



CRITICAL REVIEW ON PATHYA AAHRA IN PRAMEHA Vis-à-vis DIABETES MELLITUS

¹Dr. Chaitralakshmi K N M.D.(Ayu), Assistant Professor, Department of Panchakarma, K.T.G. Ayurvedic Medical college and Hospital, Bangalore, India

²Dr. Mahalakshmi K M M.D.(Ayu), Associate Professor, Department of Panchakarma, Dhanvantari Ayurveda Medical College and Hospital, Siddapur (Uttara Kannada), India

³Dr. B.A. Lohith M.D.(Ayu) Ph.D., Professor & HOD, Department of Panchakarma, S.D.M. College of Ayurveda and Hospital, Hassan, India

Abstract: Prameha is one of the Astamaharoga explained by Acharya Charaka. It is caused due to the vitiation of all the tridoshas, mainly Bahudrava Shleshma as Prabhuta-avila mutrata. Prameha closely resembles the disease Diabetes Mellitus. In the recent era type 2 diabetes has become a global pandemic. Diabetes mellitus is now emerging as the “king of diseases” due to its multisystem involvement, complex metabolic abnormalities and varied clinical presentations. Diet and physical exercise play an important role in treating diabetes mellitus. Ayurveda has given special importance to Pathya (dietary regime) along with the treatment of the diseases. Pathya plays a major role in preventing and curing the disease effectively along with medications.

Index Terms: Prameha, Ayurveda, Pathya

INTRODUCTION:

Prameha is one of the global problem of present days and it is gaining more attention. The signs and symptoms of prameha can be correlated to diabetes mellitus (DM) of modern science. As per the WHO, diabetes mellitus (DM) is defined as a heterogeneous metabolic disorder characterized by common feature fat and protein metabolism. DM is a leading cause of morbidity and mortality world over. It is expected to continue as a major health problem owing to its serious complications. India is one among the top 5 countries with highest prevalence of DM. In India, its incidence is estimated at 7% of adult population (approximately 65 million affected people), largely due to genetic susceptibility combined with changing life style of low-activity high-calorie diet in the growing Indian middle class. The rise in prevalence is more for type-2 diabetes than for type-1. It is anticipated that by the year 2030 the number of diabetics globally will double from the present figure of 250 million¹.

The triad of insulin, exercise and diet has been the basis for treatment of diabetes. Diet is the cornerstone of the therapy for all the patients with DM and must be tailored in terms of type of DM, energy needs, social & ethnic background & lifestyle. Dietary management is the mainstay of treatment for Non-Insulin –Dependent Diabetes Mellitus (NIIDM), who comply with dietary advice, will show improvement in the major metabolic abnormalities associated with this condition. In Insulin –Dependent Diabetes Mellitus (IDDM), the role of diet is twofold Firstly, to help minimize the short-term fluctuation in blood glucose. Secondly, to reduce the risk of long-term complications by helping to achieve optimal glycemic control². Ayurveda, has given special importance to Pathya Aahara and Vihara (dietary regime) along with the treatment of the diseases. Pathya plays a major role in preventing and curing the disease effectively along with medications. In this article an effort is made to explain the importance of pathya aahara/importance of diet in Prameha.

MATERIALS AND METHODS:

The references of Prameha and its Pathya-Apathya aahara (compatible and incompatible food) are collected from various classical textbooks. References of Diabetes mellitus, dietetics are collected from modern texts books, published articles, internet sources etc.

Table no.1 Prameha Pathya Apathya Aahara^{3 a,b,c}:

Type of Ahara (food)	Pathya (compatible food)	Apathya (incompatible food)
Cereals	Yava (Barley), Truna dhanya (the group of grains produced by grass like plants), Godhuma (wheat), Kodrava (Paspalum scrobiculatum), Uddalaka (Cordia dichotoma), Shyamaka (Panicum Frumentaceum), Shastika shali(Oryza sativa)	Shali (rice), Navinadhanya
Pulses	Chanaka (chickpea), Adhaki (pigeon pea), Kulattha (Dolichos biflorus), Mugdha (green gram), Thuvari (horse gram)	Masha (black gram), Nishpava (Dolichos lablab)
Spices	Maricha (piper nigrum), Haridra (Curcuma longa), Ardraka (Zingiber officinale), Lashuna (Allium sativum), Methi (Trigonella Foenum), Saindhava lavana (Rock salt)	Excessive spices
Fats & oils	Sarshapa (Brassica campestris), Atasi (Linum usitatissimum), Danti (Baliospermum montanum), Ingudi (Balanites aegyptiaca) taila, Aja mamsa (goat meat), Sashaka mamsa (Rabbit meat), Kapota (pigeon), Titira (Grey Francolin), Lavaka (Bustard Quail), Harina (deer)	Ghee, oil cake of tila, Pastry, Payasa (Kheer rice pudding), Krishara (gruel), meat of marshy land animals.
Vegetables	Patola (Trichosanthes dioica), Shigru (Moringa oleifera), Methika (Trigonella Foenum), Karavellaka (Momordica Charantia), Karkatee (Cucumis utilissimus), Gojihawa (Onosma bracteatum)	Aluka (potato)
Fruits	Amla (Embelica officinalis), Jambu (Myrtus cumini), Bilva (Aegle Marmelos), Beejapura (Citrus medica), Mahajambira (), Sevaphala (), Tinduka(Diospyros peregrina)	Fully ripen fruits like Mango, banana, papaya, jack fruit, pineapple etc..
Drinks	Takra (butter milk), Madhuudaka (water mixed with honey), Sarodaka (water boiled with the heart-wood of Khadira etc...), Kushodaka (water boiled with Kusha), Triphalarasa(juice of Terminalia chebula Linn, Terminalia bellerica Roxb., Embelica officinalis), Sidhu (a type of wine), Madhuvika (type of wine)	Ikshurasa (Sugar cane juice), ksheera (milk) with sugar, fresh wine, curd which are mostly liquid, sweet and immature in nature, different kinds of fermented beverages.

Table No. 2 Pathya Aahara(Dietary Food) And Its Nutritive Content:^{4,5}

Pathya Aahara	Energy (Kcal/100gm)	Protein g/100g	Carbohydrate g/100g	Fat g/100g	Glycemic index
Thuvvari (red gram)	330	22	60	2	08
Chanaka (chickpea)/163 gm	270	15	45	4	10
Aadhaki (pigeon pea)	343	22	63	1	22
Mudga (green gram whole)	334	24.0	56.7	1.3	29
Wheat flour	341	12.1	69.4	1.7	41
Kulattha (horse gram)	321	22	57.2	0.5	51
Godhuma-Wheat whole	346	11.8	12.0	1.54	54
Bajra	361	11.6	67.5	5.0	54
Whole rice	345	6.8	78.2	0.5	60
Jowar	349	10.4	72.6	1.9	62
Methika (Fenugreek leaves)	49	4.4	6.0	0.9	0
Aardraka (Ginger) ⁶	67	2.3	12.3	0.9	15
Karavellaka (bitter gaurd)	25	1.6	4.2	0.2	18
Lady finger	35	1.9	6.7	0.35	20
Shigru (Drumstick)	26	2.5	3.7	0.1	23
Lashuna (Garlic)	145	6.3	29.8	1.2	30
Sarshapa (mustard)	541	20	23.8	39.7	32
Haridra (turmeric)	349	6.3	69.4	5.1	83.3
Jambu (jamun) ⁷	251	0.995	14	0.23	25

Guava	51	0.9	11.2	0.3	32
Plum	52	0.7	11.1	0.5	39
Grapes	71	0.5	16.5	0.3	44
Banana	116	1.2	27.2	0.3	54
Papaya	32	0.6	7.2	0.1	60
Bilva (bael fruit)	137	1.8	31.8	0.3	--
Takra (Butter milk)	48	4	6	1	35
Madhu (Honey)	319	0.0	0.3	0.696	61
Ragi (finger millet)⁸	330	7.3	72	1.3	71

Dietary goals:⁹

1. Provide good nutrition
2. Achieve normal weight
3. Correction of abnormal metabolism
4. Delay or prevent diabetic complications

Dietary aims for the control of Diabetes

IDDM patients should be advised to consume frequent small meals, i.e., they need to plan a mid-morning, a mid-afternoon & bedtime snacks besides breakfast, lunch & dinner. This meal plan must also take into consideration of the medication being advised.

Carbohydrates:¹⁰

It is thought to be the enemy of a diabetes. Well planned diet comprises 65-70% of the total calories from food rich in carbohydrates. They are not available until after they are converted into simple sugar (glucose) and are absorbed into the blood stream. Some dietary carbohydrates like sugar is already in this form. But complex carbohydrates must be broken down into simple sugar before being available for body for use. Carbohydrates should be complex in nature & whole grains with high fiber content, this will help in - Lowering of blood sugar, help in weight reduction, help in lowering of blood cholesterol triglyceride, help in digestive disorder. Whole pulses and grains have a large amount of dietary fiber and a very high proportions of complex carbohydrates, leading to a low glycemic index.

Dietary fibers:¹¹

An average Indian diet contains about 25-35gms of crude fiber. Excellent sources of fiber like whole grains, cereals, fresh fruits, dried fruit & vegetables, contribute to the dietary fiber intake, if eaten regularly.

Food rich in fiber are

- Millet's preparations, either as cooked cereals or homemade snack
- Red beans
- Sprout from pulses, gram or beans
- Vegetables like cluster beans, curry leaves, drumsticks or lotus stem
- Guava and pomegranate are amongst the fruits with highest fiber content
- Certain items commonly used for garnishing enriches the food preparations with fiber examples green chilies, cardamom seeds, coriander.

Way to add fiber

- Use of whole wheat grain the ratio of 3:1 for chapati is better than plain wheat chapati.
- Mix equal portion of rice & whole pulses for idli, dosa & kichadi
- Select whole- wheat bread or soya bread instead of white bread
- Drink 6-8 glasses of fluid daily to help your body to use fiber effectively
- Include more of uncooked vegetables & sprouted beans for your salad

A diabetic, who is a vegetarian & consumes wholesome and coarse food with natural fiber, mixed proteins and restricted fat of unsaturated nature, will lead a healthy life.

Fats:¹²

Butter, oil, margarine are concentrated sources of energy. A gram of fat provides more than double the calories of carbohydrate & protein one gram fat is equal to 9 calories where as one gram of carbohydrate/protein is 4 calories. Choosing the right fat-all fat gives the same number of calories but they differ in nature. Saturated fats: - vanaspati, coconut oil, margarine, ghee, butter, cream etc. These saturated fats should not be used by the diabetic as they tend to increase the level of cholesterol & other lipids in blood, further elevating the incidence of complication. Unsaturated fats: - sunflower oil, safflower oil, corn oil, soyabean oil, sesame oil, groundnut oil, rice bran oil, cotton seed oil etc. are advisable. A cholesterol intake of not more than 300 mg per day would be reasonable. High cholesterol food are – beef, pork, lamb, veal, mackerel, salmon, trout, crab, lobster, kidney, oyster, sausages, liver, sweet bread, heart, tongue, egg yolk, butter, cream, cheese, condensed milk, whole milk & its products. Various ways of decreasing cholesterol & saturated fats in the diet are - The use of unsaturated oils should be restricted to ½ kg per person month, use skimmed or low-fat milk and milk products, instead of butter, use cottage cheese or dried curd, decreased use of red meat, instead use fish or chicken, bake, grill, roast, boil or steam food instead of frying them.

Proteins:¹³

It is one of the most important constituents of the diet. The high protein prescriptions to protect the diabetics against infections & diseases was found to cause stress on liver & excretion of its end products like urea/uric acid from the kidneys. Protein from the mixed sources-cereals, pulses along with the leafy vegetables are rated as high as those from animal sources-milk, eggs and meat. Protein food of animal origin like red meat, egg, cheese, whole milk and cream are also rich in saturated fats and cholesterol. Use of animal protein must be restricted if the patient has vascular complications. Instead, one can take vegetable proteins derived from pulses, cereals, mushroom, nuts and leafy vegetables, vegetarians are advised to take ample amount of soya bean and its products, to improve the quality of the diet. Along with the use of whole grains and pulses, at least one third of the total protein requirement should be from low fat milk, curds, paneer, (cottage cheese) fish, chicken or egg white. Milk is a good source of calcium and is a complete food with essential basic requirements.

Soya milk has more nutritive value than the animal milk, it is better suited for Diabetic & heart patients. 276ml of soya milk contains protein(8.6gms), unsaturated fats(4.9gms), carbohydrates(4.9gm), dietary fiber(4.5gms), iron(4.9gms)¹⁴.

Pulses & legumes¹⁴

They are significant sources of proteins other than proteins they are rich sources of vitamin B & on germination also become rich in Vitamin C. Whole pulses & gram have a large amount of dietary fiber leading to a low glycemic index. All food items involving a combination of cereals plus pulses are recommended. Kichadi (Rice: Pulse 1:1), Idli & dosa (Rice: Pulse 1:1), Dhokla/ misi roti (Wheat atta: Channa 4:1). There is less destruction of vitamins & minerals in roasting & puffing of pulses & cereals. The quality of proteins from a mixture of cereals & pulses is superior in nutritional values. The most efficient combination is that of 4 parts of cereal protein & one part of pulse protein.

Vitamins & minerals

Use of fresh green vegetables is recommended as they are rich source of minerals & vitamins. A serving of fresh fruits can also be included.

SOME OF THE FOOD PREPARATIONS FOR PRAMEHA PATIENTS MENTIONED IN CLASSICS:

The patient suffering from Parmeha should be given the following food:

- Manthas, kashayas (decoction), Barley powder, linctus prepared of barley & other like eatables.
- Yavaudana (cooked barley) without adding any unctuous articles, Vatya (barley-porridge) Saktu (roasted corn flour) & Apupa (pan cakes) mixed with the meat soup of gallinaceous & pecker birds & animals inhabiting arid land,

- Old rice cooked & mixed with the soup of green gram etc & preparation of bitter vegetables.
 - Cooked Shatika rice & Truna danyas mixed with the oil of Danti, Ingudi, Atasi & Sarshapa
- Yavauduna is prepared by boiling dried & crushed barley grains & removing of excess water, when the de-husked & crushed barley grains are boiled & the excess water is retained in the preparation, it is called vatya. Shyamaka & such other types of rice taken together are called truna dhanyas. Apupas are prepared from barley paste.

Importance of barley

Barley should constitute the principal ingredient of food of the patient suffering from Prameha. The patient suffering from Kaphaja Prameha should take eatables prepared of barley mixed with honey, barley soaked in the decoction of Triphala & kept overnight mixed with honey. It is refreshing diet. It should be taken by the patient suffering from Prameha regularly to overcome the disease.

Barley should be soaked separately with each of the decoction prescribed for the treatment of Kaphaja Prameha & taken by the patient in the form of saktu (roasted flour), Apupa (pan cake), dhana (fried barley) & other types of eatables along with jagerry. Various eatables from the barley or bamboo seed or wheat previously eaten by asses, horses, cows, swans & deer & collected from their dung should be given to the patients suffering from Prameha¹⁵.

Discussion:

The goal in the management of diabetes is to render the subject, symptom free, restore normal blood glucose level, achieve the ideal body weight. The main aim of dietary approach is to encourage a sensible eating pattern within the framework of the food habits. To reduce the abnormality & complications, requires consideration of proper balance of all the constituents of food i.e., Carbohydrates, proteins, fats, fibers, vitamins and salt. Proteins should be allowed in the usual amount, unless restricted because of renal impairment. Fats & oils should be allowed in moderation, except in case of total energy restriction. Unsaturated fats are preferable. Vegetables are freely allowed. Two to three portions of fruits are allowed daily. Milk intake should be restricted to 0.25-0.5 liters daily, low fat milk is preferred. Starch should be taken as measured quantities of bread (unrefined flour), cereals, plain biscuits & potatoes. Fiber can be obtained from natural sources.

The majority of food articles mentioned in the Pathya of prameha fall under lower glycemic index values, lesser fat content, high protein. Which is exactly what is necessary for a Pramehi rogi to maintain his health. As diabetes is a metabolic disorder, physical activities like exercise, walking, jogging, yoga etc done according to ones strength adds additional benefit to combat the disease.

Conclusion:

The medicines & food articles mentioned in the classics are mainly of Tikta (bitter), Kashaya (Astringent), Katu rasa (pungent), Sushka (dry), Chedana guna (scraping property), Ushna virya (hot potency). The diet should be prescribed according to individual's age, strength, abhyavaharana (nature of appetite) & jarana shakthi (digestive power) according to one's desha (locality), kala (time), ritu (season).

At last, proper or early diagnosis of Prameha with ideal diet, exercise & medicine will help in the management of Diabetes effortlessly. Proper Diet & Exercise will help in prevention of diabetes. Hence, Diet i.e., pathya is one of the major key in preventing as well as treating diabetes.

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