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AN AYURVEDIC REVIEW OF STHULA PRAMEHI (TYPE II DIABETES MELLITUS)

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ABSTRACT
Obesity (*Sthaulya)* is strongly associated with increase in risk of type 2 diabetes mellitus (T2DM). In 2020, according to the International Diabetes Federation (IDF), 77 million people have diabetes in the world belong to India. Obesity is a major cause of increased insulin resistance. Diabetes mellitus (DM) is a clinical syndrome characterised by hyperglycaemia due to absolute or relative deficiency of insulin. Diabetes Mellitus can be classified into two broad categories: Type I DM and Type II DM. Type I DM is a result of absolute deficiency of insulin while type II DM is a heterogeneous group of disorders characterised by variable insulin resistance, impaired insulin secretion and increased glucose production. *Medo Pradoshaja Vikara* the prodromal symptoms of *Prameha*. *Prameha* signifies urinary disorders leading to the diabetes mellitus related symptoms. It is also characterized by the passing of turbid urine in excessive quantity, depending upon the causative factor, constituency and quantity of urine etc. *Dhatwa- agnimandya* is sighted as a main cause behind the development of pathology of disease. Treatment including all the three aspects that is internal medication, Diet and Exercise.

KEYWORDS: *Prameha, Sthaulya*, Type II Diabetes Mellitus, Obesity.

INTRODUCTION

Obesity is a major and basic cause of lifestyle disorders like Diabetes mellitus (T2DM), Coronary heart disease (CHD) and Hypertension. Obesity (*Sthaulya*) is increasing at an alarming rate in developed industrialized countries which are undergoing rapid nutrition and lifestyle transition. According to the 2019 National Diabetes Survey report released by the Ministry of Health and Family Welfare, the prevalence was found to be 11.8% in people over the age of 50. The prevalence was similar in both male (12%) and female (11.7%) populations.[1] The estimates in 2019 showed that 77 million individuals had diabetes in India, which is expected to rise to over 134 million by 2045.[2] Diabetes Mellitus (DM) is one of the lifestyle related and noncommunicable diseases. It is a clinical syndrome characterised by hyperglycaemia due to absolute or relative deficiency of insulin. Diabetes Mellitus can be classified into two broad categories: Type I DM and Type II DM. Type I DM is a result of absolute deficiency of insulin while type II DM is a heterogeneous group of disorders characterised by variable insulin resistance, impaired insulin secretion and increased glucose production and the Obesity is a major cause of increased insulin resistance.[3]

Prameha signifies urinary disorders leading to the diabetes mellitus related symptoms. It is also characterized by the passing of turbid urine in excessive quantity, depending upon the causative factor, constituency and quantity of urine etc.[4] *Basti or Mootrashaya* (Urinary bladder) is the main site of pathogenesis.[5] *Dhatwa- agnimandya* is sighted as a main cause behind the development of pathology of disease. The current management of both Diabetes and Obesity deals with use of hypoglycaemic drugs and anti-cholesterol drugs respectively. The conventional line of treatment helps to reduce the laboratory parameters of diseases but has substantial side effects are there-diarrhea, nausea, stomach pain, weakness, unusual muscle pain ,unusual sleepiness, irregular heart rate, cancer and does not necessarily improve the quality of life of patients. In modern medicine, there is no any medicine to control or permanently cure for these diseases due to Obesity.

Nidana (Etiology)- *Acharya Charaka* mentioned that the *Ahar* and *Vihar* (Diet and lifestyle factors) having *Snigdha* (unctuous), *Sheeta* (cold), *Guru* (heavy), *Picchila* (slimy), *Madhura* (sweet), *Shlakshna* (smooth) properties, those which increase *Kapha* and vitiate *Dushyas* are the causative factors of *Madhumeha*. These factors mainly cause excessive burden on metabolism at cellular level resulting in intermediate metabolites. The compromise metabolism leads to excess production of

Meda, Kleda Lasika, Mutra, Sweda and deposition of *Meda* at various sites.[6]

Samprapti (Pathogenesis)

Acharya Vagbhatta provided the best explanation of Madhumeha's pathogenesis. According to him, there are two possible origins for Madhumeha[7]:

1. Vata aggravation brought on by Dhatukshaya.
2. By the obstruction of Vata brought on by the Doshas that cover it.

Due to the loss of Oja, Madhumeha, which is brought on by Dhatukshaya, manifests as a thin and asthenic person. All of this represents an Ojus imbalance, or ojakshaya. The vitiated Kapha and Meda in Margavaranjanya Madhumeha obstruct Vata's movement. Madhumeha is manifested when the blocked Vata becomes vitiated once more and carries Ojus to Basti.10 According to Ayurveda, responses take the form of disorders not manifesting or not manifesting at all depending on the strength of a particular feature of the aetiology, Dosha (innate pathogenic factors), and Dushyas (substratum of pathology). The disorder will not exist, or it will manifest recently, in a mild form, or without all the symptoms mentioned if these three factors do not combine together, or if they combine after a long time or in a weakened state. Contrarily, the outcome will be the opposite. Accordingly, the cause of all disorders' manifestations or lack thereof is a response.[8]

Samprapti ghataka

- ***Dosha-****Kapha* predominant *Tridosha***,** *Apana vata*, V*yana vata*[9].
- ***Dushya*** *-Meda* predominant along with *rasa*, *asruk* (*rakta*), *mamsa*, *majja*, *vasa*, *shukra*, *oja*, *lasika*, *kleda*[10] *& Sweda*.[11]
- ***Srotasa*** – *Medovaha, Mutravaha, Udakavaha.*
- ***Srotodushti*** – Mainly *atipravritti, sanga.*
- ***Sanchara*** – *Rasayni.*
- ***Agni*** *- vaishamya* of all *agnis (dhatwagnimandya).*
- ***Adhishthana*** *- Vasti, Sarva Sharira.*
- ***Udbhavasthana –*** *Amashaya.*
- ***Ama*** – *Medogata* (*Ama* produced due to *Jathragnimandya* and *Dhatvagnimandya*).
- ***Bhedavastha*** – Occurrence of *updravas* such as *Prameha pidika* and *putimamsa*.
- ***Swabhava*** – *Anushangi*.[12]

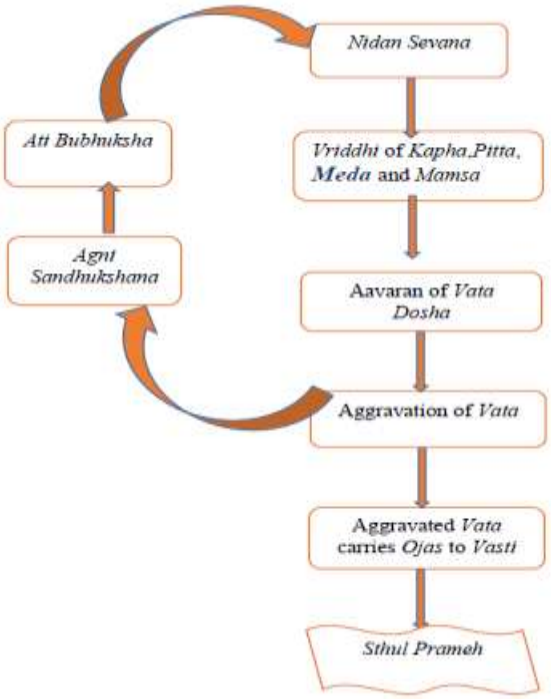

Chart 1: *Samprapti* of *sthula pramehi.*

Poorvarupa **(Premonitory symptoms):** – Premonitory symptoms include a burning sensation in the palms and soles of the feet, heaviness throughout the body, sweet-smelling, white urine with a foul odour, stupor, debility, intense thirst, dyspnea, increased accumulation of dirt in the mouth, throat, tongue, and teeth, and more hair and nail growth on the head.[13]

Rupa **(Clinical symptoms):** The primary signs of prameha are Prabhootha mutrata (Poly uria), Avila mutrata (Turbid Urine), and Medo dushti lakshanas. Madhumeha eventually results from all forms of untreated prameha.[14]

Pratyatma Lakshana **(Cardinal features) of *prameha*:**

(i) ***Prabhutamutrata****-Prameha* patient voids more urine both in quantity and frequency. Probably this is the result of *bahu-drava shleshma* in the pathology of *Prameha*.

***(ii)* *Avilamutrata*-** Patient voids urine having hazy consistency or turbidity. In general this turbidityis a result of *bahu-abaddha meda* and other *dushyas* involved in the pathogenesis ofdisease. *Gayadasa* and *Dalhana* bothdescribed that, this characteristic feature of urine isbecause of the relation between *mutra*, *dushya* and *Dosha*. The turbidity of the urineis because of its combined with the *dhatus.*

Specific symptomatology of *madhumeha*: Mentioned by *Sushruta,* explains the psycho-somatic state of *Madhumehi* patient. According to him, *Madhumehi* prefers to stand still than walking, sitting thanstanding, lying down than sitting and sleeping than lying down. This feature has beenexplained as *'Panchavidhakriya-Shrayalinga'* by *Dalhana* in context to abovequotation.[15]

Type of *prameha:* According to *Charaka Pramehi* as per body structure are of two types:
1. *Sthula* (Obese)
2. *Krisha* (Asthenic)

In comparison to Krisha or asthenic patients, *Sthula* or obese *Prameha* patients are stronger.[16] This classification is also a result of the two patient types' different treatment trajectories. Additionally, Sushruta stated that Apathya Nimittaja Pramehi's body constitution is Sthoola (obese) and that of Sahaja Pramehi is typically Krisha (thin).[17]

***Sadhyata- Asadhyata (*Prognosis)[18]**
1. *Sadhya* -Patients with early diagnosis, those who are sthoola (obese), or whose disease has an apathyaja origin are considered to be curable.
2. Yapya- Pittaja prameha and certain types of kaphaja pramehas are however helps control with treatment (palliative management).
3. Asadhya (Incurable)- Vataja describes the incurable version of prameha and inherited diabetes, a krisha (lean) patinet who is suffering with Sahaja veriety.

Updravas* (Complications)*: *Pidika, Vidradhi, Alaji, Putimamsa* due to affecting of *Mamsa and Medodhatu's.*[19]

Chikitsa (treatment)- The basic principles that applied to treat *sthula pramehi* includes-
1. *Nidana parivarjana*
2. *Shodhana Chikitsa*
3. *Shamana chikitsa*
4. *Rasayana sevana*

1. *Nidana parivarjana*-As without *Nidana* no disease can occur. So, *Nidana parivarjana* is the first treatment for any disease.[20]

2. *Shodhana chikitsa*- According to *Sushruta*[21] and *Vagbhatta* the process of *Samshodhana* should be done according to the strength of patient. In *Prameha Vamana*, *Virechana* are indicated.

***(i)* *Vamana*-** This is specially indicated in *Kaphaja Prameha*. According to *Sushruta* after considering the strength of patient, firstly teekshana *Vamana* should be given.

***(ii)* *Virechana*-**This is indicated in *Pittaja* type of *Prameha*. According to *Sushruta, Vamana* should be followed by *Virehana karma. Swedana* is contraindicated by *Shusruta* in all type of *Prameha* because ofexcessive *meda* accumulation in this disease.[22]

***(iii)* *Basti* in appropriate condition**

Some *Asthapana* bastis are indicated for *Prameha*

→ *Kashaya* of *Sursadi Gana,*

→ *Panchatikta basti- Basti* prepaired with the *kwatha* of *Patola, Nimba, Bhunimba, Rasna* and *Saptparn.*[23]

→ *Vit-Khadir basti- Basti* prepaired with the *kwath* of *Somevalk (Vit-Khadir)*

Anuvasana Basti- It is contraindicated in *Prameha* as it is a *Santarpanjanya vyadhi*.

3. *Shamana chikitsa*- The patient of *Prameha* who is not fit for *samsodhana* therapy should be treated with *shamana* treatment.

Aptarpana Chikitsa- As *Prameha* is a outcome of aggravated *Kleda* and *Kapha*, so in the beginning patients should be administered the depletion therapy (*AptarpanaChikitsa*) in *kaphaja* and *pittaja Prameha.*[24]

Following Preperations may be used judiciously in a patient of *Sthula Prameha* for effective management:

(i) *Haridra* mixed with honey should be given to drink along with juice of *Aamalki*.[25]

(ii) Decoction of *Triphala, Visala, Devadaru* and *Musta*.[26]

(iii) *Phalatrikadi kwatha*(*Phalatrika, Daruharidra, Vishala, Musta* mixed with *Haridra* powder & honey).[27]

(iv) The flowers of *Palasha* should be made into paste with cold water and should be taken along with sugar. This alleviates all types of *Prameha*.[28]

(v) Even incurable forms of *Prameha* can be cured with intake of juice of *Bhumyamalaki* in dosage of three *Gadhyana* (18 *Masha*) with powder of 20 black pepper. This formulation cures incurable *Pramehas* within seven days (*Yogaratnakara, Uttar Khanda-Prameha Chikitsa)*

Further *Acharya Sushruta* has specified *kalpa chikitsa* in form of *Tuvaraka kalpa* and *Shilajatu kalpa* in *Prameha roga* where these drugs are used as single drugs in treatment of disease.[29]

4. *Rasayana chikitsa*- As *Prameha* is a Anushangi *vyadhi* and in its vatika types- there is a condition of dhatukshaya. So *Sushruta* and *Vagbhatta* have described *Rasayana*therapy for *Prameha*. For this purpose *Shilajita, Swarnamakshika and Tuvaraka* are indicated.[30]

Specific treatment of *prameha*

The patient of *Prameha roga* who is unfit for *shodhana* therapy should be subjected to *Sanshaman chikitsa* (palliative treatment) in the form of herbal decoctions, *swarasa*, powder, *vati*, *aasava arishta*, *rasa oshdhis* and herbal preparations etc.[31]

The symptom of cured *prameha*

When the urine of a *Pramehi* patient becomes *Apicchhila, Anaavila, Vishada (Rooksa), Tikta-katu*, he should be considered to befree from *Prameha.*[32]

Pathya and apathya[33]

Shyama, Kodrava, Godhum and Kullatha which are old-are suitable to be used as foods by patients of Madhumeha (Diabetes). Vegetables of bitter taste (Tikta), meat of animals and eggs of birds of deserts like regions (Jangala mamsa), boiled Yava and its preparations, Mudag, Shali, and Shastika are all suitable as foods. Sura (beer), Buttermilk, oils, milk ghee, jaggery, foods processed with sours, sugarcane, juice, food prepared from flour, meat of animals of marshy regions should be avoided from use.

Yoga

Yoga improves all sorts of metabolism in the body. So diabetics should perform different types of yoga. Yoga will definitely help diabetes mellitus. Yoga now-a-days has attracted the attention of Western people. Common Aasana that can be very effective in Diabetes are Padmasana, Shalabhasan, Mayurasan, Suryanamaskar, Dhanurasan.[34]

Exercises

Brisk walking, jogging, bicycling, swimming, playing badminton & tennis.

CONCLUSION

Ayurveda does not regard diabetes mellitus as a disease that can be treated by mere medicine or by a dietary regimen. Although it is a yapya (not completely curable / difficult to cure) disease, persistent use of the aforementioned treatment method will not only make the patient free from Diabetes Mellitus but also safeguard their ability to live a long life (deergha jeevanam), be healthy (sukhayu), and contribute to society (hitayu). In many empirical studies, losing weight indicates a lower risk of developing diabetes. Losing one kilo of weight is linked to a lower risk of developing diabetes. Pharmacotherapy is preferable to lifestyle changes.

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