Ayurveda and Modern considerations on Pathogenesis and Prognosis of Diabetes

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Abstract

Prameha is a condition described in traditional Ayurveda texts and this disease associated with other conditions including obesity, stress and other metabolic syndrome. Indulgence in the Nidanas (causes) leads disturbances in Kapha associated with Pitta. The imbalance of Kapha and Pitta increases Kleda in body and these all consequences initiates pathogenesis of Prameha. Modern science described disease as diabetes and mentioned several pathological events associated with disease including disturbed metabolic and hormonal regulations, etc. This article emphasizes ayurveda and modern considerations related to the pathogenesis and prognosis of diabetes.

Keywords: Ayurveda, Diabetes, Prameha, Kapha, Kleda

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1. Introduction

Prameha is a Tridoshaja Vyadhi but predominately involves vitiation of Kapha Dosha. The etiological factors disrupt Kapha and Pitta along with Medovaha srotas, the major pathological events are associated with Kapha vitiation that increases Kleda resulting increased urine production and excessive urination. (1-4) Sedentary lifestyle and poor eating habits, etc. mainly causes Prameha, the major symptoms of disease as per different Ayurveda texts depicted in Table 1.

Table 1. Symptoms of disease as per various Ayurveda literatures

<table>
<thead>
<tr>
<th>Purvarupa</th>
<th>Charak</th>
<th>Sushrut</th>
<th>Ashtang Sangraha</th>
<th>Ashtang Hridaya</th>
<th>Madhav Nidan</th>
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<td>Karpadspatata</td>
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<td>Mukh, Talu, Kantha Shosha</td>
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<tr>
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<tr>
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</tr>
</tbody>
</table>
2. SAMPRAPTI

Samprapti Ghatakas:

- Dosha: Shleshma Pradhanata Tridosha
- Dushya: Mamsa, Kleda, sukra, vasa, majja, lasika, rasa, oja
- Srotas: Medovaha, mutravaha, udakavaha
- Srotodushti: Atipravrutti, sanga
- Agni: Dhatvagnimandya
- Adhkshana: Basti, sarvashareera
- Udhhavasthana: Amashyokta & Pakwashyoktavyadhi

A) Samanya and General Samprapti

Charaka has described Samanya (General) Samprapti of Prameha elaborately in Nidanathan. It may be explained on the basis of Shatkriyakala. The Samanya samprapti process commences from the Nidanasthan. (4-8)

a) Sanchaya

The excessive indulgence in Nidan sevan of guru, Snigdha aahar and Ayavayamadi vihar leads to Kaphadosha sanchaya. It is mentioned that Kleda which gets Sanchita here is having the quality Bahumutratva vividly supported by charaka. In Prakrut avastha the Kapha remains in buddha form i.e. solid or bind form but due to Nidan sevan its Prakrita badha form changes to Dravatva form and that too in excess amount i.e. Bahudrava.

b) Prakop

These three factors Nidan, Dosha and Dushya gets combine together in such a precise way that they lead to Prakopa of Bahudrava kapha rapidly and get Prameha in future. In the first two stages the Anukulatva between Nidan and Dosha ensures. Kaphakar Aahar vitiates Kapha dosha without any resistance due to similar properties.

The Anubandha between Vishesh (Anukul) Nidan and Kapha dosha leads to increase in amount of Kapha which in future develops Prameha. The Bahudrava dosha is prove to develop Prameha and as it is already present in excess quantity from the beginning. Hence it gets aggravated rapidly when the Anukul nidanas are continued. This type of Anukulatva may be seen in person having Kaphas prakriti and who are having genetic predisposition of Prameha.

c) Prasara

In this stage the provoked Kapha gets spread all over the body occurring to Sharir shardhilya being one of the Anukula factors for Nidana towards the Dosha.

d) Sthan Samshraya

The provoked kapha has affinity towards bahu-abadha-meda due to their similar properties and gets ligated there.

The provoked kapha (Vikruta) after combining with bahu-abadha-meda causes its vitiation. The other important dushyas are sharir kleda and mamsa, which are already increased in large quantity, prior to vitiation of kapha. The provoked kapha with vitiated meda gets combined with sharir kleda or mamsa or both.

This is an important stage because the prodromal symptoms of the disease are manifested in this stage. It is essential to diagnose the disease at this stage to prevent further progress of the disease for better prognosis.

e) Vyakti

In this stage of Vyakta avastha two types of manifestation occurred:

i) Mutravaha srotodushti due to sharir kleda dushti if vitiated kapha and meda come in contact with sharir kleda then it changes in mutra, the vitiated kapha impedes the opening of mutravaha srotasa which are already filled with vitiated meda and kleda, thus producing the disease prameha.

ii) The puta pidka due to mamsa dushti deviation.

The above two manifestation of kleda and mamsa dushti will occur simultaneously or in two stages.

Inspite of so many poorvarupas only two lakshanas have been mentioned in the classics, i.e. prabhuta mutrata and avil mutrata.

Prabhut mutrata occurs as a result of vruddhi swarupa. i.e. kleddhushti and avil mutrata is one of the sign of kled dushti.

f) Bheda

In this stage various complications of the disease manifest and the disease progress towards asadhyatwa i.e. disease becomes incurable.

The prameha disease attains shairya (Stability) and Asadhya (Incurability) state because of its prakruti and vikruti.

Hence Chakrapani has explained the term prakruti and vikruti that if all the natural properties of kapha become abnormal, the prameha gets chronic and if kapha get provoked further condition of incurability ensures.

Involvement of raktadi dhatu which is not similar in qualities to kapha is considered as vikruti. (7-9)

B) Samprapti according to Doshik Predominance

a) Kaphaj prameha

The etiological factors first cause the provocation of kapha because of its close similarity to the related hetu. This aggravated kapha then spreads all over the body rapidly due to sharir shaithilya. Medadhatu being excess in quantity. Abadhaand having similar properties with the kapha, the provoked kapha while spreading gets amalgamated with meda dhatu causing vitiation.

This annexation of vitiated meda and kapha comes in contact with sharira kleda and mamsa.

Which are already in excess quantity resulting putimamsa pidaka on the other hand the vitiated kleda gets converts into mutra. The kapha along with meda and kleda impede the openings of mutravah srotasa resulting into prameha.
Type 1 Diabetes Mellitus

The basic phenomenon in type 1 DM is destruction of beta cell mass, usually leading to absolute insulin deficiency. It can be explained on the basis of 3 mutually inter linked mechanisms genetic susceptibility, auto immune factors and certain environmental factors.

- At birth, individuals with genetic susceptibility to this disorder have normal beta cell mass.
- Beta cells act as auto antigens and activate CD4+ T Lymphocytes bringing about immune destruction of pancreatic beta cells by auto immune phenomena and takes months to years. Clinical features of diabetes manifest after more than 80% of beta cell mass has been destroyed.

The trigger for auto immune process appears to be some infectious or environmental factor which specifically targets beta cells.

Type 2 Diabetes Mellitus

The basic metabolic defect in type 2 DM is either delayed insulin secretion relative to glucose load (impaired insulin secretion) or the peripheral tissues are unable to respond to insulin (insulin resistance).

Type 2 DM is a heterogeneous disorder with a more complex etiology and is far more common than type 1, but much less is known about its pathogenesis. A number of factors have been implicated through, but HLA association and auto immune phenomena are not implicated. These factors are as under

- Genetic factors
- Constitutional factors
- Insulin resistance
- Impaired insulin secretion
- Increased hepatic glucose synthesis

In essence, hyperglycaemia in type 2 DM is not due to destruction of beta cells but is instead a failure of beta cells to meet the requirement of insulin in the body. Its pathogenesis can be summed up by interlinking the above factors asunder:

- Type 2 DM is a more complex multi-factorial disease.
- There is greater role of genetic defect and heredity.
- Two main mechanisms for hyperglycaemia in type 2 DM – insulin resistance and impaired insulin secretion are interlinked. While obesity plays a role in of insulin resistance, impaired insulin secretion may be from many constitutional factors
- Increased hepatic synthesis of glucose in initial period of disease contributes to hyperglycaemia.

4. Conclusion

Prameha described in traditional Ayurveda texts as disease of Kapha vitiation. Indulgence in the Nidanas causes disturbances in Kapha which increases Kleda and finally initiates pathogenesis of Prameha. Modern science described diabetes as disease of metabolic and hormonal disturbance.

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Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of this article.

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