



UNDERSTANDING THE ROLE OF DIFFERENT PATHYAPATHYA AHARA IN CONTROLLING MADHUMEHA W.R.TO TYPE II DIABETES MELLITUS

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ABSTRACT

India is the diabetes capital of the world. More than 60 million Indians are diagnosed with diabetes including, children, young adults, and pregnant women. The WHO defines diabetes as a chronic metabolic disease that occurs when the body do not produce enough insulin or when the body does not use the insulin that is produced. The symptoms mentioned in context of *Madhumeha* are similar to the symptoms mentioned in type II Diabetes in contemporary science. Nothing can be done about complete cure, changing diet and lifestyle can help manage and prevent Diabetes. This article focuses on diabetes-friendly Indian food diet and lifestyle changes that can lend a hand in maintenance of Diabetes.

KEYWORDS: *Ayurveda*, Prediabetes, Diabetes, *Madhumeha*, lifestyle modification, *Pathyapathya Ahara*.

INTRODUCTION

Ayurvedic contribution of diabetes to the world was first contributed by Caraka under the concept of *Madhumeha*. *Madhumeha* = *madhu* (honey) + *meha* (micturition)

Madhumeha is defined as a disease characterized by the excessive excretion of urine which is similar to that of *Madhu* (Honey), along with presence of *Tanumadhuryata* which goes parallel to the explanations in contemporary sciences, where the word meaning of "diabetes" implies to conditions characterized by excessive urination (polyuria).

Type II D.M. or maturity onset diabetes or Non-Insulin Dependent Diabetes Mellitus (NIDDM) is more common and constitute 80-90% cases of Diabetes Mellitus. Majority of them are obese. There is moderate reduction in B cell mass. Presence of insulin in circulation blood is normal or even high. Antibodies which destroy the B Cells are not found in the blood. Genetic pre disposition is very high. Generally it affects middle aged persons. 90% of Diabetes are type II.

The mechanism involved in pathogenesis is less known. There are multiple factors involved in causing this disease. The main causative factors for Type II Diabetes Mellitus being, overweight or obese, intake of High-Calorie diet, taking high doses of steroids over an extended period of time, chronic stress, Cushing's disease or PCOD and Insulin receptor defect. Insulin

resistance is the driving factor that leads to type 2 diabetes, Gestational Diabetes and Pre-Diabetes.

Not anything can be done about complete cure, changing diet and lifestyle can be of assistance to manage and prevent Diabetes. This article brings a diabetes-friendly Indian diet super foods, and lifestyle changes that can help in maintenance of Diabetes.

MATERIALS AND METHODS

1. All the references regarding mode of action of *pathyapathya ahara* in *Madhumeha* are collected from various textbooks and interpretation is explained in this article.
2. Concept of *Pathyapathya ahara* in *Madhumeha* is discussed in concise.
3. Collection of different references is done and correlation is done logically i.e. by using *Yukti Pramana* (logical inferences).

Objectives & goals of *Madhumeha pathyapathya*

1. Maintenance of Blood Sugar Level.
2. Attainment and maintenance of ideal body weight. Weight reduction in majority of patients with NIDDM & weight gain in patients with IDDM.
3. Meal planning with individualization depending on the degree of activities & eating habits.
4. Careful balance between nutrient intake, energy expenditure and the dose & timing of drugs.
5. Physical activities.

6. Enjoy the food.
7. Maintenance of Sugar Level.
8. Prevention & Control of Diabetes its Complications.

Types of Ahara in Madhumeha

Katu, tikta, ruksha, ushna, kashaya, laghu and medoshleshmahara --- so it should be kaphamedohara Shouldn't be madhura rasa pradhana, guru and abhishyandi --- so it should be kaphamedokara.

Madhumeha Aharaja Pathya^[1]

- **Cereals:** Yava (*Hordeumvulgare* - Barley), different preparation of barley e.g. Mantha, Odana etc. Wheat (*Triticum*) can also be given. Old rice (*Oryza sativa*), as one of the cereals, which can be prescribed to the prediabetic patient and diabetic patient.
- **Pulses:** Mudga (Green gram), Chanaka (*Cicerarietinum*), Kulattha (*Dolichosbiflorus*), Adhaki (*Cajanuscajan*)
- **Vegetables:** All types of bitter vegetables (*Tiktashaka*) e.g. Karela (*Momordicacharantia*), Methi (*Trigonellafoenum*), Patola (Vietnamese luffa), Rasona (*Allium sativum*), Udumbara (*Ficusracemos*),
- **Fruits:** Jambu (*Syzygiumcumni*), Amalaki (*Phyllanthusemblic*), Kapitta (*Limoniaacidissima*), Talaphala (*Borassusflabellifer*), Kharjura (*Phoenix sylvestris*), Kamala (*Nelumbonucifera*), Utpala (*NymphaeaStellata*) etc.
- **Seeds:** Kamala, Utpala
- **Flesh:** Harinamamsa (Deer flesh), Shashakamamsa (Rabbit), Flesh of birds like Kapotha, Titira.
- **Shimbidhanya:** Mudga, Chanaka, Adhaki, Kulatha.
- **Krutannavarga:** yavamantha, yavaudana, vatya, saktu, apupa, yusha.
- **Shakavarga:** Tikthashakas - karavellaka, methika, nimba, patola, shigru
- **Phalavarga:** jambu, amalaka, kapitha, shrungataka, tinduka, dadima
- **Beejavarga:** kamala, utpala, methika
- **Mamsavarga:** vishkira mamsa, pratuda,
- **Jangalamamsa:** harinamamsa, shashaka, kapota, titira, lavakamamsa
- **Tailavarga:** danti, ingudi, atasi, sarshapa taila
- **Madhya varga:** puranasura
- **Udakavarga:** sarodaka, kushodaka, madhudaka
- **Others:** madhu, lasuna, saindhava

Apathya Ahara: Sadasana, divasvapna, navannadadhi, dhumrapana, shonitamokshana, Surashuktam, ghritha, guda, pistanna, taila, ikshu rasa.

The type of food should contain, Complex Carbohydrates, and fiber. Complex Carbohydrates are slower to Digest, so that there will be longer elevation of

blood sugar & provides balanced calorie. These are found in whole foods tend to be highly nutritious. Whole grain of complex carbohydrates are made up of three parts: Germ – The most nutrient-rich portion. Kernel or endosperm – Makes up the bulk of the seed but contains small amounts of vitamins and minerals. Bran – The fiber-rich outer layer. For example: cereals, vegetables, pulses.

Fiber is indigestible form of carbohydrate. A thread or filament from which a vegetable tissue, mineral substance, or textile is formed. Dietary material containing substances such as cellulose, lignin, and pectin that are resistant to the action of digestive enzymes.^[2]

What should be the recommended maximum Added Sugar intake? The Scientific Advisory Committee on Nutrition (SACN), which advises the government on nutrition guidelines,

Age group	Maximum added sugar value
4 to 6 years old	No more than 19g
7 to 10 years old	No more than 24g
11 or over	No more than 30g

- **Role of Fiber in Controlling Sugar Level (Dietary fiber-Indigestible form of carbohydrate)** A thread or filament from which a vegetable tissue, mineral substance, or textile is formed. Dietary material containing substances such as cellulose, lignin, and pectin that are resistant to the action of digestive enzymes. Mode of action is that it delays of gastric emptying (reduce the intake) - Slow down the absorption of sugar – Viscosity (beta-glucan and psyllium) - reduce the absorption of cholesterol and other nutrients because they thicken the contents of the intestinal tract and slow down the migration of nutrients to the intestinal walls - less burden to Insulin Receptors – Reduces Sugar level.

Some of the classical Pathya preparations

Chanaka Dal  Nutritional Info Carbs - 60 g Dietary Fiber - 22 g Sugar - 8 g Fat - 2 g	Protein - 22 g Sodium - 10 mg Potassium- 7 mg Cholesterol - 10 mg Vitamin A - 2 % Vitamin C - 0 % Calcium - 2 % Iron -20%
Kulatha (Horse gram) 	Laghu, Ushna, Kaphamedohara^[3] Raw form has the ability to reduce hyperglycemia by slowing down carbohydrate digestion and reduce Insulin resistance.
	Karavellaka (Bitter Gourd) Bitter Gourd (Stuffed) Bitter Gourd (Juice) Bitter Gourd (Chutney)
	Bitter Gourd Curry Preparation time: 15 minutes Cooking time: 20 minutes Ingredients Bitter Gourd-1.5 cups (chopped coarsely) Tamarind- Sphere of 2 inch diameter soaked in one cup of water. Jaggery- 1 ½ tbsp. Salt-1 tsp Water-1 cup (250 ml)

	Haridra (Turmeric)^[4] Katu, tikta, ruksha, ushna, kaphapittaghara, varnya, pramehahara Curcumin extracts contains anti diabetic properties. Improves beta cell functions of pancreas. Reduce Insulin Resistance.
	Madhu (Honey)^[5] Madhura, kashayanurasa, ruksha, sheeta, agnideepana, laghu, lekhaneeya, hridhy and medohara Alone or with Antidiabetic drugs reduce Hyperglycaemia, Suggested role of fructose, mineral ions, phenolic acids, flavonoids, Protection of pancreatic beta cells against oxidative stress and damage.
	KulattaYusha

DISCUSSION

Ahara having the properties like lekhan, vatahara, medohara, balya helps in overcoming bahu and abadhamedas, which helps in clearance of insulin receptors. Madumeha can be prevented. Tiktapradhanashakas are laghu and ruksha which helps in the Sthirakarana of dehaandshoshana of dushya in madhumeha. Foods containing high fiber help in delaying digestion and thus lowering calories. Physical exercises help in stimulating pancreas for the secretion of Insulin & maintain blood sugar level.

CONCLUSION

Type 2 Diabetes Mellitus is a Chronic Metabolic Disorder due to Insulin Resistance. Risk factors are focused on Intake of High-Calorie diet, High-Carbohydrate or High-Added Sugar diet and Overweight. Limiting of Madhumeha without any side effects is a challenge still to the medical system. High risk people should be identified and they are advised for behavioral, dietary & lifestyle changes after revealing poorvaroopa of Madhumeha with appropriate use of Ayurvedic preventive measures as explained in our Ayurvedic classics as Swasthavritta modalities such as nidnaparivarjana, dinacharya, ritucharya, aharavidhi,

yoga, pranayama and therapeutic measures, Madhumeha (type 2 DM) can be prevented in all best levels.

REFERENCES

1. Caraka, Charaka Samhita of Agnivesha (Part 1), revised by Caraka and Dridhabala with the Ayurveda –Dipika Commentary of Cakrapanidatta, Eight Edition, 2004; 27th Chapter.
2. Davidson's Principles and Practice of Medicine, 19th Edition, 15th Chapter, Page no 658.
3. Vagbhata, Astangahridayam, Composed by Vagbhata, 'Sarvangasundara' of Arunadatta and 'Ayurvedarasayana' of Hemadri, Reprint 2000, Sutrasthana 6th Chapter, 19th sloka.
4. Bhavaprakasha of Bhavamisra, Commentary by Dr. BulusuSitaram, Vol 1, Edition reprint 2012 Section I, 6th Chapter, 196, 197 Sloka.
5. Susruta, Susruta Samhita of Susruta with Nibandhasangraha Commentary of Sri Dalhanacarya, Reprint, 2004, Sutrasthana 45th Chapter, 132 Sloka.
4. Bhojanakutuhalam by Raghunathasuri, first edition 2012, Institution of Ayurveda and Integrative Medicine.