

AN OBSERVATIONAL STUDY ON SHONITHA DUSHTI IN MADHUMEHA WITH
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ABSTRACT

"Ye Tri Saptah Vishwa Roopam was the Sloka quoted by Sayanacharya for explaining the importance of Doshas. Tridoshas and Saptha Dhatus are the basic elements that control the human body. Similarly, Madhumeha is a disease of Tridoshaja with Kapha Pradhana Vyadhi with involvement of Ten Dushyas like Raktha, Rasa, Mamsa, Meda, Majja, Ambu, Vasa, Shukra, and Lasika. Even though Acharyas has described Mutra Pareeksha for the diagnosis of Madhumeha at the same time have explained the importance of Rakta Dhatu in its pathogenesis. Hence an attempt is made here to analyze the importance of Rakta with the help of Rakta Pareeksha for early diagnosis and prognosis of Madhumeha.

KEYWORDS: Madhumeha, Shonita Dushti Lakshana, Diabetes mellitus.**INTRODUCTION**

Ayurveda, the traditional Indian system of medicine, places great importance on equilibrium within the body's constituent tissues, which is believed to lead to happiness or "Sukha." Any disruption of this equilibrium results in "Dukha" and can manifest as a disease. Irregular lifestyles, shifts in dietary habits, occupational hazards, and environmental factors can contribute to various metabolic disorders. Among these, Prameha, or diabetes, stands out. According to current statistics, the number of diabetic patients is steadily increasing, especially in India. Medical experts predict that up to 20% of the world's population may have diabetes in the coming decades. Diabetes is a multidisciplinary disease that affects various organs in the body, giving rise to conditions like diabetic nephropathy, retinopathy, and neuropathy. Consequently, diabetes can hinder individuals from leading better lives, significantly impacting both their social and economic well-being. The World Health Organization (WHO) has highlighted the growing global burden of non-communicable diseases, categorizing them as the most significant threat to public health. Therefore, there is an urgent need to revisit traditional Ayurvedic practices and establish systems for early diagnosis and treatment to mitigate the incidence of Prameha. This study delves into the role of

"Rakta" or blood in the pathophysiology of Madhumeha, emphasizing the importance of blood in this context by evaluating the "Rakta Dushti Lakshanas" or signs of blood impairment in individuals with Type 2 diabetes.

In this study, the primary aims and objectives revolve around understanding the role of "Shonita Dushti" (blood impairment) in the context of Madhumeha, or diabetes mellitus. The first aim is to evaluate the causative factors of blood impairment (Shonita Dushti Nidana) in individuals with diabetes. This examination delves into the potential triggers and contributing factors behind blood impairment in diabetes. The second objective is to study the signs and symptoms of blood impairment (Shonita Dushti Lakshana) specifically in Madhumeha patients. This provides insights into how blood quality is affected in the presence of diabetes. Lastly, the study seeks to establish a correlation between Complete Blood Count (CBC) parameters and Type 2 Diabetes Mellitus in the study subjects. This component is crucial in understanding the hematological aspects of diabetes.

The study included a total 30 patients diagnosed with Type2 Diabetes Mellitus(T2DM), along with equal number of healthy individuals. These participants were selected from the Outpatient Department (OPD) and

Inpatient Department (IPD) of SDM Ayurveda Hospital in Udipi, as well as nearby hospitals. Rigorous inclusion and exclusion criteria were applied to ensure the selection of suitable candidates for the study. The research design employed was a descriptive cross-sectional, case-control observational study conducted within a hospital-based setting. To facilitate data collection and assessment, a specialized proforma was devised, which encompassed detailed patient histories, evaluations of the causative factors behind blood impairment (Shonita Dushti Nidana) in Madhumeha patients, and the predominant Doshas in individuals with diabetes. Diagnostic criteria in line with the World Health Organization (WHO) recommendations were employed to classify participants, with fasting and post-prandial blood plasma glucose levels, as well as HbA1C levels, serving as key diagnostic indicators. The study exclusively included individuals with Type 2 Diabetes

Mellitus who met these criteria and were between the ages of 18 and 70 years. Additionally, the subjects were required to provide written informed consent for their participation. Conversely, individuals with Type 1 Diabetes, those receiving insulin for diabetes management, patients with active inflammation or infection, those with malignancies, and pregnant or lactating women were excluded from the study to ensure a focused and representative participant cohort. These robust methodologies and criteria are essential to ensure the accuracy and reliability of the study's findings as it explores the relationship between blood impairment and diabetes.

MATERIAL AND METHODS

A Standardized tool has been prepared to assess Shonitha Dushti Lakshana in blood sample.

| Test Parameter | Dosha Indication | Test Method |
|--|---|---|
| 1. Dusta Shonita Varna (Blood Color) | - Vata Dosha: Aruna, Krishna, Ruksha Shyava - Pitta Dosha: Neela, Peeta, Harita, Snigdha Shyava - Kapha Dosha: Eeshat Pandu, Gairikodaka Sankasha | Evaluation of blood color using a hemoglobin shading scale |
| 2. Gandha (Odor) / Color | - Pitta Dosha: Visra Gandha | Assessment of the odor of the blood collected by venipuncture |
| 3. Sheetha/Ushna (Temperature) | - Pitta Dosha: Ushna - Kapha Dosha: Sheeta | Measurement of blood temperature using a multi-stem thermometer simultaneously with the patient's body temperature |
| 4. Bahala, Pichila, Mamsapeshi (Hyperviscosity) | - Kapha Dosha: Bahalam, Pichchilam, Tantumadghanam - Vata Dosha: Tanu - Pitta Dosha: Sthya | Measurement of blood viscosity by timing the flow of 20µl of blood between the two edges of a capillary tube |
| 5. Snigdham, Rooksham, Parushyam (Triglycerides) | - Kapha Dosha: Atisnigdha | Assessment of Snigdhta and Rookshata by comparing blood samples with elevated triglyceride levels to those with Snigdha-quality blood |
| 6. Serum Transparency | - Vata Dosha: Vishad | Examination of serum clarity and turbidity after centrifugation and color absorption testing at a 590 nm wavelength |
| 7. Skhandana Property (Bleeding and Clotting Time) | - Vata Dosha: Askandi - Pitta Dosha: Askandi - Kapha Dosha: Skandi | Measurement of bleeding and clotting time to determine blood properties related to Vata, Pitta, and Kapha Doshas |
| 8. Sheergaami, Mandagaami (Blood Spreading Tendency) | - Vata Dosha: Sheeghragam - Kapha Dosha: Mandagam | Evaluation of blood flow by applying 20µl of blood directly on Whatman filter paper in a specific time period |

RESULTS

➤ Based on Demographic Data

It is mostly seen in the age group of 65-75 years. 96.7% of the subjects belong to Hindu 76.7% of them are males and 43.3% of them are engineers by their job. Most of them belong to the upper middle class and 50% of them have a family history of diabetes mellitus.

Rogi Pareeksha: Based on Pareeksha 40% of them have Mandagni, 66.7% of them have Madhyama Koshta and most of them are Vata-Kapha Prakrthi.

Shonita Dushti Nidana: Among the Madhumeha subjects' incidence of intake of Kulattha, Dadhi at night, Mulaka, Pindalu with a predominance of Amla and Lavana rasa, Ushna Virya and Teekshna and Ushna guna was seen predominately in Madhumehi subjects.^[3]

Shonita Dushti Lakshana: Shonitha Dushti Lakshana was evaluated among the Madhumeha subjects according to the Predominance of Dosha in Rakta, where Bahala, Pichila, Mamsapeshi, Phenilam, and Snigdha, of Dosha Dushti Lakshanas were statistically significant in Rakta in terms of both bleeding and clotting times. This shows

that the Rakta of Madhumeha Subjects' Kapha Dosha is aggravating.

DISCUSSION

1. To evaluate Shonitha Dushti Nidana in Madhumeha patients.

In this study, both Viharaja (lifestyle) and Aharaja (dietary) Nidanas (causes) associated with Raktha Dushti have been examined. Among the subjects with Madhumeha (type 2 diabetes mellitus), the research findings have highlighted the usage of Dadhi (curd) at night, consumption of Ahara (food) which is rich in Lavana (salt), and Katu rasa (pungent taste), and participation in Viharas (activities) like Diwaswapna (daytime sleep) and Adhyashana (overeating). Thus, it is evidently seen that these causes considerably worsen the Rakta Dushti, emphasizing the crucial role that Rakta (blood) plays in Madhumeha's manifestation.^[4,5,6]

2. To study the Shonitha Dushti lakshana of Asrik in Madhumeha patients

According to this study. Ushna Guna (temperature) of Rakta is increased in Diabetic individuals, indicating improper blood temperature control. A vitiated Rakta with worsened Kapha Dosha may have been present, as evidenced by the blood's frothy appearance and increased viscosity. On further observation, the aggravation of Kapha Dosha in Rakta, which is connected to the clotting and coagulation process, was observed in bleeding and clotting time. According to the dominance of Dosha in Rakta Dushti, the Varna (color) of Rakta also changed, offering important insights into the nature of blood imbalances in people with type 2 diabetes.

3. To study the possible correlation between the CBC parameters and Type 2 Diabetes mellitus in the subjects.

In this study, the p-value for HDL cholesterol is 0.031, signifying its statistical significance. This result suggests that higher levels of HDL (High-Density Lipoprotein) are often associated with improved glycemic control and a reduced risk of diabetes-related complications. The elevated glucose levels observed in the study may be accountable for the increased counts of neutrophils and lymphocytes. Individuals with diabetes may experience compromised immune function, rendering them more susceptible to infections. Additionally, higher levels of HbA1c are linked to poorer blood sugar regulation and prolonged exposure to elevated glucose levels, thereby increasing the risk of complications.

This study has identified significant abnormalities in various hematological parameters among patients with type 2 diabetes mellitus (T2DM). Given that diabetes is a non-communicable disease with a rising global incidence, it underscores the importance of regular monitoring of hematological parameters in individuals with T2DM. This proactive approach can aid in both the prevention and early diagnosis of T2DM.^[7]

CONCLUSION

Ayurvedic scholars, particularly Vagbhata, emphasized the role of Rakta (blood) in the development of Madhumeha.^[8] This study has observed that both causative factors (Shonitha Dushti Nidana) and symptoms (Shonitha Dushti Lakshanas) of blood impairment were predominantly found in individuals with Madhumeha. Therefore, one can conclude that Rakta Pareeksha (blood analysis) may be considered as a valuable addition to laboratory investigations alongside the traditional Mutra Pareeksha (urine analysis).

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