

FAULTY AND WHOLESOME LIFE STYLE FOR PATIENTS OF DIABETES MELLITUS TYPE II W.S.R. TO *MADHUMEHA*- A REVIEW STUDY

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ABSTRACT

Background: Diabetes Mellitus Type II is a life style disorder and precipitates due to faulty diet and life style and the incidence of it is increasing day by day. India is considered as world's capital of diabetes with 77 million patients in 2020 as estimated by IDF. Scientists are in continuous search for newer anti-diabetic drugs and also searching for diabetes specific food items to achieve good glycemic control. Despite all efforts insulin remains the only option at the end to match the health crises caused by chronic hyperglycemia. Running behind treatment option and worrying about ingested calories people forget to think about the extra calories that are not used by the body and get stored in the form of glycogen and fat but can be easily get ridden by changing their life style only. **Objective:** To put light on *Apathya Vihara* (faulty life style) and *Pathya Vihara* (wholesome life

style) as mentioned by different *Acharyas* in their *Samhitas* and to validate them with study available in current era. **Data source:** Ayurveda texts, different articles and research papers available online. **Review Method:** We searched for relevant contents in Ayurveda text and then related terms on online databases to validate their relevance in present era. **Result:** Sedentary life style is most common factor that contributes in precipitating diseases like obesity and diabetes mellitus type II, also there are different physical activates that are

advised not only by scholars of ancient India but also by contemporary researchers that lowers blood sugar levels in short term. These activities increases insulin sensitivity and hence the muscle cells are better able to use any available insulin to take up glucose during and after activity. Activities that controls blood sugar level not only includes physical exercise but also includes other common activities like regular walking, regulating sleep hours, regulated sexual activity, passive muscular movement in the form of body massage, regular practice of Yoga, and many more which are validated by both ancient and contemporary researchers. **Conclusion:** This can be concluded that life style related metabololic disorders like Diabetes Mellitus type II and Obesity can be prevented and managed by adopting and avoiding some specific life style related activity as advised by different *Acharyas*.

KEYWORDS: Life style modification, *Pathya-Apathya Vihara*, *Madhumeha*, *Prameha*.

INTRODUCTION

Presence of family history is an important risk factor for occurrence of Diabetes Mellitus Type II in any individual but this disease precipitates only when this factor is coupled with faulty diet and faulty life style both. To signify the importance of this, *Acharya Charak* said “patients who practice *Asyashukam-Swapnashukham* (sits or sleep in comfort without any worry for long duration i.e., avoids physical activity and mental exertion) and consumes excess amount of *Dadhi* (curd), *Gramya*, *Anupa*, *Audaka Mamsa* (meat of domestic, aquatic or marshy animal), *Payanshi* (milk and its products), *Nava-Anna* (grains harvested within a year) *Nava-Panam* (newly collected rain water), *Guda Vaikritam* (jaggery and other products prepared from it) or practice any activity or consumes any food that causes accumulation of *Kapha Dosha* in the body, will develop *Prameha/Madhumeha* in future.”^[1] Here *Acharya Charak* not only mentioned about faulty diet but he also mentioned about faulty lifestyle in the same *Sloke*. This indicates that the occurrence of *Madhumeha* is possible only when fault occurs in both the aspects.

We see that many people like athlete, body builder, labors, etc who do a lot of physical activity rarely develops Diabetes or Obesity even after taking high calories. Here this is notable that it's not only inflow of extra calories in body that precipitates Diabetes but it's the obstruction of outflow of extra calories in the form of physical inactivity that shuts the door and causes accumulation of surplus calories in the body and this surplus calories get stored in

the body in the form of glycogen and adipose tissues resulting into the development pathologies like obesity, increased insulin resistance and hence diabetes mellitus type II.

Apathya Vihara (Faulty Life Style)

“*Acharya Sushrut* says no disease occurs without *Nidana*. Therefore, *Nidana Parivarjana* is the first treatment for any disease.”^[2] As the *Viharaja Nidana* are not advisable to practice, they are *Apathya Vihara* for *Madhumeha Rogi*-

1. *Acharya Charaka*

In *Nidana Sthana*, he says any factor either diet or life style related that causes accumulation of *Shleshma*, *Meda Dhatu*, and *Mutra* in the body causes development of *Prameha*. Out of many causes of *Prameha* mentioned by him, he mentioned following as *Viharaja Nidanam* that should be avoided^[3]

- *Mrija Varjana* (keeping body untidy)
- *Vyayama Varjana* (avoidance of exercise)
- *Swapna-Shayana Prasanga* (taking excess sleep)
- *Asana-Prasanga* (practice sedentary lifestyle)

In *Chikitsa Sthana*, he mentioned following *Viharaja Nidana*^[4]

- *Asya Shukham* (sitting without worry)
- *Swapna Shukham* (sleeping without worry)

2. *Acharya Sushrut*

In *Nidana Sthana* he mentioned following *Viharaja Nidana* that should be avoided^[5]

- *Diva-Swapna* (day sleep)
- *Avyayama* (lack of exercise)
- *Alasya* (laziness)

He also said that *Madhumeha Rogi* prefers to stand instead of walking, sitting instead of standing, lying down instead of sitting and to sleep instead of sitting.[6] Saying this, *Acharya Sushrut* emphasizes that people who develop *Madhumeha*/Diabetes always avoid physical activity; rather they try to find more easeful way of doing any work and that too without any worry. This tendency decreases energy utilization in the body and this stored energy ultimately becomes a risk factor for development of metabolic disorder like diabetes mellitus type II.

3. Acharya Vagbhatta

Acharya Vagbhatta, mentioned following as *Vihara Nidana* that should be avoided [7]

- *Ek Sthana Aasana Rati* - patient sits in one place i.e., avoids moving around
- *Shayanam Vidhi Varjitam* patient do not follow the rule of sleep as mentioned in *Samhita* i.e., as we see now a day people either sleep for less or more duration, may practice unnecessary day sleep, do not fall sleep at right time rather go for sleep at late night and wake late in the day. All these practices disturbs circadian rhythm of body and lead to the precipitation of metabolic diseases like *Madhumeha*,

Pathya Vihara (Wholesome Life Style)

Acharya Charaka says “if a person regularly do different *Vyayama* (exercise), uses *Udvartana* (get massage with medicated powder), have *Snana* (bath) and *Avasechana* (shower) with medicated water and applies *Lepa* (paste) of *Sevya*, *Twak*, *Ela*, *Aguru*, *Chandana* and then *Prameha* do not afflict that person.”^[8]

Acharya Charaka says “as *Kaphaja Prameha* or *Apathyanimittaja Prameha* is an outcome of aggravated *Kleda* and *Kapha*, so in the beginning patients should be administered with *Aptarpana Chikitsa* (depletion therapy).”^[9] For this he says, “all the *Vihara* (physical activities) indicated for *Atisthoola Rogi* in *Ashtauninditiya Adhyaya* should be followed by *Apathyanimittaja Sthoola Pramehi*. He says such patients should practice *Prajagaram* (less sleep), *Vyavaya* (sexual activity), *Vyayama* (physical exercise), and *Chintan* (thoughtful brain) and these should be progressively increased. Such practice reverses the pathogenesis to make patient free from this ailment.”^[10]

Acharya Sushruta also gave multiple options for treatment of *Madhumeha* patients which can be chosen according to their economic condition. The options includes “*Vyayama* (physical exercises), *Niyuddha* (wrestling) *Krida* (sports), *Gaja-Turaga-Ratha Aticharya* (excess riding of elephants, horse or chariot), *Pada Aticharya*, *Parikramanani* (practice walking on foot) *Yantra-Upayantre Sevanam* (practice archery)”^[11] “For people who are not economically affluent and live alone without relatives should remain without shoe and umbrella, they should stay in a village only for one day like a sage and then should travel one hundred *Yojanas*. They should even live with *Mriga* and *Gau*. They should adopt *Shilochhavritti* i.e, they should adopt lifestyle of a *Brahmina* i.e. living on grains left over on ground after thrashing the field. They should carry the chariot of *Brahmin* and read *Vedadi*. If the patient

is *Shudra*, he should cultivate lands or dig wells. Acharya says, if poor patients follow this code of conduct carefully, they get rid of *Prameha* in one year.”^[12]

Role of Yogic Practices^[13]

Yoga is being practiced since long time for management of many diseases. Several recent studies have documented the beneficial effect of yogic practices in Diabetes Mellitus type II. Yogic practices improve glycaemic control, reduce blood pressure, correct dyslipidemia, reduce insulin resistance and eliminate stress leading to effective control of diabetes and hence help in prevention of its long-term complications. Some of the common yogic exercises are-

- *Bhujangasana*
- *Dhanurasana*
- *Naukasana*
- *Ardha Matsyendrasana*
- *Paschimottanasana*
- *Shavasana*

DISCUSSION

“According to *Charaka*, the causative factors that help in the development of *Prameha* must not be consumed because non-consumption of causative factor is the treatment of established disease.”^[14] Review of available literature related to faulty and wholesome life style for patients of diabetes mellitus type II w.s.r. to *Madhumeha* reveals that for good glycemic control one should maintain active life style. “Living a sedentary lifestyle without sufficient exercise is seriously damaging to health. Being inactive often leads to being overweight, which can lead to pre-diabetes and type II diabetes.”^[15] So, physical activities in different forms are advised not only by contemporary researchers but also by scholars of Ancient India as had been mentioned above. In modern terms, aerobic physical activity, or endurance physical activity, is characterized by repeated and continuous movement of large muscle groups. Examples of aerobic exercise include cycling, dancing, hiking, jogging/long distance running, swimming, walking, etc.^[16] “Exercise lowers blood sugar levels by increasing insulin sensitivity and hence the muscle cells are better able to use any available insulin to take up glucose during and after activity. When muscles contract during activity, the cells are able to take up glucose and use it for energy whether insulin is available or not and helps to lower the blood sugar in short term. Regular exercise can also lower the A1C.”^[17] “Sex is an

exercise, like jogging or aerobics, and it can bring on low blood sugar, says the American Diabetes Association (ADA). Exercise helps you use insulin more efficiently, so any given amount of insulin has more blood-sugar-lowering power.”^[18] “In particular, aerobic exercise improves lipid metabolism and decreases insulin resistance in Type I Diabetes and reduces blood pressure, triglycerides, insulin resistance and glycated haemoglobin (HbA1C) in Type 2 Diabetes.”^[19] Walking is mentioned under name of *Pada Aticharya, Parikramanani* by *Acharya Sushruta*. “Brisk walking workouts can help you maintain a steady blood sugar level and body weight if you have Type 2 diabetes. A 30-minute walk at least five days per week is recommended by the American College of Sports Medicine and the American Diabetes Association.”^[20] Apart from active movements options for passive muscular movement and stimulation is also available as *Abhyanaga* or body massage “The researchers also found significant evidence that massage may decrease blood glucose levels, decrease hemoglobin A1C levels, improve pain caused by peripheral neuropathy, and improve diabetic foot ulcers.”^[21] Discussion of wholesome life style for patients of diabetes mellitus type II can’t be concluded without discussing importance of Yoga. “Regular practice of yoga benefits the body by improving digestion, circulation, and immunity. Yoga enhances function of neurological and endocrine organs; it can prevent and provide relief from chronic illnesses. Overall the body feels healthier, more energetic. *Asanas* like *Kapal Bhati* (Skull Shining breathing technique), *Supta Matsyendrasana* (Lying-down body twist), *Dhanurasana* (Bow pose), *Paschimottanasana* (Seated forward bend), *Ardhya Matsyendrasana* (Sitting half spinal twist), *Shavasana* (Corpse pose) tackles diabetes better.”^[22] “Abdominal stretching during yoga exercises is believed to result in the regeneration of pancreatic cells.”^[23] “The various postures during yoga practice help to improve the sensitivity of β -cells to glucose, thereby improving insulin secretion, and increase the blood supply to the muscle and muscle relaxation, thereby improving glucose uptake. Improvements in hormonal homeostasis also improve glycaemic control in people with diabetes mellitus.”^[24] “*Yoga asana* also modulate gene expression and increase muscle activity, strength, endurance, flexibility, and balance, resulting in favourable effects on body weight, adiposity, dyslipidaemia, and insulin resistance.”^[25] “Yoga therapy increases the number of insulin receptors and increases the proportion of receptor binding in patients with diabetes”^[26]

CONCLUSION

In the light of this review article, this can be concluded that life style related metabolic disorders like Diabetes Mellitus type II and Obesity can be prevented and managed by

adopting and avoiding some specific life style related activity as advised by different *Acharyas* which are even validated by different studies done in present time.

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