

AN AYURVEDIC APPROACH TO DIABETES MELLITUS- A REVIEW ARTICLE

Kumar Sanju¹ Mishra Pramod kumar² Soni Anamika³ Sharma Brahmanand⁴

¹**MD Scholar** PG Department of Kayachikitsa, University College of Ayurveda, Dr. S. R. Rajasthan Ayurveda University, Jodhpur, Rajasthan, India

²**MD Ph.D. (Ay) Associate Professor & HOD** PG Department of Kayachikitsa, University College of Ayurveda, Dr. S. R. Rajasthan Ayurveda University, Jodhpur, Rajasthan, India

³**MD (Ay.) Assistant Professor** PG Department of Kayachikitsa, University College of Ayurveda, Dr. S. R. Rajasthan Ayurveda University, Jodhpur, Rajasthan, India

⁴**MD Ph.D. (Ay) Assistant Professor** PG Department of Kayachikitsa, University College of Ayurveda, Dr. S. R. Rajasthan Ayurveda University, Jodhpur, Rajasthan, India

ABSTRACT

Diabetes Mellitus is one of the most common non-communicable diseases globally. It emerged as a public health problem in India. Diabetes mellitus is a chronic metabolic disorder due to either insulin deficiency or due to peripheral tissue resistance to the action of insulin. In *Ayurveda*, this condition can be explained as *Madhumeha*. It is one of the types of *Prameha* where the patient passes honey like sweet urine (Raised level of sugar in urine & Hyperglycemia). The main causative factor is said to be sedentary lifestyle, excessive intake of sweet, non-vegetarian, dairy product, Jaggery (cane sugar preparations) and heavy & excess meals. In Ayurveda it is described in *Vataja Pramehas*, and can be managed conservatively with exercise, diet and medication. Drugs like *Gudmar* (*Gymnema sylvestre*), *Asana* (*Pterocarpus marsupium*), *Shilajit* (*Purified Bitumen*), *Khadir* (*Acacia catechu*), *Lodhra* (*Symplocos racemosa*), *Guduchi* (*Tinospora cordifolia*), *Jambu* (*Syzygium cumini*) are effective in controlling hyperglycemia.

Keywords: Diabetes, Profound thirst, Burning sensation in palm & sole, Sedentary-lifestyle, Turbid Urine.

INTRODUCTION

Diabetes mellitus is a metabolic disorder of multiple etiology, characterized by chronic hyperglycemia with disturbances of carbohydrate, fat and protein metabolism resulting from defects in insulin secretion, insulin action, or both.¹ *Ayurvedic* remedies for *Madhumeha* (Diabetes mellitus) are the oldest among all the available therapies, which includes in the *Prameha* category. *Prameha* are a list of urinary disorders, especially characterized

by profuse urination with several abnormal qualities due to imbalance of *Doshas*. In *Madhumeha* the urine becomes (sweet and smells) like honey. It is of two distinct types, one due to the aggravation of *Vata* on account of the *Dhatukshya* and the other due to *Kapha-meda Avarana* (Blockage of channel along with *Vata prakopa*). When there is condition of *Avarana* (blockage of the channels/ activity) there are the additional symptoms of the vitiation of the par-

ticular *Dosha* without any other apparent cause. Sometimes the symptoms are mild and suddenly they appear in severe form which is difficult to cure.

Etiology- Enjoying sedentary habits and the pleasure of sleep excessively, too much use of yoghurt and its preparation, meat juice of domestic, aquatic and swampy animals, milk and its preparation, newly harvested cereals, new/ fresh wines, preparations of jaggery (cane sugar preparations) and all other *Kapha*-aggravating factors are the causes of the diabetes syndrome.²

Pathogenesis (Samprapti)- *Samprapti* of *Madhumeha* is best described by *Acharya Vagbhata*. He said *Madhumeha* can originate in two ways-

1. By the aggravation of *Vata* caused by *Dhatukshaya*.
2. By the obstruction of *Vata* caused by *Doshas* covering it.

Madhumeha which is caused by *Dhatukshaya* manifests as thin and asthenic individual due to loss of *Oja*. All this is *Ojakshaya* meaning an imbalance in *Ojus*. In *Margavaranjanya Madhumeha* the vitiated *Kapha* and *Meda* obstruct the passage of *Vata*. The obstructed *Vata* is vitiated again and carries *Ojus* to *Basti* thus manifests *Madhumeha*.³

As per Ayurveda according to the potency of particular feature of etiology, *Dosha* (innate pathogenic factors) and *Dushyas* (substratum of pathology), response occurs in the form of non-manifestation or otherwise of the disorders. When these three factors do not combine together or if combined after a long time or in weakened state, disorder will not be there, or it will manifest lately, or in a mild form or without all the said symptoms. On the contrary, the result will be contrary. Thus is said the cause of response in the form of non-

manifestation or otherwise of all disorders.⁴

Premonitory Symptoms⁵ –There premonitory symptoms are- feeling of burning in the palms and soles, body (skin) becoming unctuous and slimy, heaviness in body, urine is sweet, bad in smell and white in color, stupor, debility, profound thirst, dyspnea, more accumulation of dirt in the palate, throat, tongue and teeth, hairs of the head adhering to one another and more growth of the hairs and nails.

Clinical Feature⁶- The general feature of the diabetes syndrome is the passage of a profuse and/ or turbid urine, the urine becomes like honey and the entire body becomes very sweet.⁶ *Sushrutacharya* also says that *Sahajameha Rogi* are usually *Krishna* (Thin built) while *Apathyanimittaja Rogi* are usually *Sthula* (Obese).

Classification of Diabetes Mellitus⁷:-

Type- 1 Diabetes Mellitus- Type 1 diabetes, formerly called juvenile diabetes, is usually diagnosed in children, teenagers and young adults. Type 1 diabetes may develop in adults. This is an autoimmune disease causing specific destruction of *Beta*-cell of pancreas which result in an absolute insulinopaenia.

Type- 2 Diabetes Mellitus- Type 2 diabetes, formerly called adult onset diabetes, is the most common form and has an insidious onset. It is commonly seen in adults, but can occur even in childhood. Weight loss is uncommon unless hyperglycaemia is severe while ketosis is rare. Familial inheritance is very common. This form of diabetes usually begins with insulin resistance and initially there is a counter regulatory hyperinsulinaemia. With time, the pancreas loses its ability to secrete enough insulin in response to meals and clinical diabetes develops.

Gestational Diabetes- Gestational diabetes is carbohydrate intolerance resulting in hyperglycaemia of variable severity with onset or first recognition during pregnancy.

Other types of diabetes-

A number of other types of diabetes exist which develop due to:

- Genetic defects of the beta-cell
- Genetic defects in insulin action
- Disease of the pancreas
- Excess amounts of counter regulatory hormone
- Infection
- Rare autoimmune disorders
- Genetic syndromes associated with diabetes

Criteria for the diagnosis of DM:-

Fasting:-

- Normal- < 110 mg/dl
- Impaired fasting glucose- > 110 and < 126 mg/dl
- Diabetes mellitus- \geq 126 mg/dl

2-hour post load -

- Normal- < 140 mg/dl
- Impaired glucose tolerance- > 140 and < 200 mg/dl
- Diabetes mellitus- > 200 mg/dl with symptoms

Investigation:-

- O.G.T.T. (Oral Glucose Tolerance Test)
- Lipid profile
- Liver Biochemistry
- Glycosylated Haemoglobin (GHb)
- Blood glucose-Random, Fasting, Post-prandial
- Urine tests-Urine testing for glucose is still widely used.
- Proteinuria is a reflection of the development of renal complication.

Complications (Upadrava):-

Improper digestion, Loss of taste, Vomiting, Burning sensation, Thirst, Sour belching, Fainting, Loss of sleep, Tremors, Emaciation, Dyspnea, Too much elimination of urine, Troubled by appearance of deep seated *Pidikas* (Eruption), Erysipelas, Feeling of heaviness of the body.⁸

1. Metabolic complication- Ketoacidosis, Hyper osmolar coma
2. Infective- Bacterial and fungal infections of the skin, mucosa, soft tissues, bone, urinary tract and lungs.
3. Late complication- Atherosclerosis- Coronary heart disease, cerebrovascular disease and Peripheral vascular disease. Cataract, Diabetic ulcer (Diabetic foot), Infection, Microangiopathy, Nephropathy, Retinopathy, Dermopathy, Neuropathy- Polyneuropathy, mononeuropathy, radiculopathy amyotrophy, autonomic neuropathy.
4. Complications of therapy- Hypoglycemia, Insulin resistance, Insulin allergy, Lipodystrophy, Lactic acidosis, Depression of bone marrow
5. Maternal and foetal disorder in G.D.M.⁹

Prognosis (Sadhya-Asadhyata) Incurability- The diabetes syndrome since birth due to a genetic defect is said to be incurable. All stage of the diabetes syndrome, if not treated properly lead to severe complication like CRF (Nephropathy), Retinopathy and multiple organ failure are incurable in due course of time and then become incurable.¹⁰

Treatment¹¹- In general Type 1 Diabetes mellitus i.e. *Krishna Pramehi* patients are advised to have *Bringham* medication (Anabolic) as well as a diet which increase *Dhatus* in the body.

In type 2 Diabetes, Obese diabetic patients (*Apathyanimitaja Rogi*) with optimal body strength having intense increase of

Doshas, Samshodhan (purification) of the body advocated.

1. *Snehana* (preparation of oil internally & externally)
2. *Shodhana* (Purification therapy under three category)
 - a. *Virechana*
 - b. *Vasti* (*Asthapana/Niruha*)
3. *Shamana* with drugs
4. Exercise and life style modification & following regular regimen of exercise, *yogasana*, *pranayama* and regular food & sleep, following *Ritucharya* & *Dincharya*.

***Basti* in appropriated conditions¹²-**

Though the *Basti* treatment is contra indicated in treatment of *Prameha* because it again aggravate the disease, but some special *Bast* is are indicated for *Prameha* in different situations.

***Asthapana Basti*:-**

- *Kashaya* of *Sursadi* gana is indicated.
- *Panchtikta Basti*- *Basti* prepared with the *Kwatha* of *Patola*, *Nimba*, *Bhunimba*, *Rasna* and *Saptparna*.
- *Vit-Khadir Basti*- *Basti* prepared with the *Kwath* of *Somvalk* (*Vit-Khadir*) is indicated for *Prameha*.

Anuvasana Basti- It is contraindicated in *Prameha* then it causes excitation of *Doshas* leading to the manifestation of *Udara Roga*. For this purpose, the oleated patient should be given various recipes described in *Kalpa* section with a view to eliminating excreta through both upward and downward tracts. After the excreta are eliminated from his body, the patient should be given *Santarpana* or refreshing therapy because *Apatarpana* (fasting) therapy in this condition may produce *Gulma*, consumption, pain in phallus and urinary bladder including kidneys and retention of urine, such patients should be

given *Santarpana* therapy depending upon their power of digestion.

Herbal medications helpful in *Madhumeha* (Diabetes mellitus)¹³-

Musta (*Cyperus rotundus*), *Daruharidra* (*Berberis aristata*), *Arjuna* (*Terminalia arjuna*), *Khadir* (*Acacia catechu*), *Lodhra* (*Symplocos racemosa*), *Guduchi* (*Tinospora cordifolia*), *Patol* (*Trichosanthe dioica*), *Vata* (*Ficus bengalensis*), *Udumbar* (*Ficus glomerata*), *Gudmar* (*Gymnema sylvestre*), *Asana* (*Pterocarpus marsupium*), *Shilajit* (*Purified Bitumen*), *Kumbha* (*Leucas cephalotes*) and *Nimba* (*Azadirachta indica*).

Following prepration may be used judiciously in a patient of *Prameha* – *Madhumeha* for effective management¹⁴-

- (a) *Ghrita* & *Taila*- *Trikantakdya Sneha*, *Dadimadhya Ghrita*, *Shalmali Ghrita*, *Dhanvantar Ghrita*, *Triphala Ghrita*, *Prameha mihir Taila*.
- (b) *Asava*- *Arista*- *Lodhra Asava* or *Madhva Asava*, *Datya Asava*, *Devdarvadi Arista*.
- (c) *Leha* (Paste)- *Salsaradi leha*, *Kusha Avleha*, *Vanga Avleha*.
- (d) *Udaka*- *Sarodaka*, *Kushodaka*, *Madhukodaka*, *Sidhu*, *Madhvika*.
- (e) *Vati* (Tablet)- *Trikatukadya Modaka*, *Shiva Gutika*, *Shilajatvadi Vati*, *Chandraprabha Vati*, *Indra Vati*, *Gokshuradi Vati*, *Aarogyavardhini Vati*.
- (f) *Churna* (powders)- *Nyagrodadi Churna*, *Eladi Churna*, *Karkatbijadi Churna*, *Triphala Churna*.
- (g) *Rasa/ Bhasam*- *Vasantakusumakar Rasa*, *Brihta Bangeshwar Rasa*, *Suvarna Banga*, *Apurvamalinivasant Rasa*, *Harishankar Rasa*, *Panchanana Rasa*.
- (h) *Kwatha* (Decoction)- *Phala trikadi Kwath*, *Darvyadi Kwath*, *Vidangadi Kwath*, *Triphaladi Kwath*.

Diabetes can be controlled by giving comprehensive attention to three aspects¹⁵:

- (1) *Ahara* (Diet)
- (2) *Vihara* (Exercise)
- (3) *Oushadha* (Medicine)

The role of *ahara* and *vihara* are equally or even more important than drugs in order to control blood sugar level as well as to prevent complication of this disease.

Cereals-*Yava*–Barley (*Chenopodium album*), *godhooma*- Wheat, *Shyamaka*, *ko-drava*, *bajara*.

Pulses- Mainly beans- *Mudga* (*Green-gram*), *Chanaka* (*Bengal gram*).

Vegetables- *Thiktha shakas*, *Methika* (*Trigonella foenum-gracum*), *Nimba* (*Azadirachta indica*), *Karavella* (*Momordica charantia*), *Patola* (*Trichosanthes anguina*), *Rasona* (Garlic), *Udmbara* (*Ficus racemosa*).

Fruits- *Jambu* (*Syzygium cumini*), *Talaphala* (*Borassus flabellifer*), *Kharjura* (*Phoenix sylvestris*), *Bilwa* (*Aegle marmelos*).

Pathya and Apathya¹⁶- *Shyama*, *Kodrava*, *Uddalika*, *Godhum*, *Chanaka*, *Aadak* and *Kullatha* which are old- are suitable to be used as foods by patients of *Madhumeha* (Diabetes). Vegetables of bitter taste (*Tik-ta*), meat of animals and eggs of birds of deserts like regions (*Jangala mamsa*), boiled *Yava* and its preparations, *Mudag*, *Shali*, and *Shastika* are all suitable as foods.

Shauviraka (fermented gruel), *Sura* (beer), Buttermilk, oils, milk ghee, *jaggery*, foods processed with sours, sugarcane, juice, food prepared from flour, meat of animals of marshy regions should be avoided from use.

Yoga - 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. Common *Aasana* that can be very effective in Diabetes are *Pad-masan*, *Shalabhasan*, *Mayurasan*, *Surya-namaskar*, *Dhanurasan*.¹⁷

Exercises- Brisk walking, jogging, bicycling, swimming, playing badminton & tennis.

CONCLUSION

Diabetes mellitus is a metabolic disease of multiple aetiology and described as *Madhumeha* in *Ayurvedic*. Two type of clinical presentation are seen *Krishha Pramehi* & *Sthula Pramehi* as type-I & type-II diabetes respectively. Modern therapeutics has many limitation but Ayurvedic principles of management can help the patient to have better blood sugar control and routine life. Various researches on drugs like *Gumara*, *Giloya*, *Vijayasara*, *Haritaki*, *Manjistha* & formulation have shows promising results in patient. In addition life style modification with adopting proper food habits, yoga & exercise have very important role in the management of diabetes mellitus.

REFERENCES

1. API Text book of medicine Munjal YP et.al. (Vol.1) published by The association of physician of India 9th edition 2012; page no. 321.
2. *Madhava Nidana Madhavkara*; Vol.-2; (English translation); Singhal G.D. et. al.; Chaukhamba Sanskrit pratisthan, Delhi; Page no.565.
3. Clinical Evaluation of Madhumehari Vati in the management of Madhumeha W.S.R. to Diabetes Mellitus-Type 2 Scholar Dr. Kumar Naresh, Year-2014,Page-36.
4. Caraka- Samhita Agnivesha; English translation; Sharma P.V. (Vol. 1);

- Chaukhambha Orientalia Varanasi; Ninth edition 2005; Page.no.269.
5. Charaka samhita (English Translation) Sharma P.V.; Vol. 1; Chaukhamba Orientalia Varanasi; Page no. 275.
 6. *Madhava Nidana Madhavkara*; Vol.-2; (English translation); Singhal G.D. et al.; Chaukhamba Sanskrit pratisthan, Delhi; Page no.581.
 7. API Text book of medicine Munjal YP et.al. (Vol.1) published by the association of physician of India 9th edition 2012; page no. 321.
 8. Bhavprakash of Bhavmishra, Prof. Murthy K.R. Shrikantha,(vol.2) Krishnadas Academy, Varanasi, First edition 2000, Page no. 486.
 9. The Principles and practice of Kayachikitsa; Dr. Babu S. Suresh; vol-3; Chaukhamba orientalia, Varanasi; Edition: 2009; Page no.-105.
 10. *Madhava Nidana Madhavkara*; Vol.-2; (English translation); Singhal G.D. et al.; Chaukhamba Sanskrit pratisthan, Delhi; Page no.580.
 11. The Principles and practice of Kayachikitsa; Dr. Babu S. Suresh; vol-2; Chaukhamba orientalia, Varanasi; Edition: 2007; Page no.-397.
 12. Clinical Evaluation of Madhumehari Vati in the management of Madhumeha W.S.R. to Diabetes Mellitus-Type 2 Scholar Dr. Kumar Naresh, Year-2014, Page-36.
 13. Bhavprakash of Bhavmishra, Prof. Murthy K.R. Shrikantha,(vol.2) Krishnadas Academy, Varanasi, First edition 2000, Page no. 491.
 14. Kaya chikitsa, Sharma Ajay Kumar (vol.2), Chaukhambha Orientalia, Varanasi, Reprint edition 2009; page no.903.
 15. The Principles and practice of Kayachikitsa; Dr. Babu S. Suresh; vol-2; Chaukhamba orientalia, Varanasi; Edition: 2007; Page no.-399-400.
 16. Bhavprakash of Bhavmishra, Prof. Murthy K.R. Shrikantha,(vol.2) Krishnadas Academy, Varanasi, First edition 2000, Page no. 489.
 17. The Principles and practice of Kayachikitsa; Dr. Babu S. Suresh; vol-3; Chaukhamba orientalia, Varanasi; Edition: 2009; Page no.-109.

CORRESPONDING AUTHOR

Dr. Sanju Kumar

MD Scholar

PG Department of Kayachikitsa

University College of Ayurveda

Dr. S. R. Rajasthan Ayurveda University,

Jodhpur, Rajasthan, India

Email: sanjusaini14@gmail.com

Source of support: Nil

Conflict of interest: None Declared