**ABSTRACT**

‘Madhumeha’, a subtype of Vataj Prameha is one of the most important diseases described in Ayurveda. Madhumeha can be correlated with Diabetes mellitus type II from modern science. According to authentic Ayurvedic literature Meda & Mansa are the main Dooshyas in Prameha. ‘Rakta’ (Blood) is one of the other Dooshyas. But Vitiation of Rakta dhatu in Madhumeha should be considered similarly essential & important as that of Meda & Mansa. During nourishment to all Dhatus in normal physiology, ‘Rakta’ gets nourishment prior to Meda. It not only nourishes Mansa but Meda Dhatu also. According to modern science, diabetes mellitus is chronic metabolic disorder especially disturbing glucose metabolism and main medium for Glucose metabolisom is Blood. Disturbance in Sugar levels of blood in Diabetes Mellitus also suggests vitiation of ‘Rakta’ in Madhumeha. Hence ‘Vitiation of Rakta’ should be considered preferably for diagnosis & treatment of Madhumeha. Therefore preparations containing the mineral drug - ‘Svarnmakshika’ (Copper Pyrite) & ‘Virechana process’ (Purgation) as Purification Procedure having special effect on refinement of ‘Rakta’ should be used during treatment of Madhumeha.

**Key words:** Prameha, Madhumeha, Rakta Dooshti, Svarnmakshik, Virechana

**INTRODUCTION**

‘Prameha’ is an important disease described in Ayurveda. It finds place in eight Mahagada (major life threatening diseases)\. All types of Prameha if not treated properly ultimately turns into Madhumeha\].

Madhumeha is described as subtype of Vataj Prameha\. The term ‘Madhumeha’ is derived from Sanskrit words ‘Madhu’ & ‘Meha’. Madhu means ‘sweet like honey’ & Meha means ‘irrigation in drop manners’ i.e. oozing / dripping. This means that the disease, in which urine and the whole body with all physiological factors becomes sweet like honey, is called as ‘Madhumeha’. It can be correlated with diabetes mellitus type II from modern science. The term diabetes is derived from Greek word ‘Siphon like’ & Latin meaning of this term is ‘Honey’. Metlitus is Latin word meaning ‘sweetened with honey’ which refers to presence of sugar in blood & urine.

As Madhumeha is subtype of Prameha, the general pathogenesis of Prameha should be considered for Madhumeha. It is caused by invocation of all the three Humours especially Vata Dosha\. The fac-
tors which got vitiated (Dooshya) in Madhumeha are Mansa, Meda, Rasa, Rakta, Shukra, Lasika, Vasa, Majja & Oja. All are having liquid nature. So it must be understood that Madhumeha is essentially the disease of disturbed Udaka Dhatu. Amongst all Meda & Mansa are main vitiated factors (Dooshya) while Rakta is one of the Dooshya initially. But vitiation of Rakta in Madhumeha should be considered equally essential & important as Meda and Mansa. During nourishment, Rakta is nourished prior to Meda & Mansa. Further it nourishes Meda dhatu too. Rakta gets vitiated by Abhisyandi (property to increase oozing and secretions) property of Kapha dosha. So, vitiated Rakta can’t nourishes Meda properly.

If searched for previous research works on Madhumeha, it is observed that maximum work has been concentrated on Medadooshti. Study over role of vitiation of Rakta in the pathogenesis of Madhumeha has got ignored as a whole. So study of Rakta Dushti in Madhumeha is discussed in the present paper.

It can also be observed that the use of various preparations of the mineral drug Svarnamakshika & Virechana process are also proving very effective in the management of Madhumeha.

Aims and Objectives:
1. To study about role of vitiation of Raktdhatu in Madhumeha (Diabetes Mellitus).
2. To study the concept of effect of preparations containing Svarnamakshika and Virechana Karma over vitiation of Rakta in Madhumeha.

Materials:
1. Literary review of concept of vitiation of Rakta in pathogenesis of Madhumeha from ancient texts like Charaka, Sushruta, Vagbhata Samhita and Rasaratnasamuchchaya.

Methods:
1. Causative factors, pathogenesis and clinical presentation of Madhumeha were studied.
2. The concept of vitiation of Raktdhatu in pathogenesis of Madhumeha was studied.
3. Causative factors and clinical presentation of Madhumeha were compared with those of vitiation of Rakta.
4. Properties of Svarnamakshika and Virechana process were studied.
5. Roles of Svarnamakshika and Virechana Process in reducing the vitiation of Rakta in Madhumeha were studied.
6. Collection and analysis of all the references were done.
7. The collected data of references was compared and processed logically to verify the concept and to arrive at conclusion.

Concept of Raktadooshti:
Chakrapani nicely explained about pathogenesis of Madhumeha especially with vitiation of Rakta & oja. Consumption of dietetic regime and behavior factors that provoke Vata by properties like Ruksha (dry), Laghu (light), Kashaya (stringent) –Tikta (bitter) tastes causes provocation of Vata. This Provoked Vata spreads through the body. It imparts its stringent taste to Oja. Provoked Vata turns sweetness of Oja into stringent taste (Kashaya rasa). Snigdha (Oleousness) and saumyata (mild) properties of Oja get transformed into Rukshata (dryness)
Vata extracts sweetness from Oja constantly circulating in body for various metabolic activities inseparably. This accumulated sweetness of Oja in circulation causes deterioration of Rakta because of Abhishyandi (property which allow more secretions) nature of sweet taste. This further amplifies liquidity in the channels compelling more Drava Dhatu to ooze in.

When Kapha Pittaja Prameha in initial stages get ignored or not treated properly, there occurs further vitiation of Mamsa & Shonita. As a rule, any other Prameha when ignored or treated lately gets converted into Vataj Prameha - ultimately into Madhumeha. So Negligence in treatment or chronicity of the disease turn Kapha-Pittaja Prameha into Madhumeha. This vitiation of Rakta also leads to the formation of complications in Madhumeha. So, as Madhumeha getting more chronic and ignored, chances of Raktadooshti get prominent in that condition.

Thus, above expressions of Chakrapani and Dalhana suggest that when Madhumeha becomes chronic and ignored in treatment, Vitiation of Rakta get involved. Along with this, vitiated Vata extracts sweetness of Oja and imparts its stringent taste to the later. The extracted sweetness of oja gets accumulated in ‘Rasa-Rakta complex’ as both are constantly circulating throughout body for various metabolic activities. It strikingly resembles with the finding of increased levels of glucose (sweet in nature) in blood by modern science. This clearly suggests the presence of sweetness of Oja (increased sugar levels) in Rakta (blood).

**Pathogenesis of Madhumeha:**

According to Charaka, pathogenesis of Madhumeha is explained with two types.

1. **Dhatukshya janya Madhumeha** (Due to loss of elements of body)

2. **Avaranjanya Madhumeha** (Madhumeha created by encircling of Vata)

Repeated and excessive intake of food articles having tastes like Amla (sour), Lavana (salty) and Tikta (bitter), Heavy intake of newly prepared alcohol, newly yielded grains, excessive consumption of curds, Day time sleep cause provocation of Vata & loss or decrease in the quality and quantity of Dhatu. It leads to Dhatushaithilya (Weakness in consistency) causing loss of Oja from Dhatu & increase in waste part having liquid nature after metabolism i.e. Kleda in Dhatu. Hence provoked Vata converts sweetness of Oja into bitterness and oleousness into dryness. This sweetness of Oja & liquidity from Dhatushaithilya get accumulated into Rakta leading to vitiation of Rakta with madhur (sweet), abhishyandi (secretory) & kleda guna (liquid property).

    During nourishment from Ahara Rasa, Rakta gets nourished prior to Meda. This vitiated Rakta can’t nourish Mamsa & Meda properly increasing ‘Abaddhatva’ (looseness) of Meda. Thenafter, this vitiated Vata carries Oja & Shithil Dhatu towards ‘Basti’ (urinary bladder) due to Strotovaigunya (Functional defect in urinary system) & get excreted through urine causing Prabhut Avil Ojo Yukta Mutra (Large Quantity along with haziness in urine with oja).

**Observations:**

Comparision between causative factors of Madhumeha & Raktadooshti shows that Aasyasukham (food with extra luxury and comfort),excessive consumption of curds – mutton soup of various animals from the area of excess water and trees, food articles having more pungent-sour and salty tastes, food which will
create burning sensations inside Koshtha (Vidahi Anna), day sleep, life without walking and exertion (Achankramana), truma, withholding natural urges, rage, anger, fear, mourning and heavy alcohol consumption are common between them.

Even this is not only true about causative factors, but clinical conditions comprising various signs and symptoms also confirm the role of Vitiation of Rakta in Diabetes mellitus (Madhumeha) as follows. When compared signs and symptoms of vitiation of Rakta and Madhumeha - loss of appetite, laziness- heavyness in the body, decreasing in functional ability, excessive burning sensations inside body parts, severe thirst, extra hunger, foul smell to various body parts, excessive sweating, skin diseases, tastelessness, decrease in immunity are the common ones between them.

**Result:** So comparison between causative factors and clinical condition between Diabetes Mellitus and Rakta Dooshti gives the clear impression of later’s role in Madhumeha.

**Treatment:** Above observations suggests that Rakta Dooshti is a major component in pathogenesis of Madhumeha. So treatment of Madhumeha should be done with consideration of Rakta Dhatu.

Treatment of Madhumeha can be classified into two parts as follows -

1. **Shamana (Palliative) treatment:**
   Various medicinal preparations having Svarnamakshika (Copper Pyrite) as main content can be used in for treatment of Madhumeha. Properties of Svarnamakshi-ka are as follows -
   - **Rasa (Taste):** Bitter, sweet
   - **Guna (Properties):** Bitter, lightness, cold
   - **Virya (Potential property):** cold
   - **Vipaka (Transformation of taste after digestion):** katu
   - **Karma (Functions):** provides strength, rejuvenater, Pramehaghna (palliative effect over diabetes), Effective over diseases of excretary system, passifying all the three Provocated Humours.

   Efficacy of Svarnmakshika in Madhumeha can be understood in the following way.
   1. Bitter taste and pungent ‘Vipaka’ (Transformation of taste after digestion) of Svarnamakshika purifies Raktdhatu by digesting kleda (excessive liquidity in Madhumeha) & Abhishyanda (excessive secretions from body). This reduces sweetness in Raktdhatu.
   2. Sweet taste corrects the provocatin of Vata.
   3. Svarnmakshika has the ability to rejuvenate the tissues and strengthen the body. This ultimately strengthens Oja & decreases the inability and looseness created in Dhatus (Dhatushaithilya).
   4. It increases the quality of dhatus (Dhatuprasadan) ultimately increasing the quality of Oja.
   5. Svarnmakshika is basically very effective in Prameha (palliative for Prameha), hence can be used in Madhumeha.

2. **Shodhana (Purification) treatment:**
   Considering the nature of disease, it is advised to expel provocated Dosha through the upper and lower routes of the body which are known as Vamana and Virechana processes respectively. Though both are having better power to break the pathogenesis of Prameha, Virechana proves to be more effective in treating vitiation of Rakta in Madhumeha for following reasons.
   1. It has purificatory nature.
2) **Virechana** Basically Removes ‘Pitta’ Humour Or Its Combination With Kapha Or Vata.  
3) ‘Rakta’ is produced in liver after colouring (Ranjana process) Rasadhatu by Pitta. This fact proves the close relation between Rakta & Pitta.  
4) Moreover Rakta and Pitta share a specific relation. Rakta provides habitat to Pitta (Ashray – Ashrayi relation). This ‘association of Rakta and Pitta’ is actually ‘mutualism.’  
5) So Treating Pitta Automatically Has The Benefecial Effects Over Rakta. Hence Virechana has great effect over the vitiation of Rakta.  
6) Virechana thus helps in purifying vitiation of Rakta. It also decreases kleda (liquidity) in all Dhatus which further Increases nourishment of Dhatus & quality of Oja.  
7) It regulates the direction of provoked Vata in proper way (Anuloma Gati) which was distracted by obstructing nature of Pitta and vitiated Rakta. Hence from all above references Virechana process can be used as Purificatory treatment in Madhumeha.

**CONCLUSIONS**

1. If ignored and kept untreated, complications involving Rakta along with Mamsa Meda Dhatu vitiation starts occurring in Prameha.  
2. Provoked Vata extracts sweetness of Oja and imparts its bitterness to it. The extracted sweetness gets attached to Rasa – Rakta circulating complex making it sweeter. This similarity resembles with observations in modern science as Blood Sugar level gets raised in Diabetes Mellitus.

3. Both the above observations help to conclude that Vitiation of Rakta plays a major role in Madhumeha.  
4. So the type of Madhumeha which is actually occurred due to transformation from Kapha-Pittaja Prameha due to ignorance or chronicity can be treated best by Svarnamakshika and virechana process.  
5. Both these types of treatment are very effective in the treatment of vitiation of Rakta.  
6. So, Svarnamakshika and Virechana process are the best available treatment modalities to treat vitiation of Rakta in Madhumeha.

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