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

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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. Vitiated otherDoshas (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, Madhavnidanam 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 [Ammelioration] 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 Prameha – 4 types
   b. Pittaja Prameha – 6 type
   c. Kaphaja Prameha – 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 Matapitabheejadushakruti (chromosomal defect from parents) Acharya Sushruta has described seven types Vyadhi. These seven type are again divided into two types each. [9]
Out of all the above mentioned type: Adibalaprazruttva Vyadhi and Janmabalaprazruttva Vyadhi are the two type which are related to this topic.

**Adibalaprazruttva Vyadhi:** [10]

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 Adibalaprazruttva Vyadhi or Sahaja (hereditary). If Shukra is dushta, the representative of the Pitruja organ 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.

**Janmabalaprazruttva Vyadhi:** [10]

The anther important Nidan is the Janmabalaprazruttva 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 Daahiradapacharkruta. **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. [11]

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. [12] The combination of sperm, ovum and life principle implanted in the womb is known as embryo. [13]

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. [14] 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 Dushta (substratum of pathos) response occurs in the form of non manifestation or otherwise of the disorders. [15] Abundant and non compact Medas, Mansa, Sharirajkleda, Shukra, Shonita, Vasa, Majja Lasika, Rasa and Ojas - these are the particular Dushta in Prameha. [16] Prameha arose due to intake of fatty material. [17]

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. [18] Foods, drinks and activities which produce increase of Medas (fat), Mutra (urine) and Kapha are generally the chief causes of Prameha. [19]

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. [20]

**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 Janmabalapravruta Vyadhi and Adibalapravruta 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 drown and presented as follows:- Aetiology (Nidan) of Madhumeha (diabetes mellitus) in paediatric age group is - 1. Adibalapravruta Vyadhi 2. Janmabalapravruta Vyadhi 3. Garbhupaghatakar bhava.

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