

DIABETES MELLITUS (MADHUMEHA)-AN AYURVEDIC REVIEW

P SRINIVAS*, K PRAMEELA DEVI, B SHAILAJA

Dr Achanta Lakshmi pathi Research Centre for Ayurveda (under CCRAS), VHS Campus, Chennai.

Received: 25 Nov 2013, Revised and Accepted: 26 Dec 2013

ABSTRACT

Diabetes mellitus is becoming fastest considerable diseases in the world. India has being estimated with fastest growing population of Diabetics. It is a metabolic disorder may result in deficiency or dysfunction of the insulin production. The preventive measures in Ayurveda can prevent the disease. The main causative factor is said to be sedentary lifestyle and food habits. In Ayurveda it is described in vataja pramehas, which can be manage conservatively with exercise, diet and internal medication.

Keywords: Diabetes mellitus, Ayurveda, Madhumeha,

INTRODUCTION

Diabetes mellitus has gained gigantic disgrace in recent times as it is fast becoming the world's largest silent killer. India has been projected by WHO as the country with the fastest growing population of Diabetic patients. It is estimated that between 1995 to 2025 diabetic patients in India will increase by 195%. The problem with diabetes mellitus is that it is very difficult to diagnose in the early stages. However, a person stick to an Ayurvedic preventive strategy right from the beginning can easily prevent this disease or control it if already suffering. It is a medical condition in which there is an accumulation of glucose in the urine and blood of the person. This condition is known as hyperglycemia. The word diabetes has been derived from two words, *diabetes* (Greek) which means 'siphon through' and *mellitus* (Latin) which means 'sweetened with honey'. Diabetes mellitus is a metabolic disorder, i.e. it is caused due to the malfunctioning of the pancreas, which is responsible for the production of the hormone insulin.

Pathogenesis – (the manner of development of disease)

The beta cells of the islets of Langerhans in pancreatic gland are responsible for the secretion of the hormone insulin. Among other things, insulin is extremely essential for the proper utilization of the carbohydrates in our body. If insulin is absent due to a metabolic disorder, or if it is not performing its functions properly, then these carbohydrates accumulate in the bloodstream in the form of glucose. The glucose then collects in the urine, which is in fact one of the primary characteristics diabetes mellitus is identified with. Hence, this can be said to be either A deficiency in the production of insulin by the pancreas, or A dysfunction of the insulin produced by the pancreas.

Madhumeha (Prameha) [1]

Ayurvedic remedies for *Madhumeha* (diabetes mellitus) are the oldest among all the available therapies, which includes in the *prameha* category. *Pramehas* are a list of urinary disorders, especially characterized by profuse urination with several abnormal qualities due to doshic imbalances. The main causes of *prameha* are lack of exercise and improper food habits in excess food intake which falls in the category of *ushna*, *snigdha* and *guru* are the primal cause of this disease - Fish, curd are good example. Foods that increase *kapha*, *medhas* and *moothra* are the etiological factors for *prameha*. The word *Prameha* is derived from, *Pra* – means excess, *Meha* – *ksharane* - passing of urine. So *Prameha* is passing excessive urine and turbid in color ('*prabhootha avila mootrata*').

Main causes

Sleeping in day time, lack of exercise, Laziness, Sedentary habits, consumes food and drinks which are cold, unctuous, sweet and fatty items etc, (Fat rich Diet).

Classification [2, 3]

- I. *Prameha* is classified aetiologically in to *Sahaja* (Hereditary) and *Apathya nimittaja* (Unwholesome things – food and exercise etc.,). *Sahaja* means due to *Matapitabheejadoshakruit* (Chromosomal defect from parents).
- II. According to physical management
 - i. *Apatharpana uthaja prameha* describing the lean diabetic
 - ii. *Santharpana uthaja prameha* relating the obese diabetic
- III. According to the doshic causes, these *pramehas* are classified as twenty types :
 - i. *Vataja pramehas* – There are totally four *vataja pramehas*.
 - ii. *Pittaja pramehas* – There are totally six *pittaja pramehas*.
 - iii. *Kaphaja pramehas* – There are totally ten *kaphaja pramehas*.

Out of these, diabetes mellitus is termed as *madhumeha*. It is one of the four *Vataja pramehas*.

Samprapthighatakas [4]: (favorable things for disease)

- Dosh (humur) – *vata, pitta, kapha*
- Dushya – *meda, mamsa, kleda, rakta, vasa, majja, lasika, rasa and ojas*
- Srotas (channel) – *mootravaha*
- Srotodusti – *atipravrutti*
- Agni – *dhatvagni*
- Udhbhavasthana – *kostha*
- Vyaktasthana – *mootravaha srotas* (urinary tract)

Samprapthi (Pathogenesis)[1, 3, 4]

Kapha undergoing increase by the etiological factors, reaches various dooshyas like *rasa* (plasma), *rakta* (blood) etc., As there is a *shaithilyata* (looseness) in the body and it being fluid predominant, spreads all over the body and gets vitiated, while spreading it gets mixed with *medas* (fat – adipose tissue), *mamsa* (muscle) and *kleda* (body fluids). Body fluids which got vitiated draw them to the urinary bladder and produces *prameha*; similarly the *Pitta* affects them, *Vata* also brings about vitiation in them and produce *prameha*.

Premonitory symptoms

In Ayurveda we can find the described of early symptoms of the disease. They are accumulation of dirt on the teeth (mouth, eyes, nose, and ears), a feeling of burning sensation in the palms and soles, stickiness of the skin all over the body, thirst and a sweet taste in the mouth etc., and *moothra madhuryam* (sweetness of urine).

Clinical symptoms [3,4,8,11]

Prabhootha mutrata (Poly uria), Avila mutrata (Turbid Urine) and Medo dushti lakshanas are the main symptoms of prameha.

Table 1: Specific Ayurvedic Symptoms (Parameters)

S. No.	Sanskrit word	English meaning
1.	<i>Malina danta</i>	Tartar in teeth
2.	<i>Hasta pada daha</i>	Burning sensation of hands and feet
3.	<i>Deha chikkanata</i>	Excess glossy/ oily skin
4.	<i>Trishna</i>	Excessive thirst
5.	<i>Madhuryamasya</i>	Feeling sweetness in mouth
6.	<i>Prabhuta mutrata</i>	Excessive urination
7.	<i>Avila mutrata</i>	Turbid urination
8.	<i>Madhu samana varna</i>	Urine having colour of honey
9.	<i>Sweda</i>	Excess perspiration
10.	<i>Anga gandha</i>	Bad body odour
11.	<i>Shithilangata</i>	Flaccidity of muscles
12.	<i>Shayana asana Swapna sukha</i>	Desire for sedentary life
13.	<i>Shitapriyatwa</i>	Desire for cold food & environment
14.	<i>Gala talu shosha</i>	Dryness of palate & throat

The classic symptoms of untreated diabetes are loss of weight, polyuria, polydipsia and polyphagia.

Main symptoms (Modern science) [12]

1	Polyuria (Excessive Urine)
2	Polyphagia (Excessive Hunger)
3	Polydipsia (Excessive Thirst)
4	Exhaustion/Tiredness
5	Body ache
6	Giddiness
7	Polyneuritis (Numbness / Tingling)
8	Visual disturbance

Prognosis [1,14]

Charaka describes the prognosis in three categories

1. **Sadhya** – Curable: Patients who have diagnosed early in the onset, those who are *sthoala* (obese) and the origin of their disease in *apathyaja*.
2. **Yapya** – Palliable : *Pittaja prameha* and certain types of *kaphaja pramehas* are however helps control with treatment (palliative management).
3. **Asadhya** – Incurable: *Vataja* describes the incurable version of prameha and inherited diabetes, a *krisha* (lean) patient who is suffering with *Sahaja* variety.

Treatment [5, 6, 7, 10]

According to Ayurveda the line of treatment of *prameha* is strictly on individual's constitution. It is based on an entire change in the lifestyle of the person, along with medication and diet, the patient is also advised to lead a healthy lifestyle and live an active life. Even mental aspects of the disease are stressed.

The principles of treatment in a diabetic patient may be classified as under

There are two types of diabetics:

1. Sthulya (Obese) 2. Krusha (Asthenic)

1. In Sthulya (Obese - स्थूल प्रमेहि)**अपतर्पणयुक्तिभि**

The treatment must be mainly based on proper utilization of excess fat i.e. he should be give: a). *Shodhana* (purification process), b)

Apatarpana - reduction in body weight by way of diet control or drugs, *Vyayama* (exercise) etc.

- Fasting
- Diet control
- Cleansing therapies – *vamana* – (induction of emesis) *virecana* (induction of purgation) *basti* (applicatin of medicine through the anal route – in specific conditions)
- Physical exercise

2. In krusha (For Lean patient - कृश प्रमेहि)**अन्नपानप्रतिसंस्कृताभि**

Asthenic type the treatment should be mainly based on the line of increasing stamina and vitality by way of tonics (*brumhana*) diet, drugs etc., and the patient should never be given excessive *Langhana* or *Apatarpana* i.e. he should not be starved.

Note: The patient, whether obese or Asthenic, suffers from the complications like *gulma* (tumours), *Kshaya* (Tuberculosis), pain in abdomen etc., he should always be given some food. A diabetic and an obese person generally suffer from excessive appetite and thirst and so some type of nutrition should always be given to them.

Diet

The following are the articles of food which can be given to the diabetes:-

The role of *ahara* and *vihara* are equally or even more important in diabetes to control blood sugar level as well as to prevent complications of this disease. In all classics, *ahara dravyas* are described in detail and they cover all the food groups are : -

1. **Cereals:** *Yava* (*Hordeum vulgare* - Barley) are the best, different preparations of food, prepared from Barley can be given e.g. *Mantha*, *Odana*, *Appopa*, bread, Roti etc. This is the subject of pharmaceuticals and food stuffs. So the method of preparations of barley is not dealt with here. Wheat (*Godooma*) can also be given. Rice: - Ayurveda prescribed old rice (*purana shali*), as one of the cereals, which can be prescribed to the diabetic patients.
2. **Pulses:** *Mudga* (*Vignaradiata* - Green gram), *Chanaka* (*Cicer arietinum* Linn. - Bengal gram), *Kulattha* (*Dolichos biflorus*), *Adhaki* (*Cajanus cajan* - Pigeon pea) etc, can be taken.
3. **Vegetables:** All types of bitter vegetables (*Tikta shaka*) e.g. *Karela* (*Momordica charantia* - Bitter gourd), *Methi* (*Trigonella foenum-graecum* - Fenugreek), *Patola* (*Vietnamese luffa*, *Vietnamese gourd*, or *Chinese okra*), *Rasona* (*Allium sativum* Linn. - Garlic), *Udumbara* (*Ficus racemosa* - Cluster Fig Tree, *Indian Fig Tree* or *Goolar* (*Gular*) Fig), etc. should be given
4. **Fruits:** *Jambu* (*Syzygium cuini* - Black berry), *Amalaki* (*Phyllanthus emblica* - Nepalese/Indian gooseberry, or *Dhatrik* (in Maithili) or *amla*), *Kapitta* (*Limonia acidissima* - Wood Apple, Elephant Apple, Monkey Fruit or Curd Fruit), *Tala phala* (*Borassus flabellifer* - the Asian Palmyra palm, *Toddy palm*, *Sugar palm*, or *Cambodian palm*), *Kharjura* (*Phoenix sylvestris* - Date Sugar Palm), *Kamala* (*Nelumbo nucifera* Indian lotus, sacred lotus, bean of India, or simply lotus.), *Utpala* (*Nymphaea Stellata*) etc., can be allowed to take.
5. **Seeds:** *Kamala*, *Utpala* seeds can be allowed to take.
6. **Flesh:** *Harina mamsa* (Deer flesh), *Shashaka mamsa* (Rabbit), birds like *Kapotha*, *Titira* etc., can be taken.
7. **Liquor:** *Old sura* (old wine) may be given.
8. **Oils:** Mustard oil (*Sarshapa taila*) is best. *Ingudi* (*Balanitis aegyptiaca*) *Ghritha* may be used in *pitthaja prameha*.

But according to Ayurveda one should start with light diet (*laghu bhaksha*, *laghu ahara*) and then gradually increase the quantity of food. It is a rule that one should keep complete attention on the condition of Agni i.e. digestion. Diabetes being a disease of deranged

metabolism, special attention should be kept on the condition of digestion and metabolism.

Exercise [7]

Hard exercises are prescribed for diabetics and obese persons. This is meant for proper utilization of the fat and consumes the glucose in the body. The methods can be changed in the present times according to the habitat (desha) and time (kala). But the exercises are very necessary. Some of the hard, productive exercises prescribed by Shushruta are as under:-

1. *Vyayarma* (exercises) (2) *Niyuddha* (fighting) - (3) *Kreeda* (games) (4) *Gajacharya*, turagacharya, rathacharya, padacharya to ride an elephant, horse, cart riding and walking etc. Over and above mentioned heavy exercises, there are other exercises according to the financial position and also according to their community.

They are:

- For poor class, the diabetic should walk about 100 miles, bare footed, not staying more than one night in the settle place, should eat only the things available by begging and keeping restraint on his sense organs (adopt the life style of *Muni/Sage*).
- For rich diabetics- they should ate only *Shyamaka*, *Kodrava* etc., *Amalaka*, *Kapitha* etc., and reside with the cattle (domestic animals). The food stuff for them should be *Ruksha* (free from fat) or they may stay with the cows and eat the above with the urine and faeces of the cow compare this with the character in *Raghuvamsha*.
- For other either farming or digging a well etc. From the above, it will be seen that the exercise prescribed by the Acharyas are very hard and productive. In short for diabetics exercise serves the purposes of (1) Utilizing the fat and (2) Metabolizing sugar fat and carbohydrates, and also proteins. In the present day civilization, when these types of exercise are not possible, one should regularly play some out- door games, do some productive work, or the best is different type yogic exercises.
- Yoga improves all sorts of metabolism in the body. So diabetics should perform different types of yoga. Yoga will definitely help diabetes mellitus. Yoga now-a-days has attracted the attention of Western people.

Drugs

[7,8,9]

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

- Guduchi swarasa* (*Tinospora cardifolia*) – 10ml twice a day with honey (A.H.Ci 12/6)
- Amalaki Curna* (*Phyllanthus emblica*) – 6 gm twice a day with honey (A.H.Ut. 40/48)
- Karavellaka Phala Curna* (*Momordia charantia*) – 3 gm twice a day with water (D. V. P. V. Sharma. Voll.II. page – 685)

Compound preparations

- T. Chandraprabha*, 500 mg twice a day with water/milk (S.S.Ma.K.)
- T. Vasant kusumakara Ras*, 125 mg twice a day with Honey (R. S. Rasayana Vajikarana Adhikara)
- Brihat vangeswara Rasa*, 125 mg twice a day with *Ajadugdha/Godugdha* (B. R. Prameha cikitsa)
- Nisamalaki Vati*, 500 mg trice a day with *Triphala Kasaya* (A. H. Prameha Cikitsa)
- T. Mehari Ras* (*Vangabhasma*, *parada bhasma* and *Rasasindura*) - 125 mg twice a day with *Ajadugdha/Godugdha*.
- T. Meghanada Rasa* (*Purified parada*, *gandhaka*, *oxides of kanta loha*, *teekshna loha* and *swarnamakshika*, *shilajatu*, *manashila*,

tripphala and *haridra*. Prepared with *bhringaraja juice*), 125 mg twice a day with *Ajadugdha/Godugdha*

- Mauktika kamadugha*, 125 mg twice a day with *Ajadugdha/Godugdha*
- Praval bhasma*, 100 mg twice a day
- Mehmudgara* (BR), 125 mg twice a day
- T. Suvarnamalini vasant ras* (Ay.SS), 125 mg once a day
- Tarakeshwara Rasa* (BR), 125mg twice a day with *Ajadugdha/Godugdha* (page 65 – *Impcops Therapeutic index*)
- T. Suvarna vangaraja*, 125 mg twice a day (Dr Subhas Rana KC text book)
- T. Arogyavardhini*, 500 mg twice a day
- Trivanga bhasma*, 100 mg twice a day
- T. Apurvamalini vasanta*, 100 mg twice a day (BR)

Medicated Ghee

- Dhanvantara ghrita* 5 to 10 gm/day - (Bhavapraksh page 496)
- Dadimadya ghrita* 5 to 10 gm/day - (Bhavapraksh page 494)
- Sinhamrita ghrita* 5 to 10 gm/day - (Bhavaprakash page 496)

Avaleha

- Saraleha:** (Bhavaprakash): Prepare decoction of *asana* (*Pterocarpus marsupium*), *khadira*, *babbula* and *bakula* (*Mimusops elengi*). 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.
- 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- apathy* (wholesome and unwholesome) may be conveniently decided by the physician on case to case basis on Ayurvedic parameters.

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 (*deerga jeevanam*), healthy (*sukhayu*) and will be useful to the society (*hitayu*).

REFERENCE

- Madhava Nidanam*;Madhavakara, Translated into English by Dr. K. R. Srikantha Murthy; Chaukamba Oriental Publisher & Distributor, Varanasi; Krishnadas Academy; 1987; Chapter - 33; Page No.- 116, 119; Sloka - Referred -20-36; Roga Vinischayam.
- Sarangadhara Samhita*: By Sarangadhara, Translated into English by Dr. K. R. Srikantha Murthy; Chaukamba Oriental Publisher & Distributor, Varanasi. ; 1984; 1)Pradhama Kanda - Chapter-7. 2)Madhyama Kanda - Chapter - 2; Page No.- 12 ; 1)37 2)69,71,108, 171.; Dravya- Kwatha, Guggulu etc.
- Ashtanga Hridayam- Nidanasthanam*; Vagbhata, Translated into English by Dr. K. R. Srikantha Murthy; Chaukamba Oriental Publisher & Distributor, Varanasi; Krishnadas Academy; 1992; Vlo -II; Chapter – 10; Page No.- 92-99; Prameha - Sankya, Nidana, Rupas, Samanya Lakshanas, Upadravas etc.
- Yogaratanakaram- Pramehaprakaranam*, By Dr. Indeqdev Thripathi & Dr. Dayashanker Thripathi, Krishnadas Ayurveda Series 54, Chaukamba Krishnadas Academy, Varanasi – 1998; Chapter - Prameha Nidana; Page No. – 622 to 641.

5. Charaka Chikitsa sthanam; By Agnivesha; Translated into English by Dr. Ram Karan & Vaidya Bhagwan Das; Chaukamba Sanskrit Series, Varanasi & Krishnadas Academy; 2001 ;
6. Sushruta Samhita : By Kaviraj Kunjalal Bhashagraha; Chaukamba Sanskrit Series, Varanasi. 1963; Vol- II; Chapter – 13; Page No.- 286-391 ; The Medical treatment of Madhumeha.
7. Ashtanga Hridayam- Chikitsa sthanam ; Vagbhata, Translated into English by Dr.K.R. Srikantha Murthy ; Chaukamba Oriental Publisher & Distributor, Varanasi; Krishnadas Academy ; Section - 4; Chapter – 12 ; Page No.- 383-390 ; Chikitsa
8. Basavarajeeyam – 9th Chapter, Page – 433.
9. P.V. Sharma Dravyaguna Vijnana - Part -II; Chaukamba Vidya bhavan, Chowk, Banaras -1956
10. A Practical hand book of Panchakarma Procedures – CCRAS 2009; Chapter – Vamana; Page – 17; Chapter – Virechana; Page – 21; Slokas – Astanga Hridaya Sutrasthana – 18 – 1,2 ; 8,9.
11. The Principles and Practice of Kaya Chikitsa: Dr. S. Suresh Babu ; Chaukamba Oriental Publisher & Distributor, Varanasi; Krishnadas Academy; 2007; Volume – III; Page No.- 100-109; Endocrine Diseases and Medicines.
12. Davidson's Clinical Medicine: Edited by John Macleod ; 1984, Reprint - 1985,1986; Chapter - 12- Endocrine & Metabolic Diseases; Page No -457-465; Diabetes Mellitus
13. A Text book of Kayachikitsa: Dr. Subhash Rande and Dr. Sunanda Ranade; Chaukamba Oriental Publisher & Distributor, Varanasi; Krishnadas Academy; Chapter - 4 - Medovaha Srotas – Prameha; Page No.- 441-451; Prameha
14. Bhavaprakash: Bhavamishra; Chaukamba Oriental Publisher & Distributor, Varanasi; Volume - II, Chapter – 38; Page No.- 484, 497, 498; Sloka - Referred 107; Medicines.
15. Therapeutic index (Siddha, Ayurveda and Unani) - by Indian Medical Practitioners Co operative pharmacy & stores, Chennai.