

**IMPORTANCE OF LIFESTYLE MODIFICATION IN DIABETES MELLITUS W.S.R.
PRAMEHA: A REVIEW ARTICLE****Dr. Reena^{*1}, Dr. Yogesh², Dr. Sunayana Sharma and ³Dr. Anupam Pathak⁴**¹PG Scholar Deptt of Swasthivritta & Yoga.²Assistant Professor Deptt of Swasthivritta & Yoga.³Associate Professor Deptt of Swasthivritta & Yoga.⁴HOD & Professor, Deptt of Swasthivritta & Yoga, Sriganganagar College of Ayurvedic Science & Hospital, Tanta University, Sriganganagar –335001, India.***Corresponding Author: Dr. Reena**

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ABSTRACT

Diabetes mellitus (DM) is a progressive chronic metabolic disorder characterized by hyperglycemia associated with long-term micro vascular complications like retinopathy, nephropathy, neuropathy and macro vascular (cardiovascular) complications. Pharmacological interventions i.e. medicines are not always necessary to control diabetes, but emphasis should also be given to non-pharmacological management. Prameha explained in Ayurveda texts bears resemblance to Diabetes. There is detailed explanation in ayurveda texts regarding dietary modification and physical activities for prevention and management of Prameha. This article is compiled with an aim to commemorate various references of lifestyle modification in Ayurveda texts and researches supporting them. Principles of Dinacharya, Aahara, Vihara, Sadvritta, Rasayana when applied in daily routine plays major role in prevention as well as better management of Diabetes.

KEYWORDS: Diabetes, Micro vascular complications, Prameha, Lifestyle Modification.**INTRODUCTION**

Diabetes mellitus (DM) is a progressive, chronic metabolic condition characterized by hyperglycemia associated with long-term micro vascular complications like retinopathy, nephropathy, neuropathy and macro vascular (cardiovascular) complications. Prameha is a syndrome which includes all those clinical conditions which are characterized by increased quantity of urine associated with or without the increased frequency of micturition. Poly urea and Turbidity of the urine are the cardinal presenting features of this diseased state.

It is one of the common problems facing our modern era, resulting in numerous complications, which can be effectively managed by simple measures, such as lifestyle modifications. Pharmacological interventions i.e. medicines are not always necessary to control diabetes, but emphasis should also be given to non-pharmacological management. Evidence has clearly shown that lifestyle variables are highly associated in determining the relative risk of diabetes mellitus. Lifestyle variables include meal habits, exercise state, drinking state and smoking state. Modification in these factors would result in improved compliance towards hypoglycemic agents.

Need of Study

There are several factors that increase the risk of developing T2DM (Type 2 Diabetes Mellitus), some of which include Obesity, Family history of DM in a first-degree relative, Increasing age, Polycystic ovarian syndrome, Physical inactivity, Low-fiber, high-fat, energy-dense diet, Urbanization. The management of T2DM is multifactorial, taking into account other major modifiable risk factors, like obesity, physical inactivity, smoking, blood pressure (BP) and dyslipidemia. Therefore preventive aspect of Ayurveda explained as Dinacharya, Aahara Visheshayatana, Sadvritta, Rasayana etc needs to implement in practice to prevent and manage Diabetes.

LITERATURE REVIEW

Ayurvedic classical texts i.e. Bruhatrayee and others were screened for various references that can be directly or indirectly understood to frame lifestyle guidelines in Diabetes. Various Research paper published in peer reviewed journals were studied and screened for role of lifestyle modification in terms of diet and exercise in Diabetes. Comprehensive management of diabetes includes multifactorial approach as there is no single etiological factor involved instead there is cluster of factor responsible in causation of DM.

Ayurveda suggests individualised approach in preventive and curative medicine. In case of individuals who are at risk of T2DM or suffering from it, lifestyle modification has to be as per their Prakriti (Body Constitution), Saatmaya (Accustomisation of food habits), and working nature i.e. Occupation etc. Patient preferences, values, objectives, and priorities should be respected, and these should then guide the shared clinical decision-making process. This is the patient-centered approach to DM management that is advocated by the American Diabetes Association and European Association for the Study of Diabetes. It encourages the individuals to own their lifestyle goals and action plans.

Dietary Modification

Diet plays an important role in causation of T2DM. Ayurveda says excessive consumption of sweet, heavy food like milk, curds, sugarcane, meat of Anoop Desha animals leads to increase in Kapha Dosha and eventually causes Prameha or Diabetes. The key principles include calorie restriction, low-fat diet, portion control, and increasing fruit, vegetable, and fiber intake. Dietary habits of patient should be modified to encourage regular meal times and healthy eating habits. Asthahaaravidhi Visheshayatana explained in Vimaana Sthaana of Charaka Samhita.

These are 8 specific factors of method of dietetics which are discussed in detail further more and are summarized briefly below.

1. **Prakriti/ Swabhava**- Nature of food/ Qualitative characteristics of food.
2. **Karana** – Processing of food.
3. **Samyoga** – Combination/mixing of different food items.
4. **Rashi** – Quantity of food.
5. **Desha** – Habitat of food i.e. place of origin.
6. **Kaala** – Time and seasonal variation.
7. **Upayoga Samstha** – Rules for dietetics.
8. **Upayokta** – The person who consumes the food.

Prakriti/ Nature of Food

Major cause of Prameha is Kapha aggravating diet that is Guru, Snigdha Guna Aahara hence diet advised should be Laghu, Rooksha in case of Kaphaja Prameha which in general can be taken as Type 2 Diabetes Mellitus associated with obesity.

Karana/Processing Methods

Various method involved in cooking like soaking, boiling, steaming, deep frying, marinating etc bestows different properties to the food item being cooked. So only there are various cooking methods that are highlighted in classical Ayurvedic texts that change the original nature of the food items. Keeping grains for a period of one year increases Laghutva i.e. makes them easily digestible. Yava (Barley) when overnight soaked in Triphala Kashaya is comparatively more Rooksha in nature and easy to digest. Similarly when grains are dry roasted before use they become more easy to digest.

Roasted Bengal gram is very good choice for diabetics. Meat cooked in tandoor that is Shooli Mamsa (explained in Ayurvedic text) is more beneficial for Diabetic patient, probably because it has reduced Kleda as compared to meat curries. Even through proper washing grains like rice prior to cooking and removing the supernatant water also increase their digestibility. Green gram soaked in Triphala Kashaya to prepare Daals or soup also has more suitability to diabetic patient. In case of Vata dominant Prameha where Nidaana is Apararpana (Nutritional deficiency), nourishing diet is advised. So oils like Atasi Taila, Sarshapa Taila, Kharjoor are also indicated in Prameha.

Samyoga (Combination/ Mixing)

Samyoga (combination) is aggregation of two or more substance. This exhibits peculiarities which are not seen in case of individual substances.^[11] Combinations like fish with milk, hot pizzas with cold drinks etc is Viruddhaahara as per Ayurveda and is contraindicated for diabetics also.^[12]

Rashi/ Quantity of Food

Quantity to be taken depends on individuals Agni (Appetite). It may vary depending upon time and season even in same person. So one must assess it and eat accordingly. Ayurveda advocates Langhana (Fasting) in Kaphaja disorders. It means either fasting or reducing the quantity of food intake so that there is Kapha Kshaya. Individual should eat optimum quantity at proper time. One should eat cautiously and avoid overeating.

Desha (Habitat)

Desha denotes place relating to growth as well as distribution of the substances and also the suitability in respect of place. It is a geographic region. Food substances differs in quality due to difference in soil and climate. Foods grown in Anoop Pradesh i.e. cold, rainy places are heavy to digest and not to be preferred for Diabetics whereas food grown in Jaangala Pradesh (Region of dryness, less rainfall, Vata predominant) are Laghu and Rooksha, hence more suitable to Diabetics.

Kaala (Time and Seasonal Variation)

To maintain proper health in both healthy and diseased condition the seasonal regiment must be followed. Kala is eternally moving (time) as well as conditional. Ritucharya mentioned in Vasanta and Varsha Ritu has strong resemblance to the Pathya Apathy mentioned in Prameha.

Upayoga Samstha (Classical Rules of Dieting)

It denotes the rules for dieting. This depends on the digested food. One should eat light, warm, at proper time and in a calm environment. Heavy diet at night time is too avoided by Diabetics. Frequent small meals can be taken where fluctuations in glucose level is more.

Upayokta (The Person Who Takes the Food/User)

Upayokta is that who consumes the food. Dietary regimens cannot be same for individuals of different Prakruti. For eg Preparation of Yava in form of chapati and pancakes will be preferred to Kapha & Vata Prakriti respectively. So physician needs different approach in each individual. Here Role of Saatmaya (Accustomisation to certain food) is very important. Before withdrawing any particular food habit and introducing any new habit, one should take time and try with modifications of existing diet first. Drastic changes are not accepted well, may lead to Asatmaya Janya Vyadhis.

Daily Regimens

Dinacharya regimens which are of immense importance to diabetics are Brahma Muhurata Jaagrana (Early Rising), Udvartana, Utsadana, Snaana, Vyayama etc. Udvartana is dry powder massage all over body in opposite direction of body hairs. It reduces Kapha and Kleda. Udvartanam with Tvaka (Cinnamomum zeylanicum), Ushira (Vetiveria zizanioides), Ela (Cinnamomum zeylanicum), Agar (Aquilaria agallocha), Rakta chandan (Pterocarpus santalinus) along with takra all over body followed by bath in Vijaysara Sadhita Jala (decoction of Pterocarpus marsupium).

Udvartana is especially indicated for Kapha Prakruti as it reduces weight and peripheral fat. In case of Vata Prakruti Diabetic patients can be advised to do massage of extremities with supti tailam or pinda tailam on daily basis before taking bath. Vyayama leads to Kapha & Meda Kshaya. It creates sthairyata in Dhatus (Compactness in Tissues) of body.

Exercise helps in weight control. Vyayama should be done to certain limit by each individual mentioned as Ardhashakti in Ayurveda that is till the appearance of sweat on forehead, axilla and increased breathing rate. Basically there is Dhatu Shaithilyata in Prameha, Samhanana of body is reduced so one should not go for vigorous exercise instead Yoga is very beneficial. Yoga postures like Paschimottanasana, Halaasana, Vajrasana, Shalabhasana, Vakrasana are effective in reducing the blood glucose levels in patients with T2DM.

The beneficial effect of yoga in T2DM has been attributed to increased insulin sensitivity at target tissues which decreases insulin resistance and consequently increases peripheral utilization of glucose. It has also been postulated that yoga can rejuvenate or regenerate beta cells of pancreas. In addition, yoga has positive effect on general well-being and stress.

Samyaka Nidra (Adequate Sleep)

Due to proper and adequate sleep body tissues and Doshas remain in balanced state of health both physically and mentally. Ayurveda states that, happiness and sorrow, obesity and emaciation, strength and weakness, virility and impotence, knowledge and

ignorance, life and death are all depends on adequate and inadequate sleep. Repeated disruption of Circadian System, Pineal Gland, Melatonin suppression by exposure to light. Sleep deprivation causes impairment of the immune system plus metabolic changes favouring obesity. Poor sleep can be an important indicator of emotional stress. On the one hand, emotional stress can easily affect different aspects of sleep, such as initiation of sleep, sleep duration, and sleep quality. Conversely, sleeping problems may not only be a consequence of emotional stress, but are often experienced as a significant source of stress. Studies reveals that habitual sleep disturbances were associated with a higher incidence of type 2 diabetes.

Diabetics should wake up early so that hormonal flow is regular. Sleeping early at night reduces mental stress and restores energy too. One should strictly avoid Day sleep as it viciates Kapha and Pitta Dosha. Day sleep decreases Agni and causes deranged metabolism that may cause increase in weight. In case of individuals working during night, they are advised to sleep during day time upto half of their normal duration at night time. Also one must take care not to sleep just after having food.

Sadvritta / Behavioural Modification

According to Ayurveda, to maintain a healthy and disease free life everyone should follow Sadvritta mentioned in Ayurveda texts. Sadvritta plays key role in the maintenance of health and prevention of disease. Sadvritta are regarded as one of the measures to prevent various types of diseases. It also plays important role in personal cleanness of body and mind. Continues practicing these principles gives balance and peace to the mind. This is code of conduct for keeping good and balanced condition of body and mind. By following these, the person can achieve two aims together such as Arogya (health) and Indriya Vijaya (control over the sense organs).

One should not indulge in any activity without proper examination and should not postpone the things to be done at the proper time. One should not feel excessively exhilarated in achievements and depressed in loss. Should always remember normal modes of events happening since the cause of all things are definite and their effects are also definite. These all modifications helps in better management of stress. Stress has long been suspected as having important effects on the development of diabetes.

Rasayana (Rejuvenating Herbs & Minerals)

The Ayurvedic texts describe Shilajatu as a Naimittika Rasayana for Prameha and hence it is advisable to use Shilajatu in prediabetics or in diabetic management as an adjuvant therapy for promotive and preventive measure. Classically Shilajatu is well known for its Naimittika Rasayana effect, Ojovardhaka and Pramehaghna property. Dalhana's commentary on Sushruta considered Shilajatu as the best Naimittika Rasayana (Adjuvant

therapy) for Prameha Nisha Aamalaki prayoga is highly beneficial for diabetics.

CONCLUSION

Lifestyle strategies are cost effective, at least in delaying the onset of DM. Lifestyle strategies, unlike pharmacotherapy, are not limited by side effects and tolerability. In contrast to medications, which typically address only one risk factor, lifestyle modification simultaneously addresses obesity, glycemic control, BP, and lipid abnormalities. Furthermore, behavioral strategies, such as stress management and self-monitoring of food and exercise can be instituted.

Ayurvedic dietary and behavioral modification needs to be incorporated so that Prediabetics and Diabetics can be effectively managed. Diabetes is a complex condition so all aspects of its management need to be brought together in a complementary fashion incorporating treatment of acute complications while preventing long-term complications.

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