AN AYURVEDIC APPROACH TO DIABETES MELLITUS- A REVIEW ARTICLE

Kumar Sanju¹ Mishra Pramod kumar² Soni Anamika³ Sharma Brahmanand⁴

¹MD Scholar PG Department of Kayachikitsa, University College of Ayurveda, Dr. S. R. Rajasthan Ayurveda University, Jodhpur, Rajasthan, India
²MD Ph.D. (Ay) Associate Professor & HOD PG Department of Kayachikitsa, University College of Ayurveda, Dr. S. R. Rajasthan Ayurveda University, Jodhpur, Rajasthan, India
³MD (Ay.) Assistant Professor PG Department of Kayachikitsa, University College of Ayurveda, Dr. S. R. Rajasthan Ayurveda University, Jodhpur, Rajasthan, India
⁴MD 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 (canesugar 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-med 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 (canesugar preparations) and all other *Kapha*-aggravating factors are the causes of the diabetes syndrome.

**Pathogenesis (Samprapti)**- *Samprapti* of *Madhumeha* is best described by Acharya Vagbhatta. 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*.

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 all disorders.

**Premonitory Symptoms**- There premonitory symptom 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 Feature**- 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. Sushrutacharya also says that *Sahajameha Rogi* are usually *Krisha* (Thin built) while *Apathyanimittaja Rogi* are usually *Sthula* (Obese).

**Classification of Diabetes Mellitus**:-

- **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- ≥ 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.

1. Metabolic complication- Ketoadicosis, 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.

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.

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

In type 2 Diabetes, Obese diabetic patients (Apathyanimittaja 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 & Dinacharya.

Basti in appropriated conditions

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

Astapana 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 oleted 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)3 - Musta (Cyperus rotundus), Daruharidra (Berberis aristata), Arjuna (Terminalia arjuna), Khadir (Acacia catechu), Lodhra (Smplocos 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 management:
(a) Ghrita & Taila- Trikantakdya Sneha, Dadimadhya Ghrita, Shalmali Ghirta, Dhanvantar Ghirta, Triphala Ghirta, Prameha mihir Taila.
(b) Asava- Arista- Lodhra Asava or Madhva Asava, Datya Asava, Devedavadi 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, Panchanama Rasa.
(h) Kwatha (Decoction)- Phala trikadi Kwath, Darvayadi Kwath, Vidangadi Kwath, Triphaladi Kwath.
Diabetes can be controlled by giving comprehensive attention to three aspects:\(^16\):

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, kodrava, bajara.

Pulses- Mainly beans- Mudga (Greengram), 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 maramelos).

Pathya and Apathya\(^16\) - 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 (Tikta), 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 Padmasan, Shalabhasan, Mayurasan, Suryanamaskar, 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 Krishna Pramehi & Shula 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, Manjishta & 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

2. Madhava Nidana Madhavkara; Vol.-2; (English translation); Singhal G.D. at. 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);
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. at. al.; Chaukhamba Sanskrit pratisthan, Delhi; Page no.581.


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. at. 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.


15. The Principles and practice of Kayachikitsa; Dr. Babu S. Suresh; vol-2; Chaukhamba orientalia, Varanasi; Edition: 2007; Page no.-399-400.


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