasa</i> and <i>ushna veerya</i>
<i>Phala Varga</i>	<i>Jambu</i> (Gauva), <i>dadima</i> (Pomogranite), <i>kapitha</i> (wood apple), <i>amalaki</i> (Indian gooseberry), <i>tinduka</i> (Indian persimmon), <i>pakva mocha</i> (ripened banana)	- <i>Jambu</i> is <i>kashaya rasa</i> , <i>ruksha guna</i> it acts as <i>kaphagna</i> - <i>Dadhima</i> due to <i>kashaya rasa</i> , <i>Laghu guna</i> and <i>ushnaveerya</i> acts as <i>kaphahara</i> . - <i>Kapitha</i> due to <i>kashaya rasa</i> and <i>laghu guna</i> act as <i>kaphahara</i> . - <i>Amalaki</i> is <i>lavana varjita sarva rasa</i> and <i>laghu ruksha guna</i> it is <i>kaphahara</i> . - <i>Tinduka</i> is <i>kashaya rasa</i> and <i>laghu guna</i> indicated in <i>prameha</i> . - <i>Pakva mocha</i> is <i>kashaya rasa</i> indicated in <i>prameha</i> .
<i>Madhya Varga</i>	<i>Purana Sura</i> (Old wine)	<i>Laghu</i> , <i>srotoshuddhi</i> (clarifies the channels) and digestive

### Discussion

The *ahara* which have predominance of *ap* and *prithvi mahabhuta* and contain *snigdha guna* causes increase of *kapha* & *medas* that lead to *kleda vridhi* is the major cause for the onset of *madhumeha*. *Pathya ahara* is considered as *Aushada* for *madhumeha* person by means of its *rasa*, *guna*, *veerya* and *vipaka* which helps to correct the vitiated *dosha* and *dhatu*. The main objective of the treatment of *madhumeha* is to normalise the blood glucose value, to maintain appropriate body weight and to prevent the further complications. So the diet which can alleviate the vitiated *kapha dosha* & *medho dhatu* and which can able to inhibit the vitiated *vata* should be prescribed to the person affected by *madhumeha*. The diet which consists of all these properties can able to prevent the onset of disease. The *ahara* should be *guru* and *apatarpana janya* i.e., it is rich in fibre content, low caloric value and low glycemic index. Then the blood glucose level does not increase rapidly and it promotes the strength of the person. This is the reason to consider the nutritional diet as *Ahara* as well as *Aushada* in *madhumeha*.

### Conclusion

*Dina charya* and *ritu charya* is the unique concept mentioned in ayurveda. One who follow the principles and lead life according to the regimen mentioned in ayurveda can able to be healthy and have long lasting life. *Madhumeha* is one of the lifestyle disease, which is more prone to those who consume inappropriate nutrition and lead sedentary life. *Madhumeha* can be treated with *pathya ahara* (proper nutritional diet) and *vihara* (regimen) along with the drug intervention. The drug intervention can be minimized if the particular individual able to modify the dietary habit along with regimen especially for the high

risk individuals. Even though *madhumeha* is difficult to cure but proper dietary habit helps to prevent the onset of the disease and its complications.

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