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

Karthikeya Prasad¹, Nithya Johny²

¹Assistant Professor, ²M.D Scholar,
Department of Panchakarma, KAMC Mangalore, Karnataka, India

Email: drkarthikshet@gmail.com

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 pathyapathyā 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 Pathyapathyā in Madhumeha w.s.r. to Type 2 Diabetes.

Keywords: Diabetes, Madhumeha, Pathyapathyā

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. So proper following of pathyapathyā is beneficial in preventing the diseases like Diabetes.
pattern together with physical activity which are valuable tools in the prevention of Diabetes.

**DIABETES MELLITUS**

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

**TYPES OF DIABETES MELLITUS**

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

**TYPE-2 DIABETES**

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

**PATHOGENESIS**

**CLINICAL FEATURES OF TYPE 2 DIABETES**

- 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 VIEW**

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 madhuryata of 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, vitiated vata carries oja to basti, mutravaha srotas⁷.

**LAKSHANA:**
Prabhuta avila mutrata, kashaya madhura pandu ruksha meha, madhuryata, madhu gandha mutrata⁸,⁹.

**BHEDA:**
1. Dhathukshayajanya
2. Margavaranajanya (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 sadhyasadhyata 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 apathy⁴. Keeping away from the apathy 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 swastha¹⁴.

**PATHYAPATHYA IN MADHUMEHA**

Madhumeha is mainly caused due to apathyahara and viharasevana, while describing the chikitsa for madhumeha, all acharyas have focussed on pathyaaahara 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 Tikashakas, jangalakarina, jangalapakshi, yavannavikriti, mudga, shaali, shashtika¹⁵.
Patient should indulge in physical exercises, sports and games, riding on elephant, horse, chariot, foot exercises, walking, and archery etc daily\textsuperscript{16}.

**RECOMMENDED PATHYA AHARA FOR MADHUMEHA**\textsuperscript{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**:

<table>
<thead>
<tr>
<th>ShashtikaShali</th>
</tr>
</thead>
<tbody>
<tr>
<td>It is snigdha, grahi, laghu, tridoshagna, svadu, sthira, hima, (As.hru. su 6/ 8)\textsuperscript{19}</td>
</tr>
<tr>
<td>Naturally occurring oils, high in manganese</td>
</tr>
<tr>
<td>Rich in high fibre</td>
</tr>
<tr>
<td>Slow release sugar helps in stabilizing blood sugar level.</td>
</tr>
<tr>
<td>Studies show that those who consume 1&amp;1/2 cup daily reduce their risk of developing diabetes by 60%.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Yava (Barley)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yava is ruksha, shita, guru, svadu, sara, vitvatakrt, vrushya, sthairya,kara (as.hru. su 6/13)\textsuperscript{19}</td>
</tr>
<tr>
<td>It contains fibres particularly beta-glucan soluble fibres.</td>
</tr>
<tr>
<td>Highly recommended in diabetic diet in different forms.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Godhuma(Wheat)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Godhuma is vrushya, shita, guru, snigdha, jivana, vatapittahara, sandanakara, madhura, sthairyakrut (as.hru. su 6/15)\textsuperscript{19}</td>
</tr>
<tr>
<td>Source of insoluble fibres, whole wheat flour protects from risk of insulin resistance</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mudga(Green gram)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mudga is kasaya, svadu, grahi, shita, laghu, medasleshma pitta hara (as.hrd.su. 6/17)\textsuperscript{19}</td>
</tr>
<tr>
<td>Full of complex carbohydrates in form of high fibre, which aids digestion</td>
</tr>
<tr>
<td>Stabilizes blood sugar and controls its sudden rise after meal.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Kulatha(Horse gram)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kulatha is laghu, ushma.pakaamla, kaphamedohara (ast.hru.su 6/19)\textsuperscript{19}</td>
</tr>
<tr>
<td>Raw form has the ability to reduce hyperglycaemia by slowing down carbohydrate digestion and reduce insulin resistance.</td>
</tr>
</tbody>
</table>
**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)
- 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 yuka (except lavaana), ruksha, shita, tridoshahara, vayastapak (su.su 46/143)
- 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)
- Curcumin extracts contains anti diabetic properties
- Improves beta cell functions of pancreas
- Reduce insulin resistance

**PATHYA VIHARA**

- **Vyayama**, praghadaudwartana (kolakulathadichurna, tripalachurna, satleyadichurnaetc), nityakasayasnana, jalaseka, lepana of agaru, ushira, twak, ela, chandana, nisha jagarana
- Rich people- Niyudhakreeda, gajacharya, padacharya,carving shila or ratha.
- Poor people - Walking of 100 yojana, ploughing fields or digging well.
- 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 ACTIVITY**

- 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 PRANAYAMA**

**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.  

<table>
<thead>
<tr>
<th>Food</th>
<th>Vegetarian (g)</th>
<th>Non vegetarian (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cereals</td>
<td>225</td>
<td>250</td>
</tr>
<tr>
<td>Pulses</td>
<td>60</td>
<td>20</td>
</tr>
<tr>
<td>Leafy vegetables</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td>Other vegetables</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td>Fruits</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Milk</td>
<td>300</td>
<td>150</td>
</tr>
<tr>
<td>Oil</td>
<td>15</td>
<td>20</td>
</tr>
<tr>
<td>Flesh</td>
<td>-</td>
<td>70</td>
</tr>
</tbody>
</table>

This diet provides:  

<table>
<thead>
<tr>
<th></th>
<th>Grams</th>
<th>% of calories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protein</td>
<td>60</td>
<td>15.5</td>
</tr>
<tr>
<td>Fats</td>
<td>37</td>
<td>21.5</td>
</tr>
<tr>
<td>Carbohydrates</td>
<td>244</td>
<td>63</td>
</tr>
</tbody>
</table>

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.  

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 dairy, fatty cuts of meat, tinned or preserved foods, fried foods, alcohol, pastries, pizza, maida preparations.  

APATHYA VIHARA:  
Ayyavama, Panchakarma Atiyoga, mutravegadharana, Dhumapana, Svedana, Raktamokshana, Vyavaya, Anasana, Ditwaswapna, atinidra, VishamaSarira Asana.  
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  

Ahuras 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 shhirikarana 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.

**REFERENCES**


Source of Support: Nil
Conflict Of Interest: None Declared