RESEARCH ARTICLE

AN OVERVIEW OF VIKALPA SAMPRAPTI IN MADHUMEHA W.S.R TO TYPE II DM.

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Abstract

Diabetes mellitus refers to a group of common metabolic disorders that share the phenotype of hyperglycaemia. Madhumeha is known to mankind since long, but with brief description. This can be taken as the equivalent of the menace of current era, Diabetes Mellitus. Ayurveda states that it occurs due to bahudrava shleshma which leads to medodusti. This medodusti in turn vitiates mamsa, shukra, shonita, vasa, majja, lasika, rasa and ojas in the vyadhi samprapti which are the ten distinct dusyas in this disease. Diabetes mellitus is counted among the major diseases which are responsible for morbidity and mortality. At least 171 million people worldwide have diabetes; this figure is likely to be more than double by 2030. Around 3.2 million deaths every year are attributable to complications of diabetes. Ayurveda believes in the tenet of “Samprapti Vighatanameva Chikitsa”, hence understanding of Madhumeha Samprapati in detail paves ways for an appropriate and fruitful treatment plan.

Introduction:-

Madhumeha known to mankind since long, is found to share features with Diabetes mellitus. The WHO estimates that as many as 346 million people suffer from diabetes worldwide, with India and China being the largest contributors to the world’s diabetic load. India is having 18 % of total diabetic population of the world with 31,705,000 patients earning India, the title “Diabetes Capital” of the world.

Madhumeha is one among the 20 sub types of pramehas and is predominantly a vatika disease. Here Ayurveda believes that it occurs mainly due to bahudrava shleshma which leads to medo dusti primarily. This medodusti in turn vitiates mamsa, shareera kleda, shukra, shonita, vasa, majja, lasika, rasa and ojas, which means all the doshas and dhatus, except asthi are involved. The prameha is classified as Sahaja and apathyam nimitta, Krisha and sthoola, Durbala and Balawan1,2. Similarly the disease diabetes mellitus can be classified into type I (absolute insulin deficiency) and type II (insulin resistance).

Aims & objectives:-

To analyze the Madhumeha Samprapti in detail, with special focus on Vikalpa Samprapti

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Materials & methods:
Careful perusal of the Bruhatrayees, the Greater Triad of Ayurvedic literature like Charaka Samhita, Sushrutha Samhita and Ashtanga Hrudayam, the Laghutrayees along with the contemporary textbooks and reference books on internal medicine is done.

Etymology:
The word Madhumeha consists of two words: Madhu and Meha. The word Madhu is derived from the root “मधु, कली, मन्न्वन्ते विशेषेण जानन्ति जनम यस्मिन् ।” The word ‘Meha’ has the following meaning: मेहः, पु. (मेहतत शुक्रादिरनेतत | मत्त+ घञ्च ।) प्रमेहरोगः | इन्थ्यम: (2/6/56)

Definition of madhumeha:
Meha word here is mainly related with the excretions through urine. So the definition is: the clinical entity in which patient voids the urine having features in concordance with Madhu-Kashaya and Madhura taste, Ruksha (dry) texture and honey like color and body acquires sweetness is called Madhumeha.

However, Sushruta has used the term Ksaudra Meha in place of Madhumeha. Ksaudra is nothing but a variety of Madhu (honey), which is Kapila (tawny) in color. So it undoubtedly resembles with Madhumeha. Further, he asserted that when all the Pramehas ill-treated or neglected are converted to Madhumeha.

In regard to the above explanation we can easily postulate that the disease prameha is resulted because of excessive excretion of something (Atipravrttija).

Synonyms:
Ojomeha, Ksaudrameha, Paushpameha

Observation:
Madhumeha involves the tridoshas, meda, mamsa, shareera kleda, shukra, shonita, vasa, majja, lasika, rasa and apara ojus. The vimshati pramehas manifest as 10 kaphaja pramehas involving mainly medas and tridosha with the predominance of dushta sleshma, 6 pittaja pramehas mainly involving shonita, medas and tridoshas with dushta pitta predominance and 4 vataja pramehas mainly involving vasa, majja, meda and tridoshas with the predominance of dushta vata.

Classification of prameha:
Three important Ayurvedic ancient treatises elaborately classified the disease Prameha on the basis of Dosha dominance.

| KAPHAJA MEHA | CHARAKA | SUSRUTA | VAGBHATA |
|--------------|---------|---------|----------|
| Udaka meha   | +       | +       | +        |
| Ikshuvalika meha | +       | +       | Ikshumeha |
| Sandrameha   | +       | +       |          |
| Sandra prasada meha | +       | Pistameha | +       |
| Shukla meha  | +       | Surameha |          |
| Shitameha    | +       | Lavana meha | Sitameha |
| Sikata meha  | +       | +       |          |
| Shanairmeha  | +       | +       |          |
| Alaa meha    | +       | Phenameha | Lala meha |
| Shukra meha  | +       | +       |          |

| PITTAJA PRAMEHA | CHARAKA | SUSRUTA | VAGBHATA |
|-----------------|---------|---------|----------|
| Kshara meha     | +       | +       | +        |
| Kala meha       | +       | Amla meha | Kala meha |
| Nila meha       | +       | +       |          |
| Lohitameha      | +       | Shonita meha | Rakta meha |
| Manjista meha   | +       | +       |          |
Haridra meha  | + | + | +
| **VATAJA MEHA**
Vasa meha  | + | + | +
Majja meha  | + | Sarpi meha  | Majja meha
Hasti meha  | + | + | +
Madhu meha  | + | Kshaudra meha  | Madhumeha

Table 1: Types of Madhumeha according to Brihattrayees

Acharya Charaka put forth the theory that all these types and their nomenclature are because of the specific qualities and their combinations with each other but, the nomenclature is mainly based on the predominance of one quality. Chakrapani also commented that the nomenclature is because there is close resemblance of urine with a particular quality (guna) i.e. Shitameha with Shita guna, Suklameha with Shukla guna etc. When we go through the above details, with this classification we can easily understand the dosha predominance, dusya involved, nature of urine voided and the disease progression.

| Madhumeha |
|-------------|
| गुरुन्मनग्धाम्ऱऱिणान्यततमात्रुं समश्नताम् |
| Avaranajanya |
| Madhumeha Nidana |

These nidanas vitiate Kapha and Pitta which in turn does malarupi vruddhi of Medas-Mamsa. Further altogether they do avarana to the vata gati which carries the Apara oja into the basti and leads to Madhumeha.

**Purvarupa:**
Premonitory symptoms are very much important to diagnose the disease as early as possible. That in turn helps for good prognosis. In Ayurvedic treatises common premonitory symptoms are described but special premonitory symptoms of Madhumeha are not mentioned.

**Rupa:**
Signs and symptoms of the disease are the diagnostic tools which manifest when the pathology of the disease is in full swing. The symptomatology of madhumeha by the Acharyas is as follows. The disease madhumeha exhibits its characteristic features or roopa resulting from the dosha dushya vishesha through mutra varnadi bheda. Here the word ‘adi’ refers to Rasa, Gandha, Sparsha. Hence the disease prameha or madhumeha must be diagnosed based on the characteristics of dusta mutra.

The samanya lakshana of this roga are prabhoota mutra and avila mutrata. Here prabhoota must be understood as excessive quantity and frequency of urine whereas avila refers to not clear or turbid and foul. The underlying pathology is the excessive increase in kapha and kledadi factors.

**Specific symptomatology of Madhumeha:**
**Urine Characteristics:**
Madhumeha patient excretes urine having Kashaya and Madhura taste, Panduta in colour and of Ruksa Quality. (Cha. Ni. 4/44) Commenting upon this statement of Charaka, Gangadhara opines that the natural madhura rasa of oja is replaced by Kashaya rasa in Basti. Chakrapani opines that Vayu because of its Prabhava converts Madhura rasa of oja into Kashaya rasa. Susruta mentioned the resemblance of urine with honey as described above, seconded by Vagbhata and Madhavakara.

**Associated signs and symptoms:**
In Chikitsasthana, Susruta before propounding the treatment of Prameha, asserted two types of prameha along with their features as follows.

**Sahaja Pramehi:**
Krusha (Asthenic), Ruksa (dry body), Alpash (consumes less food), Bhrusha Pipasa (Excessive thirst), Parsaranashila (restless, always wants to wander).
Apathyanimittaja:
*Sthula* (obese), *Bahvashi* (consumes excessive food), *Snigdha* (unctuous body texture), *Shayya-asana-swapnasheela* (likes to sit down and sleep always).

**Samprapti:**
The processes which include the different stages of *dosha dushti* and disease progression till the complete manifestation of *vyadhi* are called *samprapti*.

Acharya Charaka explained the *samprapti* of *madhumeha* in detail as follows. 

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**Kaphaja prameha:**
Due to Samnipatativa of *Nidana-Dosha-Dushya*, following stages become evident in *Kaphaja Prameha*.

| STAGES IN SAMPRAPTI | REASONS |
|---------------------|---------|
| 1. Kshipra prakopana of Shleshma | Prak Atibhuyastvat |
| 2. Kshipra Visruthi all over the body | Shareer Shaithilyat |
| 3. Initial combination with Medas | Medasaha Bahu Abaddhatvat and Samana Gunatavat |
| 4. Dushana of medas by prakupita shleshma | Vikrutatvat |
| 5. Samsarga of shareera kleda-mamsa by dushtha medas | Kleda mamsayoh o atipramanabhivrudhatvat |
| 6. Puti mamsa pidaka formation in mamsa like sharavika kacchapika etc. | Mamsapradoshat, aprakruti bhootavat. |

†Punar dushana of shareera kleda and their parinamana in the form of mutra by Pratirundhana of mutravaha srotas emerging from basti and vankshana leading to the manifestation of **10 kaphaja prameha**

**Table 2:** Stages in kaphaja Prameha samprapti

Susruta narrated *dusyas* in each dosic type of *prameha*. He narrated vitiation of *Kapha* along with *Vata, Pitta* and *Meda* in *Kaphaja prameha* (Su. Ni. 6/4).
Pittaja Prameha:
In kaphaja prameha, if patient indulges in pittakara ahara, vihara and manasika bhavas like: krodha → pitta dosha gets involved and leading to → further progression of samprapti towards yapya avastha and manifests →6 pittaja prameha.

Vataja Prameha:
The prameha which has reached yapyavastha due to involvement of excessively vitiated pitta and kapha, if patient indulges in vatakara ahara, vihara and manasika bhavas like: Udvega and Shoka → vata dosha gets involved and leading to → further progression of samprapti towards asadhya avastha and manifests → 4 vataja prameha.

Vikalpa samprapti in prameha: (amshamsha kalpana)
Kaphaja prameha

| TYPES               | LAKSHANAS OBSERVED IN MUTRA | DASHA GUNA | DOSHA VIKALPA                                                                 |
|---------------------|-----------------------------|------------|-----------------------------------------------------------------------------|
| Udaka meha          | • Accha                     | • Shweta   | • Kapha pradhana Tridosha                                                   |
|                     | • bahu                      | • Sheeta   | • Atyartha dravibhuta kapha due to loss in its sthira guna                  |
|                     | • sita                      | • Accha    |                                                                            |
|                     | • sheeta                    |            |                                                                            |
|                     | • Nirgandha                 |            |                                                                            |
|                     | • Udakopama                 |            |                                                                            |
| Ikshu rasa meha     | • Atyartha madhura          | • Sheet    |                                                                            |
|                     | • Sheeta                    | • Picchila |                                                                            |
|                     | • Ishat picchila            | • Madhura  |                                                                            |
|                     | • Kandekshu rasa sankasha   |            |                                                                            |
|                     | • Ishath aavila             |            |                                                                            |
| Sandra meha         | • Paryushita                | • Saandra  |                                                                            |
|                     | • Saandri bhavathi bhajane  |            |                                                                            |
| Sandra prasada meha | • Kinchith samhanyate      | • Saandra  |                                                                            |
|                     | • Kinchith praseedati       | • Prasada  |                                                                            |
| Shukla meha         | • Shukla                    | • Shweta   |                                                                            |
|                     | • Pishta nibha              |            |                                                                            |
|                     | • Abheekshana pramehati     |            |                                                                            |
| Shukra meha         | • Shukrabha                 | • Bahala   |                                                                            |
|                     | • Shukra Mishra             | • Madhura  |                                                                            |
|                     | • Muhur mehati              | • Snigdha  |                                                                            |
|                     |                               | • Guru     |                                                                            |
|                     |                               | • Shukla   |                                                                            |
|                     |                               | • Avisra   |                                                                            |
| Sheeta meha         | • Sheeta                    | • Sheeta   |                                                                            |
|                     | • Atyartha madhura          | • Madhura  |                                                                            |
| Sikata meha         | • Mutre anu murtha dosha    | • Murtha   |                                                                            |
| Shanaik meha        | • Manda                     | • Manda    |                                                                            |
|                     | • Kruchra                   |            |                                                                            |
|                     | • Avega                     |            |                                                                            |
| Aalala meha         | • Tantu baddha              | • Picchila |                                                                            |
|                     | • Picchila                  |            |                                                                            |

Table 3: Vikalpa Samprapti in Kaphaja Prameha

Pittaja Prameha

| TYPES   | LAKSHANA IN MUTRA         | GUNA INVOLVED | DOSHA VIKALPA    |
|---------|---------------------------|---------------|------------------|
| Kshara  | • Kshara gandha varna rasa sparsha | • Tikshna | • Pitta pradhana Tridosha |
| meha    |                           | • Ushna       |                  |
Laghu

Increase in vitiated Sara-Sneha-Visra

Change in Prakrutha Rasa-Varna

Table 4: Vikalpa Samprapti in Pittaja Prameha

Table 5: Vikalpa Samprapti in Vataja Prameha

Discussions & result:
From the above observations we can arrive at these results:
1. The involvement of tridosha suggests the seriousness of the illness.
2. Prameha is an acute illness manifested due to chronic pathology due to Nidana, dosha and dushta sammurchana- ashu abhinirrutikaranam bhavati. It is a disease with an irreversible pathology- asadhyan iti upatitaha.
3. The pattern and order of involvement of the dhatus indicates the transition of disease prameha from a state of curability towards the disease Madhumeha, a state of incurability.
4. The kaphaja prameha needs to be considered as pre-diabetic stage, since the dushtyas involved are mainly medas with associates like mamsa and shareera kleda. Thus obesity with dyslipidaemia and polyuria should be considered as kaphaja meha.
5. In pittaja prameha, Shonita is being invaded by dushta kaphadi factors. This is the point where the pathognomonic feature of diabetes mellitus- hyperglycaemia sets in. Thus Pittaja meha is the stage where actual pathologic mechanism of diabetes mellitus unfolds.
6. In vataja prameha, there is involvement of gambheera dhatus and apara ojus which is the dhatu sara, is being forced out of the body due to the indolent and irreversible pathology called Avarana at cellular level. Thus Madhumeha is a stage where complications are seen which is again due to Apara ojo kshaya from the body through basti marga. Also insulin resistance can be considered as avarana to the vata dosha.

Conclusion:
Conclusion in a nutshell is the essence of any study. Without finding a conclusion on any study, it would not become successful in its aims. Conclusions drawn from the present study are as follows:
1. Madumeha is tridoshaja vyadhi intiated by santarpana nidana leading to quantitative increase of malaroopi shleshma, pitta, meda and mamsa which leads to avarana of the gati of vayu which in turn leads to vimargagamana of apara ojus through basti by vayu leading to asadhya vyadhi as it involves gambhira dhatus.
2. The disease prameha is essentially a tridoshaja vyadhi with initiation by kapha dosha and dhatus like meda and mamsa. This stage can be identified as pre diabetic stage along with obesity, dyslipidaemia and polyuria.

3. The progression of kaphaja prameha is pittaja prameha where in the dusta kaphadi factors invade the rakta dhatus. This stage can be correlated to the hyperglycaemia and initial stage of diabetes mellitus.

4. The final stage of prameha samprapti involves vata and gambhira dhatus like majja, shukra and even the out throwing of apara ojus which can be correlated to the actual phase of DM including its complications.

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