

## A Critical Study of Aetiology of *Madhumeha* (Diabetes Mellitus) in Paediatric Age Group

Dr. Urmila Maurya<sup>1</sup>, Dr. Anjana Dixit<sup>2</sup>

<sup>1</sup>Assistant Professor, Dept. of Kriya Sharir, Major S D Singh PG Ayurvedic Medical College, Farrukhabad, UP,

<sup>2</sup>Professor & HOD, Dept. of Kriya Sharir, Major S D Singh PG Ayurvedic Medical College, Farrukhabad, UP,

Corresponding Author: Dr. Urmila Maurya

### ABSTRACT

Diabetes mellitus (*Madhumeha*) is becoming fastest considerable diseases in the World. It is a metabolic disorder may result in deficiency or dysfunction of the Insulin production. *Madhumeha* has been described in details in many *Samhitas*. But the description revolves around an adult human being. Especially Aetiological factors (*Nidan*) are described keeping adult as the nucleus of the discussion. The need is to focus on *Adibalapravrutta Vyadhi* and *Janmabalapravrutta Vyadhi* in case of Paediatric age group. *Matruja* and *Pitruja* factors in *Adibalapravrutta Vyadhi* and *Rasakruta* and *Dauhridapacharkruta Vyadhi* belonging to *Janmabalapravrutta Vyadhi* are very important areas. Apart from some other factors to look for *Nidan* of Diabetes mellitus in Paediatric age group.

**Keywords:-** *Madhumeha*, Diabetes mellitus, *Nidan*.

### INTRODUCTION

*Madhumeha* is combination of two terms ‘*Madhu*’ and ‘*Meha*’ (meaning honey and excessive flow respectively). *Madhumeha* is a disease entity, characterised by the sweetness of the body tissue along with the passage of the turbid and sweet urine in excessive amount which is due to various physiological changes of the body tissue. Regarding the etiology of *Madhumeha*, like any other disease in *Ayurveda*, this is result of *Dosha* vitiation particularly the *Vata Dosha*, although there is common aetiology for all types of *Pramehas*, where in all the factors which increase the quality of *Kapha* in body are said to be the causative factors of this disease. There are the sedentary habits and increased consumption of sweets and fats in daily diet. [1] Thus, According to *Ayurvedic* texts, all *Pramehas* (urinary disorders including *Madhumeha* or Diabetes mellitus) initiate with the derangement of *Kapha*

*Dosha* that spreads, throughout the body and mixes with *Meda Dhatu* (fat) that is similar in physical properties to *Kapha Dosha*. *Kapha* mixed with *meda* affects the urinary system, thereby interfering with normal urine excretion. Vitiating other *Doshas* (e.g. *Vata*, *Pitta*), and other *Shariric Dhatu* (body tissue) and *Malas* (fluids) may also be involved in this blocked. *Acharya Charaka* while describing the prognosis of the disease *Madhumeha*, described it to be *Kulaja vikara* (meaning a disease occurring due to some genetic defect and hence may be inherited) resulting due to defect in the *Beeja* (either the sperm or the ovum). [2] *Sushruta* also mentioned the term “*Sahaja*” in context of the genetic predisposition in the pathophysiology of the disease *Madhumeha*. [3]

Diabetes mellitus, which is a syndrome of impaired carbohydrate, fat and protein metabolism caused by either lack of insulin secretion or decreased sensitivity of

the tissues to insulin. [4] The classical symptoms of diabetes are loss of weight, polyuria (frequent urination), polydipsia (increase thirst) and polyphagia (increased hunger). Diabetes is a serious metabolic with micro and macro vascular complications. These typically develop after many years, but type 1 diabetes mellitus, formerly called juvenile diabetes, is usually diagnosed in children, teenagers and young adults. Type 1 diabetes may develop in adults this is an autoimmune disease causing which result is an absolute insulinopenia. Type 2 diabetes, formerly called adult onset diabetes, is the most common form and has an insidious onset. It is commonly seen in adults. But can occur even in childhood. Familial inheritance is very common. This form of diabetes usually begins with insulin resistance and initially there is a counter regulatory hyperinsulinaemia. With time, the pancreas loses its ability to secrete enough insulin in response to meals and clinical diabetes develops. [5]

## MATERIALS AND METHODS

The *Charaka Samhita*, *Sushruta Samhita*, *Bhela Samhita*, *Ashtanga Hridaya*, *Madhavidanam* were scrutinized for relevant references regarding concept of *Nidan* of *Madhumeha* (diabetes mellitus). Critical and conceptual analysis was done for the proper understanding.

**AIMS AND OBJECTIVES:** To determine the aetiology (*Nidan*) of *Madhumeha* (diabetes mellitus) in paediatric age group.

### IMPORTANCE OF NIDAN:

In *Ayurvedic* classics, every disorder is described according to *Nidan* panchak; which comprises of *Nidan* [Etiological Factors], *Purvarupa* [Prodromal Signs], *Rupa* [Signs and Symptoms], *Upashaya* [Amelioration] and *Samprapti* [Pathogenesis]. *Nidan Panchak* has been

described to help physicians to understand the disease and to treat it successfully. Out of all the five components of *Nidan Panchak*; *Nidan* is of immense importance. In every disease, the pathology begins with *Nidan*. If physician is very well versed with the *Nidan* of a particular disease he can plan his line of treatment accordingly. Thorough knowledge of causative factors not only helps in treating the disease but also helps in preventing it. The whole process of manifestation of disease begins with *Nidan*. *Nidan Parivarjana* is therefore regarded as the best form of treatment by *Acharyas*. This discussion should highlight the importance of understanding *Nidan* of *Madhumeha* (diabetes mellitus) in Paediatric age group.

### CLASSIFICATION

**1. According to the dosheja causes these Pramehas are classified as twenty type:-** [6]

- a. *Vataja Pramehas* – 4 types
- b. *Pittaja Pramehas* – 6 type
- c. *Kaphaja Pramehas* – 10 type

Out of these, Diabetes mellitus is termed as *Madhumeha*. It is one of the 4 *Vataja Pramehas*.

**2. According to the physical management:-** [7]

- a. *Apatharpana janya*
- b. *Santharpana janya*

**3. According to the Bhela Samhita** [8]

- a. *Prakrutiprabhava (Sahajameha)*
- b. *Svakruta (Janmouttarameha)*

**4. Prameha is classified Aetiologically into Sahaja (hereditary) and Apathya Nimittaja.** [3]

*Sahaja* means to *Matapitabheejadushakruit* (chromosomal defect from parents) *Acharya Sushruta* has described seven types *Vyadhi*. These seven type are again divided into two types each. [9]

1. <i>Adibalapravrutya Vyadhi</i>	1. <i>Matrija</i>	2. <i>Pitruja</i>
2. <i>Janmabalapravrutya Vyadhi</i>	1. <i>Rasakruta</i>	2. <i>Dauhridapacharkruta</i>
3. <i>Doshabalapravrutya Vyadhi</i>	1. <i>Amashaya samuthan</i>	2. <i>Pakwashaya samuthan</i>
4. <i>Sanghatabalapravrutya Vyadhi</i>	1. <i>Shastrakruta</i>	2. <i>Vyalakruta</i>
5. <i>Kalabalapravrutya Vyadhi</i>	1. <i>Vikruta rutujanya</i>	2. <i>Avikruta rutujanya</i>
6. <i>Daivbalapravrutya Vyadhi</i>	1. <i>Vidyut ashanikruta</i>	2. <i>Pishachakruta</i>
7. <i>Swabhavabalapravrutya Vyadhi</i>	1. <i>Kalakruta</i>	2. <i>Akalakruta</i>

Out of all the above mentioned type: *Adibalapravrutta Vyadhi* and *Janmabalapravrutta Vyadhi* are the two type which are related to this topic.

#### **Adibalapravrutta Vyadhi:-** <sup>[10]</sup>

These type of disorders are of two types i.e. *Matruja* (Maternal) and *Pitruja* (Paternal) Which are derived from the manifestation of *Shukara* and *Shonita* Since, *Shukara* and *Shonita* are the basic factors for the production of *Garbha*, Any abnormality in then leads to the formation of *Adibalapravrutta Vyadhi or Sahaja* (hereditary). If *Shukra* is *dushta*, the representative of the *Pitruja* organ in it gets vitiated producing organ or pathological abnormality in the *Pitruja* organ of *Garbha*. This phenomenon is also applied to *Shonita*. So if the *Shonita* is vitiated the *Matruja* organ formed in the *Garbha* anatomically and/or pathologically gets hampered. This explains, how diabetes mellitus passes from one generation to next generation. If one of the parents have diabetes or both the parents have diabetes; their *Shukra* or *Shonita* or both gets vitiated which produces diabetes in the offspring or Due to this reason child having diabetes mellitus in early age of life or since birth.

#### **Janmabalapravrutta Vyadhi:** <sup>[10]</sup>

The another important *Nidan* is the *Janmabalapravrutta Vyadhi*. This whole section of diseases is because of the diet, behavioural changes and mental state of mother. Since, mothers have any adverse change in mental or physical state affects the child causing ailments. They are of two types -*Rasakruta and Dauhridapacharkruta*.

**Rasakruta Vyadhi:-** *Acharya Sushruta* has mentioned four essential component for the conception. They are *Rutu, Kshetra, Ambu* and *Beeja*. Out of these four factors, *Ambu* stands for *Aahara Rasa* of mother. So any vitiation in *Ambu* will be definitely reflected on *Garbha*. <sup>[11]</sup>

Embryo is originated by the aggregate of their entities, mother, father, self, suitability, nutrition and psyche. The different parts being originated from factors as maternal, paternal etc. have already been

said earlier. <sup>[12]</sup> The combination of sperm, ovum and life principle implanted in the womb is known as embryo. <sup>[13]</sup>

According to *Acharya Charaka* if pregnant women are using the sweet things constantly to the offspring suffering from the *Prameha* (diabetes), dumb or over-obese. <sup>[14]</sup> The pregnant woman gives birth to a child suffering mostly from the respective disorder the etiological factors of which are used by her.

#### **5. Other aetiology of Madhumeha in Ayurveda**

According to the particular features of aetiology, *Dosa*. (innate pathogenic factors) and *Dushya* (substratum of pathos) response occurs in the form of non manifestation or otherwise of the disorders. <sup>[15]</sup> Abundant and non compact *Medas, Mansa, Sharirajklea, Shukra, Shonita, Vasa, Majja Lasika, Rasa* and *Ojas* - these are the particular *Dushya* in *Prameha*. <sup>[16]</sup> *Prameha* arose due to intake of fatty material. <sup>[17]</sup>

The person, who indulges constantly in day sleep absence of physical activities and laziness, consumes food and drink which are cold, unctuous, sweet, fatty and liquid-should be understood as going to become a patient of diabetes. <sup>[18]</sup> Foods, drinks and activities which produce increase of *Medas* (fat), *Mutra* (urine) and *Kapha* are generally the chief causes of *Prameha*. <sup>[19]</sup>

In all the varieties of *Prameha, Vata, Pitta* and *Kapha* together form the causative *Dosa Medas, Asrk, Shukra, Ambu, Vasa, Lasika, Majja, Rasa, Ojas* and *Pisita* are the *Dushya*. <sup>[20]</sup>

#### **DISCUSSION**

Diabetes mellitus in paediatric age group is found in many cases, in nearly all classical books of *Ayurveda*. Diabetes mellitus is elaborately studied, through its etiological background pathogenesis, treatment, sign and symptoms etc. In all the *Samhitas*, every discussion revolves around grown up human and not about a minor. Especially when *Nidan* is studied, it is observed that some causative factors will never suit paediatric age group. When

different references from different sources were critically studied, a whole new concept of aetiology (*Nidan*) of *Madhumeha* (Diabetes mellitus) in paediatric age group emerged. A lot of attention must be give to antenatal and natal period *Janmabalapravrutta Vyadhi* and *Adibalapravrutta Vyadhi* holds the key for *Nidan* in this age group. *Shuddha Shukra, Shuddha Aartava, Aahara, Vihara* of female desirable for conception and after conception is very important factors in view of *Madhumeha* (diabetes mellitus).

### CONCLUSION

From above all discussion, conclusion points can down and presented as follows:-  
Aetiology (*Nidan*) of *Madhumeha* (diabetes mellitus) in paediatric age group is -

1. *Adibalapravrutta Vyadhi*
2. *Janmabalapravrutta Vyadhi*
3. *Garbhupaghatakar bhava*.

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