

**A Glimpse On Management of Diabetes Mellitus In *Ayurveda***
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**Abstract:**

Lifestyle disorder is a general term given to all diseases which arises because of unhealthy lifestyle. Diabetes is the most common among lifestyle disorders affecting people worldwide. Our country India has fastest growing population of diabetics. As per current statistics the number of diabetics is likely to increase from 15 million in 1995 to 57 million by the year 2025. This will ultimately make our country having maximum number of diabetic patients in the world.

We have traditional wealth of number of herbs and other timely tested medicines which has potency to control diabetes if used properly. This paper is an honest effort to enumerate ancient treasure of anti-diabetic treatment modalities mentioned in *Ayurveda* and its efficacy in context to modern era. Aim of this article is to review information regarding diabetes mellitus, its types, causative factors, prognosis and to discuss treatment aspects using holistic system of medicine i.e., *Ayurveda*.

In this paper overall management module of diabetes viz., medicine, *Pathya* and *Apathya* are precisely discussed as per *Ayurveda*.

**Keywords-**

*Madhumeha*, herbal drugs, lifestyle disorder, hyperglycaemia.

**Introduction:**

Rapid socio-economic development and “Coca-colonization” (a term used to define the impact of western societies on traditions, social and cultural habits of developing countries) have resulted in a drastic change in the way of life from traditional to modern.<sup>1</sup>

Diabetes is the most common among lifestyle disorders affecting people worldwide. Our country India has fastest growing population of diabetics. The shift from the primarily diurnal standard of living of our ancestors to unhealthy dietary habits and physical inactivity are few major contributors in the growing incidence of type 2 diabetes. India is one among the leading countries with maximum number of diabetic population with a current figure of 40.9 million, followed by China, USA,

Russia, Germany, Japan, Pakistan, Brazil, Mexico and Egypt. As per current statistics the number of diabetics is estimated to increase from 15 million in 1995 to 57 million by the year 2025.<sup>2</sup> Further it is predicted that by 2030 diabetes mellitus may affect up to 79.4 million individuals in India.<sup>3</sup>

These constantly increasing figures are enough to realise the severity of this problem. Although, different types of insulin and various oral hypoglycaemic agents are available for the treatment of diabetes but they have prominent side effects. The high cost of treatment and potential for adverse effects has led a number of researchers to focus their attention on the traditional medicines. According to ethno-botanical information, about 800 plants may possess anti-diabetic potential.<sup>4</sup>

Hence, treating the disease effectively with natural medicine (without any side effects) and advising to adopt a lifestyle which will prevent the disease and its complications should be the prime concern of today's healthcare providers.

#### **Aims and objectives-**

Aim of this article is to review the information regarding diabetes mellitus, its types, causative factors, prognosis, treatment aspects and provide the solution using holistic system of medicine i.e., *Ayurveda*.

#### **Material and Methods –**

For writing this paper classical books on *Ayurveda*, modern literature, available research updates and scientific information available on internet were searched and analysed regarding diabetes mellitus and its management. Materials related to diabetes, anti-diabetic *Ayurvedic* drugs and other relevant

topics have been collected. Recent researches available in various popular journals have also been reviewed while writing this article.

#### **Literature Review -**

**Types of Diabetes-** There are two type of diabetes.

1. Type I Diabetes Mellitus (IDDM) - Juvenile onset diabetes/insulin dependent diabetes mellitus (IDDM)
2. Type II Diabetes Mellitus (NIDDM)- Adult onset diabetes/non-insulin dependent diabetes mellitus (NIDDM).<sup>5</sup>

#### **Diabetes mellitus -**

It is a metabolic disorder having multiple aetiologies; characterized by insulin resistance, relative insulin deficiency and hyperglycaemia. Unhealthy dietary habits and physical inactivity has a major share in the increasing prevalence of type 2 diabetes.

Basically diabetes is a condition characterised by inability to produce or use insulin correctly. Most of the food that we eat is broken down by the digestive juices into a simple sugar called glucose. After digestion, the glucose passes into circulation where it becomes available for body cells to be used for growth and energy. Insulin is must for the glucose to get into the cells. It is a hormone produced by the pancreas. When we eat food, the pancreas is supposed to produce the right amount of insulin to transport the glucose from blood into our cells. If pancreas doesn't secrete adequate insulin or the insulin doesn't work properly; the sugar cannot move into the cells. Ultimately it will stay in the blood, which makes high levels of glucose in the blood; a condition called as

hyperglycaemia. As a result, glucose builds up in the blood and after renal threshold for blood glucose level i.e., 180mg/dl it overflows into the urine. This condition is called as glycosuria. In this way our body loses its main source of energy.<sup>6</sup>

### Diabetes in Ayurveda-

According to *Ayurveda* there are total 20 types of *Prameha*. *Madhumeha* is the *Ayurvedic* diagnosis which is similar to diabetes mellitus. Classical texts in *Ayurveda* has elaborately described about the etiological factors of *Prameha*. Mainly there are two type of etiological factors; *Sahaja* (congenital) and *Apathyanimittaja* (acquired).

1. *Sahaja* type of *Madhumeha* is due to certain defects in *Stri* and *Pumbeeja* (ovum and sperm respectively) which is said to be *Matru-Pitru Beeja Doshakrita*.

2. *Apathya Nimittaja Madhumeha* is due to *Apathyakar Aahar Vihar* (Improper diet and activities).<sup>7</sup>

In *Ayurveda* diabetic patients are classified into fat and slim types before initiating therapy. Treatment methods advised are different in both the cases. In case of obese patients along with medication, the diet is advised to bring about weight reduction. Along with medicinal treatment diet plays an important role in the result of treatment. Obese patients should be advised food substances which are difficult to digest and having less calorie value. While in case of slim patients; food items which are easy to digest and having nutritious ingredients are used.<sup>8</sup>

In short; approach of *Ayurveda* focuses on treating the patient as a whole and not merely the disease. Overall

treatment is targeted toward complete physical, psychological, and social well-being of patient. This uniqueness makes *Ayurveda* a wonderful option for all lifestyle disorders including diabetes.<sup>9</sup>

### Clinical features-

*Madhumeha* is characterised by passage of plentiful and/or turbid urine which may become like honey and the entire body becomes very sweet. *Aacharya Sushruta* also states that *Sahajameha* patients are usually *Krishha* (thin) while *Apathyanimittaja* patients are usually *Sthula* (obese).<sup>10</sup>

### Nidana (Causative factors) -

*Nidana* means etiological factors; the factors accountable for producing any disease. In *Ayurveda* numbers of dietary habits are mentioned as causative factor for *Prameha*. Excessive use of curd, flesh of animals of domestic, aquatic and marshy places, use of milk and milk preparations, water of rivers and tanks during rains and floods, fresh grains, puddings made of jaggery (sugar), and other similar factors, which increases *Kapha Dosha*.<sup>11</sup>

For proper diagnosis and treatment one should know the exact cause of manifestation of the disease. The etiological factors of diabetes can be divided into following two groups:

**1. Dietary factors-** *Payamsi* (use of milk and milk products), *Dadhee* (excessive use of curd), *Gramyoudaka Anupamamsa* (flesh of animals of domestic and aquatic places), *Navannapanam* (new grains), *Guda-Vaikruti* (jaggery and similar products), *Ikshurasa* (Sugar cane juice), *Madhurahara* (sweet diet), *Pishtaahara* (food products rich in carbohydrates), *Adyashana* (frequent food intake before digestion of previous food), *Adhikashana*

(excessive food intake), *Ahitashana* (unwholesome diet), *Samashana* (Improper diet) and *Havisha* (a special rich food made from milk, sugar and rice).<sup>12</sup>

**2. Life style factors:** *Aasya Sukham* (routine of sitting on soft cushions for longer duration) and *Swapna Sukham/ Atinidra* (habit of taking extra/more sleep) are described as key predisposing factors for diabetes. Other causes include *Sahaja* (inherited factor), *Bhaya* (fear), *DeergaRoga* (long standing illnesses), *Aalasya* (laziness), *Kaphakrut Cha Sarvam* (all food and activities which increases *Kapha Dosha*).<sup>13</sup> Birth in a family having tendency for the *Prameha* can also be one of the reason.<sup>14</sup>

#### Prognosis-

*Aacharya Charaka* has described the prognosis in three categories -

1. *Sadhya* (curable) - Patients diagnosed in early onset of disease, those who are *Sthoola* (obese) and the origin of their disease is *Apathyaja* (due to faulty dietary habits) are described as curable.

2. *Yapya* (palliable) - *Pittaja Prameha* and certain types of *Kaphaja Prameha* are *Yapya*.

3. *Asadhya* (incurable) - *Vataja prameha* is described as incurable.<sup>15</sup>

#### Therapeutic approach-

**Herbs used in diabetes:** Herbal drugs are greatly valued all over the world as a rich source of therapeutic agents for treatment and prevention of diseases. India is called as “Botanical Garden of the World”. Using various plants as a basic source of medicine has been inherited and is the most important part of *Ayurveda*. Practice of herbal medicines is steadily growing and approximately 60 % of the population is

using herbal medicines to treat various medical illnesses.<sup>16</sup>

Most common and effective anti-diabetic medicinal plants of Indian origin are *Giloy* (*Tinospora cordifolia*), *Gurmar* (*Gymnema sylvestre*), *Rason* (*Allium sativum*), *Methi* (*Trigonella foenum-graecum*), *Ghrita kumara* (*Aloe vera*), *Neem* (*Azadirachta indica*), *Tulsi* (*Ocimum sanctum*), *Jamun* (*Syzygium cumini*), *Karvellaka* (*Momordica charantia*), *Bilva* (*Aegle marmelose*), *Babul* (*Acacia arabica*), *Pipal* (*Ficus benghalensis*) and *Gurhal* (*Hibiscus rosasinesis*).<sup>17</sup>

Some effective single formulations-

*Guduchi Swarasa* (*Tinospora cardifolia*) – 10ml twice a day with honey

*Amalaki Curna* (*Phyllanthus emblica*) – 6 gm. twice a day with honey.<sup>18</sup>

*Karavellaka Phala Churna* (*Momordia charantia*) - 3 gm. twice a day with water.

Medicated *Ghee- Dhanvantara Ghrita*- 5 to 10 gm./day

*Dadimadya Ghrita*- 5 to 10 gm./day

*Sinhamrita ghrita*- 5 to 10 gm./day

*Saraleha* - Prepare decoction of *Asana* (*Pterocarpus marsupium*), *Khadira* (*Acacia catechu*), *Babbula* (*Acacia arabica*) and *Bakula* (*Mimusops elengi*).

During boiling add oxides of *Tamra* and *Loha* and powders of *Amalaki* (*Phyllanthus emblica*), *Danti* (*Baliospermum montanum*), *Lodhra* (*Symplocos racemosa*) and *Priyangu* (*Aglaia elaeagnoides*). This is useful for all types of *Prameha*.

2. *Gokshuradyavaleha* - Prepare decoction of *Gokshura* (*Tribulus terrestris*) and add *Trikatu* (*Piper longum*, *Piper nigrum*, *Zingiber officinalis*), *Nagakeshara* (*Mesua ferrea*), *Dalchini* (*Cinnamon*)

Cardamom), *Ela* (Elettaria cardamomum), *Jatipatra* (Myristica fragrans) and *Vamshalochana* (Bambusa bambos). This is also useful in all types of *Pramehas*.<sup>19</sup>

#### **Study on anti-diabetic efficacy of Jamun, Karella, Nisha-Amalaki at CCRAS-**

A study carried out by Sri Kanthet to ascertain the efficacy of certain *Ayurvedic* herbal medicines in the treatment of diabetes mellitus reported positive results. The study engaged 862 cases of diabetes to assess the effectiveness of four types of *Ayurvedic* drugs between 1998 and 2007 at the Central Council for Research in *Ayurvedic* Sciences (CCRAS). According to the data, 67.61 % patients responded to the treatment with *Jamun* and *Karella* seed extracts, while 53.21 % responded favourably when given *Nisha-Amalaki Churna* combined with yoga and meditation sessions.<sup>20</sup>

#### **Apathya (Diet to be avoided)-**

Practicing unhealthy dietary habits like over eating (*Atiashana*), untimely eating (*Vishamashana*) etc., not following rules of *Dinacharya* and *Sadavritta*; overindulgence in state of anger, sorrow, lust, grief; all these practices disturb the *Sharir* as well as *Manas Doshas* and ultimately lead to a diseased state.

**Aahara:** Excess consumption of water, milk, *Ghee*, oil, curd, sugar and rice preparations, these all are *Apathya* for diabetes. Also one should avoid, *AudakaMamsa*, *Pishtanna*, as well as *Navanna*.

**Vihara:** *Eksthana Asana* (sedentary life style), *Atinidra* (excessive sleep), *Divaswapna* (sleeping at

daytime), *Avyayam* (lack of exercise), *Dhumapana* (smoking) and *Mutravegadharana* (urge for urination)<sup>21</sup>.

#### **Aasanas, Kapalbhathi and Pranayama advised in diabetes mellitus:**

In context to practising *Yogabhyasa*, it is said that by performing *Pranayama* regularly anyone can be *Sarvarogokshayo* i.e., free from all kind of disorders. *Pranayama* is praised as the procedure which brings mental as well physical steadiness, overall health and a feeling of lightness.<sup>22</sup>

Study to assess the effect of *Yoga Aasanas* on nerve conduction in type 2 diabetic patients showed positive results in glycaemic control and ultimately improved nerve function in mild to moderate type 2 Diabetes with sub-clinical neuropathy.<sup>23</sup>

*Kapalbhathi* i.e., rapid performance of *Rechaka* (exhalation) and *Puraka* (inhalation) like emptying and filling up of the bellows of a blacksmith, is well known as the destroyer of all disorders caused by *Kapha* (phlegma).<sup>24</sup>

#### **Conclusion-**

Thomas Edison has rightly stated that “The doctors of the future will give no medicine but will instruct his patients the care of the human frame, in diet and in the cause of prevention of disease.” Regarding treatment of any disease *Ayurveda* not only emphasizes on proper medication but also concentrates on appropriate *Aahar* (diet) and *Vihar* (daily routine) of a patient. This will definitely control diabetes without any side effects. From various researches carried out at different organisations, it is clear that there is a lot of potential in Indian herbal medicine to control diabetes if used sensibly.



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