

**An Ayurvedic review on *Pathya – Apathya* for *Madhumeha*
 (Type II Diabetes Mellitus) with special reference to Glycaemic Index of
 food articles.**

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ABSTRACT:

Type II Diabetes Mellitus is one of the most common and trending metabolic disorders in many developed and developing countries while India is marching so fast towards to become Capital of Diabetes Mellitus with more than 77 million active cases. According to the WHO Diabetes Mellitus is a chronic, metabolic disease characterized by elevated levels of blood glucose and nowadays it is trigger by adopting sedentary lifestyle and excessive consumption of refined food articles with High Glycemic Index. And in order to Prevent and Control the Diabetes, *Pathya* and *Apathya* in terms of *Ahara* and *Vihara* i.e. (Diet & Lifestyle regimen) had already described by various *Acharya* in *Ayurveda*. This review article is a humble effort to justify that *Pathya* and *Apathya* *Ahara* and *Vihara* mentioned by various *Acharya* in *Ayurveda* still remains gold standard and plays an important role in

Prevention and Control of Type II Diabetes Mellitus.

Keywords: *Ayurveda, Pathya- Apathya, Ahara, Vihara, Glycemic Index, Type II DM, Madhumeha.*

INTRODUCTION:

Diabetes Mellitus (DM) refers to a group of common metabolic disorders that share the phenotype of hyperglycemia. Several distinct types of DM are caused by a complex interaction of genetics and environmental factors. Depending on etiology of the DM, factors contributing to hyperglycemia include reduced insulin secretion, decreased glucose utilisation, and increased glucose production. The metabolic dysregulation associated with DM causes secondary pathophysiologic changes in multiple organ systems that impose a tremendous burden on the individual with diabetes and on the healthcare system. Nowadays DM is a leading cause of end stage renal

disease, non-traumatic lower extremity amputations and adult blindness. Persons with Diabetes are at increased risk for cardiovascular disease, which is the main cause of morbidity and mortality in recent era. ⁽¹⁾

Etiologic Classification of DM

DM is classified on the basis of the pathogenic process leading to hyperglycemia. There are two broad categories of DM, designated as either type I or type II DM.

Type I Diabetes (immune-mediated beta cell destruction, usually leading to absolute insulin deficiency).

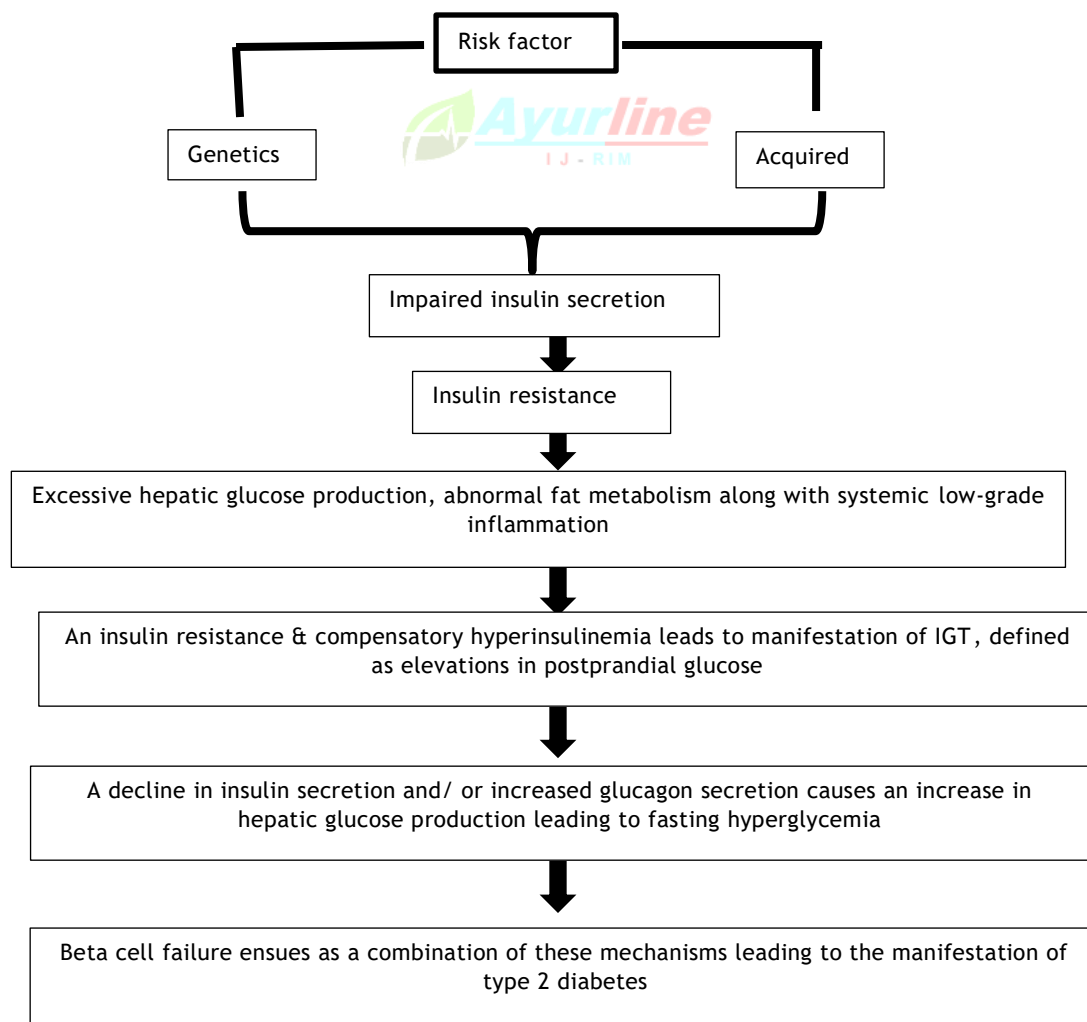
Type II Diabetes (may range from predominantly insulin resistance with

relative insulin deficiency to a predominantly insulin secretory defect with insulin resistance). ⁽¹⁾

Risk factors for type II DM

Genetic, Obesity, Physical inactivity, Prolong consumption of Junk and High Glycemic food article, Alcohol consumption, Stress, Sedentary lifestyle, Smoking, Hormonal diseases like-Cushing's syndrome, Acromegaly, Hyperthyroidism, Trauma to pancreas by pancreatitis, Pancreatic cancer, prolonged intake of certain medicines like-Antiseizures drugs, Psychiatric drugs, Glucocorticoids etc. ⁽¹⁾

Pathogenesis ⁽¹⁾



According to *Ayurveda* Type II DM can be correlated with *Madhumeha vyadhi* which comes under one of the types of *Prameha*.

According to *Ayurveda* etiological factors of *Madhumeha* are classified into three categories:

1. *Aharaja* (Dietary factors)
2. *Viharaja* (Lifestyle factors)
3. *Beejdoshaja* (Hereditary factors)

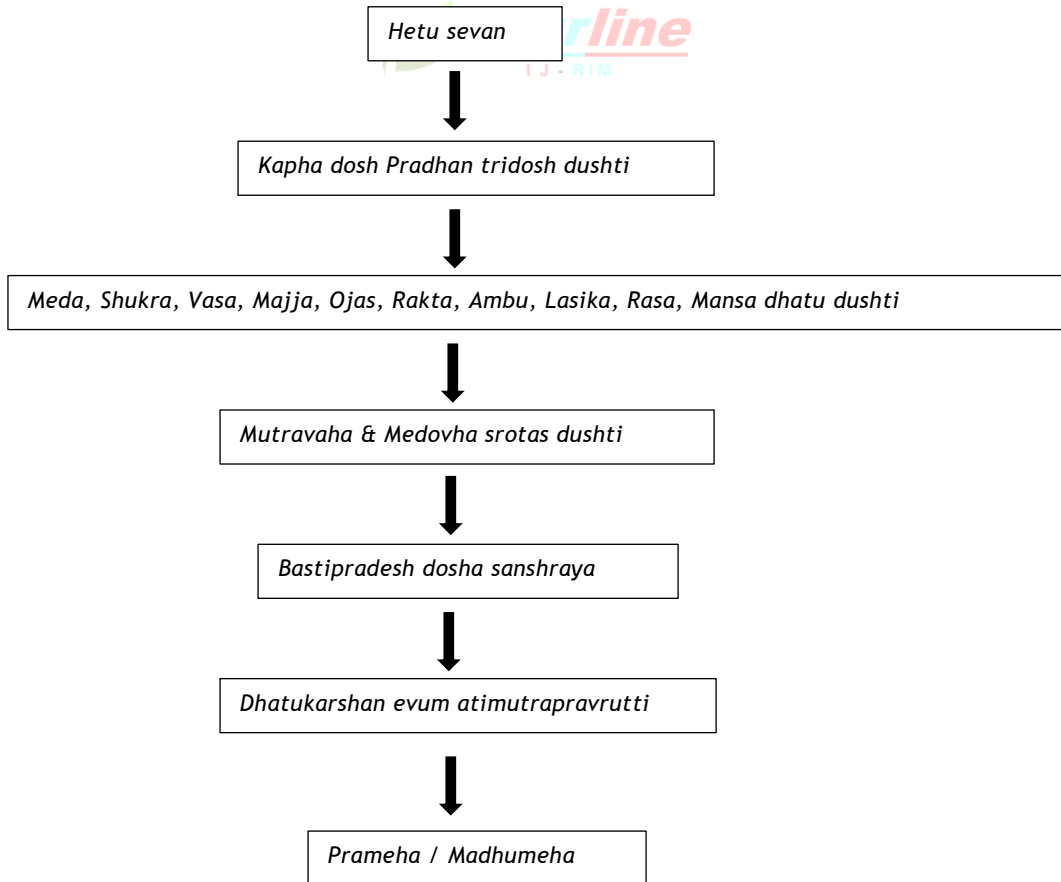
Aharaja & Viharaja hetu :

आस्यासुखं स्वप्नसुखं दधीनि ग्राम्यौदकान्
परसाः पयांसि।

नवान्नपानं गुडवैकृतं च प्रमेहेहेतुः कफकृ
च्च सर्वम्॥(ch.chi6/4)

Aasyasukham (addiction to the pleasure of sedentary lifestyle), *Swapnasukham* (excessive sleeping habit), *Dadhini* (excessive intake of curd), *Gramyaaudakaanuparasa* (excessive consumption of flesh/ meat domestic, aquatic & marshy animal origin) *Payansi* (excessive consumption of milk/ diary preparations), *Navannapana* (excessive consumption of newly harvested food articles), *Gudavaikruti* (preparations of jaggery) *Pisthaanna* (carbohydrate rich food).⁽²⁾

Samprapti: ⁽³⁾



By studying and considering both *Ayurvedic* & Modern literature about Type II DM, we can clearly state that *Aharaja* (Dietary) & *Viharaja* (Lifestyle) factors play a significant role in manifestation of Type II DM. In recent era habitual consumption of junk & refined food articles which possess high glycemic index along with inadequate physical activity puts an individual at high risk of developing various metabolic disorders amongst which Type II DM is most common. Hence various *Ayurvedic Acharyas* have given an elaborate description regarding *Pathya* & *Apathya* for numerous diseases in order to prevent healthy individual from manifesting a disease (स्वास्थ्यस्य स्वास्थ्य रक्षणम्) &

Importance of *Pathya* and *Apathya*

The importance of *Pathya* and *Apathya* in Ayurveda are often deduced from the very fact that *Acharya Charaka* had detailed *Pathya* as a synonym for treatment. He mention that when channels of circulation become hard by aggravated doshas and *Pathya* helps to soften the *Srotas* (channels of circulation) and alleviate vitiated doshas. ⁽⁵⁾

Acharya Charaka providing a general list of *Pathya* and *Apathya Dravya* for patients and “*Sansarjana Karma*” for *Panchakarma* Therapy patients. *Acharya*

According to *Yogaratanakara*, the aetiology of the disease, the drug to be used, and *Pathya* are three important aspects that should be investigated prior to beginning treatment. *Yogaratanakara* compares a progressive disease to an *Ankura* (seedling) for progressive form of the diseases. this *Ankura* will be dry and destroyed if it is not nourished by water;

helps to manage disease condition (आतुरस्य विकार प्रशमनम्)

General *Pathya* and *Apathya*

Acharya Charaka stated some diets which should always be consumed by healthy persons. These food articles include *Shashtika* (variety of rice), *Shali* (variety of rice), *Mudga* (*Phaseolus radiatus* Linn.), *Saindhav*, *Amlaka* (*Emblca officinalis* Gaertn.), *Varshajal*, *Goghrit*, and Honey. Similarly, *Acharya Charaka* has also mentioned some food articles which should be avoided by healthy persons. Such food articles are *Vallura* (dried meat), dried vegetables, lotus rhizome and stalk and one should never consume meat of diseased animals. ⁽⁴⁾

Sushruta describes ‘*Hita-Ahitiya Adhyaya*’ in *Sutrasthan*. *Acharya Kashyapa* describes the therapeutic potential of *Aahara* (food) and its preventative health benefits. He emphasized that food is the most effective medicine. No drug can match the benefits of food in diseased state. Only wholesome food can keep a person healthy. ⁽⁶⁾

Acharya Harita emphasised the importance of *Pathya* and *Apathya* by stating that if a person ignores the concept of *Pathya-Apathya* and consumes *Apathya* (unhealthy), illness will never leave the body. ⁽⁷⁾

similarly, disease will be destroyed if a patient consumes *Pathya Aahara* and *Vihara*. ⁽⁸⁾

Vaidya Lolimbraja indicated the essentiality of *Pathya Aahara* by stating that a patient does not require medication if they consume healthy food, and that a patient does not require medication if they

consume *Pathya Aahara* on a regular basis. ⁽⁹⁾

Ahar dravya	Glycemic Index
<i>Shastik shali, Rakta shali</i> (Red Rice)	55
<i>Kodrava</i> (Kodo millets)	56
<i>Yava</i> (Barley)	25
<i>Godhuma</i> (Wholesome wheat flour)	45
<i>Shyamaka</i> (Barnyard millet)	42
<i>Chanaka</i> (Chickpeas)	33
<i>Adhaki</i> (Pigeon pea)	46
<i>Kulattha</i> (Horse gram)	51
<i>Mudga</i> (Green gram)	38
<i>Mudga Yusha</i>	30
<i>Patol</i> (Pointed gourd)	40
<i>Karvellak</i> (Bitter gourd)	18
<i>Methika</i> (Fenugreek)	10
<i>Jambu phala</i> (Indian gooseberry)	25
<i>Amalaki</i> (Indian gooseberry)	15
<i>Kapitha</i> (Wood apple)	38
<i>Talaphala</i> (Palmyra toddy palm)	35
<i>Sarshapa tail</i> (Mustard oil)	0

Name of Food article	Glycemic Index
Samosa	90
Kachori	82
Jalebi	95
Burger	75
French Fries	75

Donut	76
Instant rice noodles	61
Aloo paratha	45
Pasta	58
Plain White Bread	72
Crispbread	81
White Polished Rice	72
Cornmeal	70
Corn flakes	84
Pizza (per sliced)	40
Butternan roti	60
Idli with Chatni	62
Muffin	44
Custard	43
Icecream	61
Pastry	60
Skimmed milk	32

DISCUSSION:

On comparative analysis of Table no. 1 and Table no. 2, we can clearly state that the food articles which are consumed in today's era have comparatively high Glycemic index than that of *Pathya Ahara Dravyas* mentioned by various *Ayurvedic Acharyas*.

Role of Glycemic Index on Type II DM

The Glycemic index (GI) is a scale that ranks carbohydrate-rich foods for how much they can raise blood glucose levels compared to direct intake of glucose, in the 2-3 hours after eating. That

mean absorption of glucose from the intestine is quicker for a food with high GI than with a low GI. The GI of 55 or less rank as low, a GI of 56-69 is medium, and a GI of 70 or more ranks as high for different food items. Eating a meal containing high GI foods can cause a rapid rise in blood glucose level compared to a meal having low GI foods, containing the same number of calories and nutrients. Therefore, in general one should eat less of high GI foods and opt for low and medium GI foods. The disadvantage of a high GI meal is that a quick rise in blood sugar level by it stimulates the pancreas to pour more quantity of insulin into

circulation to lower the blood glucose level. The extra insulin remaining in blood helps to rapidly lower the blood glucose level, but by itself insulin is a stimulus for release of other hormones that increase hunger and appetite to restore the blood glucose level. Thus, a vicious cycle sets in, which increases the cumulative food intake; and in the long run this exhausts the pancreatic secretion. If the transport of glucose from intestine to blood is faster compared to the speed of movement of glucose into the tissues by insulin, the blood glucose remains high for a longer duration (>2 hrs), and the excess glucose gets converted and deposited as fat. Furthermore, high-GI diets are said to increase the concentration of blood glucose and free fatty acids, chronic exposure to these elevated concentrations can induce β -cell failure leading to Type II DM. ⁽¹¹⁾ Similarly *Viharaja hetu* (Unhealthy Life style regimen) like *Asyasukham*, *Swapnasukham* which also contributes in the manifestation of Type II DM can be counter by certain types of *Yogasanas* like *Pashchimotanasana*, *Kurmasana*, *Halasana*, *Mayurasana*, *Suryananaskara*, *Bhastrika Pranayam* and some *Pathya vihara* like *Chankraman*, *Vyayam* and *Udavartan* which are mentioned in ayurvedic literature also helps to prevent and controlling Type II DM. ⁽¹²⁾

CONCLUSION:

According to Modern science High Glycemic Index and Lack of Physical activity are major and leading cause of Type II DM which in turn suggests that consuming food articles with Low Glycemic Index can help in control and management of Type II DM. In view of above conceptual review, it is evidently

clear that *Pathya Ahara Dravya* and *Pathya Vihara* mentioned in *Ayurvedic* literature possess Low Glycemic Index. Thus, *Pathya Ahara* and *Pathya Vihara* which was mentioned in ancient era by various Acharya remains and proves to be the gold standard for prevention, control and management of Type II DM in recent era also.

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