

ROLE OF PATHYAPATHYA IN MADHUMEHA WSR TO TYPE-2 DIABETES: A REVIEW

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ABSTRACT

The prevalence of Diabetes is increasing over the globe at an alarming rate. According to the International Federation of Diabetes 415 million adults around the world are suffering from diabetes and it is estimated that the numbers will reach around 642 million by 2040. Almost every 10th adult in India is estimated to be affected by Diabetes. It is one among the 10 lifestyle disorders, hence proper *ahara*, *vihara* is essential in order to prevent diabetes. So proper following of *pathyapathya* is beneficial in preventing the diseases like Diabetes. These reasons make it essential for us to understand and analyse about the importance of Ayurvedic lifestyle guidelines of adopting a healthy dietary pattern together with physical activity which are valuable tools in the prevention of Diabetes. *Ayurveda* strongly emphasise on preventive and promotive aspects of health rather than curative to maintain the health of an individual. The role of *ahara* and *vihara* are equally or even more important in preventing a disease and maintenance of life. So it is of utmost importance to stress on lifestyle modification. Present paper highlights on Role of *Pathyapathya* in *Madhumeha* w.s.r. to Type 2 Diabetes.

Keywords: Diabetes, *Madhumeha*, *Pathyapathya*

INTRODUCTION

Health has always been the prime concern for mankind. Diabetes mellitus is a common metabolic disorder prevalent all over the world. According to International Federation of Diabetes 415 million adults around the world are suffering from diabetes and it is estimated that number will reach around 642 million by 2040¹. WHO projects diabetes as the world's 7th largest killer by 2030². 90% of the diabetic patients diagnosed are type 2 in all over the world.

India has the 2nd largest number of adult diabetic patients, in which every 10th adult is estimated to be affected by diabetes. The primary cause of the epidemic of type 2 diabetes is the rapid epidemiological transition associated with changes in dietary patterns and decreased physical activity as evident from the higher prevalence of diabetes in the urban population.

These reasons make it essential for us to understand and analyse about the importance of Ayurvedic lifestyle guidelines of adopting a healthy dietary

pattern together with physical activity which are valuable tools in the prevention of Diabetes.

DIABETESMELLITUS

Diabetes mellitus is a clinical syndrome characterised by hyperglycaemia caused by absolute or relative deficiency of insulin³.

The underlying causes are....

- ✓ Defective production or action of insulin
- ✓ A hormone that controls glucose, fat, and amino acid metabolism.
- ✓ Characteristically, diabetes is a long progression.

It is characterised mainly by;

- ✓ Polyuria
- ✓ Polydipsia
- ✓ Polyphagia

TYPESOFDIABETESMELLITUS⁴

1. Type 1 Diabetes
2. Type 2 Diabetes
3. Gestational Diabetes
4. Other Specific Types-

- a. Genetic defect of beta cell function or insulin action
- b. Diseases of exocrine pancreas
- c. Drug or chemical induced
- d. Infections- pancreatitis

TYPE-2 DIABETES

Type-2 Diabetes is a metabolic disorder that results in high blood sugar or glucose levels, which is hyperglycaemia³.

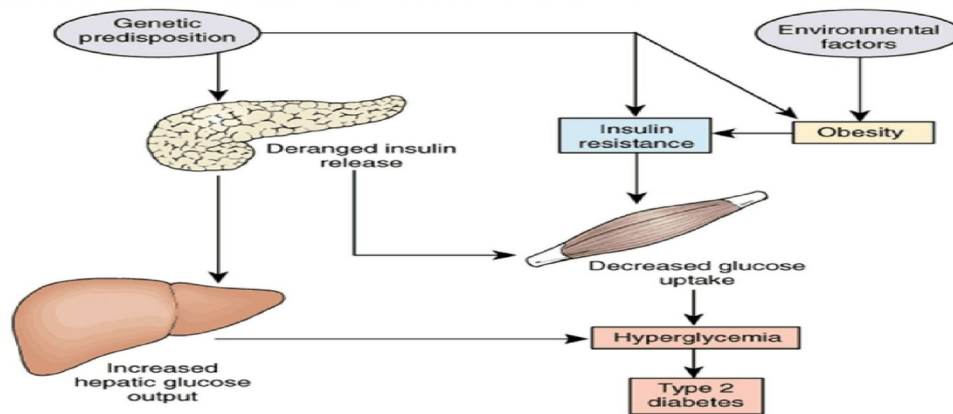
Hyperglycaemia takes place when body cannot use the natural insulin it produces; otherwise known as insulin resistance.

Type 2 diabetes also occurs when the body is unable to produce enough insulin.

The common causes are:

- ✓ High fat and cholesterol levels
- ✓ Overweight
- ✓ Sedentary lifestyle
- ✓ Smoking
- ✓ High blood pressure

PATHOGENESIS⁴



CLINICAL FEATURES OF TYPE 2 DIABETES⁵

- ✓ Onset – usually gradual in adults, but acute in children
- ✓ Presence of osmotic symptoms like polyuria, polydipsia, polyphagia
- ✓ Weight loss, weakness and lassitude
- ✓ Pruritis vulvae in females or balanitis in males
- ✓ Loss of libido or erectile dysfunction
- ✓ Blurring of vision

- ✓ Asymptomatic glycosuria
- ✓ Symptoms related to diabetes related complications.

AYURVEDA VIEW⁶

Madhumeha is one among the 20 types of *prameha*, which is caused mainly due to the *apathyanimittajanidana*.

It is presented with following features:

- ✓ Excess urination

- ✓ Madhusadrusa and madhuryataof meha(urine)
- ✓ Madhuryata of whole body

MADHUMEHA

NIDANA :

Apathya nimithaja ahara vihara : excess intake of guru, snigdha, amla, lavana anna, pana, nidra, asyasukha, not indulging invyayama, chinta, samshodhanaakurvata⁷.

SAMPRAPTI :

Nidana aggravates *kapha, pitta, meda, mamsa*, obstructs the normal pathway of vata,vitiatedvata carriesoja to *basti, mutravaha srotas*⁷.

LAKSHANA:

Prabhuta avila mutrata, kashaya madhura pandu ruksha meha, madhuryata, madhu gandha mutrata^{8,9}.

BHEDA :

1.Dhathukshayajanya

2.Margavaranaajanya (Ast.hru.ni 10/18-21)¹⁰

It is Kruchrasadhya vyadhi

YUKTHIVYAPASRAYA CHIKITSA

Yuktivyapasray achikitsa is a treatment in which the medicines, lifestyle and diet are skilfully planned and administered¹¹.

This is done after the thorough analysis of *doshadushyasammurchana* of any disease, *prakriti* of the person and *sadhyasadyata* of disease.

If a person follows the dietary rules for particular disease there is very little significance of *Aushadaprayoga* and when a person is exposed to *apathy* the *aushadasevana* has no value, because without *pathyasevana*, taken *aushada* can't cure the disease.

IMPORTANCE OF PATHYAPATHYA

The *aharavihara* which do not adversely affect the body and mind are regarded as *pathya*, those which adversely affect them are considered to be *apathya*¹². Keeping away from the *apathya* and making it a habit of consuming *pathya* is the best way of avoiding diseases

Even if the disease has manifested and is in the initial stages of manifestation with feeble signs and symptoms, following *pathya* will help in quick recovery from the disease.

In these conditions *pathya* itself work as *chikitsa*.

In chronic diseases, *pathya* becomes a mandatory co-prescription to the main line of treatment or medicines.

Without following *pathya* it is difficult to conquer the diseases and procure health.

PATHYA IN SWASTHA

Nityopayogi Aharas:

Intake of *shashtika, shali, mudga, saindhava, amalaka*, rainwater, ghee, and *jangalamamsa* and *madhu* is considered as wholesome in day to day life¹³.

Vihara:

One should be devoid of intellectual errors, take care of sense organs, should possess good memory, knowledge of place, time, and one's own capability and follow *sadvrutta*.

One should undergo proper *snehana, swedana, shodana* therapies according to the *ritu* and *rasayana* and *vajikarana* should be done to maintain the *swastha*¹⁴.

PATHYAPATHYA IN MADHUMEHA

Madhumeha is mainly caused due to *apathyaahara* and *viharasevana*, while describing the *chikitsa* for *madhumeha*, all *acharyas* have focussed on *pathyaahara* and *viharas* in the management of *madhumeha*.

It can be controlled by giving comprehensive attention to 4 aspects:

- 1) *Nidanaparivarjana*
- 2) *Ahara*
- 3) *Vihara*
- 4) *Aushada*

The role of *ahara* and *vihara* are equally or even more important than others in order to control blood sugar level as well as to prevent complications of this disease. In all the classics, *aharadravyas* are described in detail and they cover all the food groups as well.

MADHUMEHA PATHYANI

Old varieties of *shyamaka, kodrava, uddala, godhuma, chanaka, aadhaki, kulatha, Tiktashakas, jangalaharina, jangalapakshi, yavannavikriti, mudga, shaali, shashtika*¹⁵.

Patient should indulge in physical exercises, sports and games, riding on elephant, horse, chariot, foot exercises, walking, and archery etc daily¹⁶.

RECOMMENDED PATHYA AHARA FOR MADHUMEHA^{17,18,19, 20, 21}

In all the classics, ahara dravyas are described in detail and they cover all the food groups as following:

ShukaDhanya: Yava, Godhuma, ShashtikaShali, jeernashali, kodrava, uddalaka, Shyamaka

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: vishkiramamsa, pratuda, jangalamamsa, harinamamsa, shashaka, kapota, titira, lavakamamsa

Tailavarga: danti, ingudi, atasi, sarshapataila

Madhya varga: Puranasura

Udakavarga: sarodaka, kushodaka, madhudaka

Others: madhu, lasuna, saindhava

Some of the dravyas which are commonly recommended are:

ShashtikaShali

It is *snigdha, grahi, laghu, tridoshagna, svadu, sthira, hima*, (As.hru. su 6/ 8)¹⁹

Naturally occurring oils, high in manganese

Rich in high fibre

Slow release sugar helps in stabilizing blood sugar level.

Studies show that those who consume 1&1/2 cup daily reduce their risk of developing diabetes by 60%.

Yava (Barley)

Yava is ruksha, shita, guru, svadu, sara, vitvatakrut, vrushya, sthairyra, kara (as.hru.su 6/13)¹⁹

It contains fibres particularly beta- glucan soluble fibres.

Highly recommended in diabetic diet in different forms.

Godhuma(Wheat)

Godhuma is vrushya, shita, guru, snigdha, jivana, vatapittahara, sandanakara, madhura, sthairyakrut (as.hru.su 6/15)¹⁹

Source of insoluble fibres, whole wheat flour protects from risk of insulin resistance

Mudga(Green gram)

Mudga is kasaya, svadu, grahi, shita, laghu, medasleshma pitta hara (as.hrd.su. 6/17)¹⁹

Full of complex carbohydrates in form of high fibre, which aids digestion

Stabilizes blood sugar and controls its sudden rise after meal.

Kulatha(Horse gram)

Kulatha is laghu, ushna, pakaamla, kaphamedohara (ast.hru.su 6/19)¹⁹

Raw form has the ability to reduce hyperglycaemia by slowing down carbohydrate digestion and reduce insulin resistance.

Shaka&Phalavargas

Delay sugar digestion and absorption
 Improve insulin sensitivity and glucose utilisation
 Rich fibre content and phytates- modulates glycaemia
 Rich in chromium

Madhu (Honey)

*Madhu is madhura, kasayaanurasa, ruksha, shita, agnideepana,laghu,lekhaniya, hrudya,medohara (su.su 45/132)*²²

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

Amalaki(Goose berry)

*Amalaki is pancha rasa yukta (except lavana), ruksha, shita, tridoshahara, vayastapak (su.su 46/143)*²³

*Amalaki*contains chromium
 Stimulates the beta cells to secrete insulin
 Contains natural vitamin C, minerals like Ca, Fe etc

Haridra (Turmeric)

*Haridra is katutikta ,ruksha, laghu, ushna, kaphapittahara, varnya,pramehahara (bha.pra 6/ 196,197)*²⁴

Curcumin extracts contains anti diabetic properties
 Improves beta cell functions of pancreas
 Reduce insulin resistance

PATHYA VIHARA

*Vyayama, praghadaudwartana (kolakulathadichurna, triphalachurna, saileyadichurnaetc), nityakasayasnana, jalaseka, lepana of agaru, ushira, twak, ela, chandana, nisha jagarana*²⁵

Rich people- *Niyudhakreeda, gajacharya, padacharya,carving shila or ratha*²⁶.

Poor people - *Walking of 100 yojana, ploughing fields or digging well*²⁶.

Follow *sadvrutta*

Exercising 30 minutes a day reduces the risk of diabetes. Some of the exercises that one can follow are: walking every day, climbing stairs, swimming, stationary bicycling and practicing yoga.

BENEFITS OF PHYSICAL ACTIVITY²⁷

✓ Decrease insulin resistance/ improve insulin sensitivity

- ✓ Decrease overall adiposity
- ✓ Reduce central adiposity
- ✓ Improve blood glucose levels
- ✓ Desirable changes in muscle tissue.
- ✓ Lowers BP and cholesterol
- ✓ Relieves stress
- ✓ Improves blood circulation, strengthens heart.

ASANAS AND PRANAYAMA²⁸

Asanas help the stimulation of pancreas gland there by increasing the insulin secretion. Helps lessen depressive symptoms in adults.

1. *Suryanamaskara*
2. *Sarvangasana*
3. *Matsyasana*
4. *Dhanurasana*
5. *Halasana*
6. *Matsyasana*
7. *Vajrasana*

8. *Ardhamatsyendrasana*

9. *Pavanamuktasana*

Pranayamas are very much helpful in controlling blood sugar level as well as improving quality of life in diabetic patients.

1. Rythemic breathing

2. Alternate breathing with retension of the breath

3. *Bhramari* and *bhasrika pranayama*

4. *Kapalabati pranayama*

DIET CHART FOR TYPE 2 DIABETES

(1500 calories diabetic diet chart)

Suggested by National Institute of Nutrition, India.²⁹

Food	Vegetarian (g)	Non vegetarian (g)
Cereals	225	250
Pulses	60	20
Leafy vegetables	200	200
Other vegetables	200	200
Fruits	100	100
Milk	300	150
Oil	15	20
Flesh	-	70

This diet provides	Grams	% of calories
Protein	60	15.5
Fats	37	21.5
Carbohydrates	244	63

APATHYA AHARA AND VIHARA

APATHYA AHARA:

*Madhuraamlalavana rasa, abhishyandiaharas, Sauviraka, Tushodaka, Suktha, Maireya, Sura, Asava, Toya, Paya, Taila, Gritha, gudavaikriti, Ikshuvikara, NavannaPana, Dadhi, Pishtanna, Amla, Yavagu, Pana, Gramya Anupa Mamsa.*³⁰

Currently the unhealthy food habits which leads to diabetes are : Sweeteners, soft drinks and beverages, sweet fruit juices, white rice, bread and flour, full fat diary, fatty cuts of meat, tinned or preserved foods, fried foods, alcohol, pastries, pizza, *maida* preparations.

APATHYA VIHARA:

*Avyayama, Panchakarma Atiyoga, mutravegadharana, Dhumapana, Svedana, Raktamokshana, Vyavaya, Anasana, Diwaswapna, atinidra, VishamaSarira Asana*³¹.

Sedentary lifestyle immediately burdens the beta cells of Langerhans, which lead to the insulin resistance.

It is proved that high fat and meat intake were associated with a higher risk of type-2 diabetes.

Lack of exercises and excess fat intake is reported to decrease the HDL cholesterol levels in the blood and may adversely affect lipid profile and impaired glucose uptake in the body.

Thus increased eating and dietary irregularities, physical inactivity contributes to disturb the carbohydrate and lipid metabolism and result in *madhumeha*.

DISCUSSION

Aharas having the properties like *lekhana, vatahara, medhagnivardana, balya* helps in overcoming *bahu* and *abadhameda*.

Tikta rasa pradhanashakas are *laghu* and *ruksha* which helps in the *sthirikarana* of *deha* and *shoshana* of *dushya* in *madhumeha*.

Foods containing high fibre help in delaying digestion and thus lowering calories.

Physical exercises help in stimulating pancreas for the secretion of insulin and absorption of glucose and maintain blood sugar level.

CONCLUSION

Ayurveda has given wide description about *ahara* and *vihara* which are told under the *prameha* and these *aharaviharas* are relevant in day to day life. The prevention of diabetes by lifestyle intervention is very much essential in present era. This is mainly focused on the increased physical activity and dietary modification. It is considered as the comprehensive approach to prevent and treat diabetes. Though *madhumeha* is a *yapyaroga*, these methods help to lead a healthy and happy life.

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