Role of *Kleda Dushya* in *Prameha* (Diabetes Mellitus)-A Critical Review

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**ABSTRACT:** According to the World Health Organization, diabetes mellitus will be the seventh largest cause of death by 2030. According to studies undertaken by the Indian Council of Medical Research, India currently has 62.4 million persons with diabetes. Diabetes patients experience several consequences throughout time. As a result, they are vulnerable to a wide range of infections. Modern medical research is attempting to solve the problem, but it has its own limitations. According to modern medicine, the treatment's goal is to achieve a protracted remission rather than a complete cure. According to Acharya Charaka, the vitiation of three Doshas creates 20 different varieties of *Prameha* as well as a slew of other ailments. *Nidan, Dosha,* and *Dushya* are three components that, when united in a strong state, cause *Prameha* to develop right away. The patient in *Madhumeha* passes a big amount of urine that looks like Madhu (honey) and tastes like Kashaya (astringent) and Madhur (sweet). In place of Madhumeha, Acharya Sushruta has told *Kshaudrameha*. An individual suffering from *prameha*'s like is also increased by hereditary propensity. The unnecessary Abaddha meda (loose lipid), Mamsa (muscle proteins), *Kleda* (body fluids), Shukra (reproductive tissues), Shonit (blood), vasa (muscle fats), Majja (bone marrow), Rasa (body liquid with plasma), Oja (immunity and immune system of body) are significant components engaged with the pathogenesis of *prameha*. The present review highlights the role of *Kleda dushya* in the pathogenesis of Diabetes Mellitus.

**Key words**- Diabetes Mellitus, Prameha, Kleda

**INTRODUCTION**

Diabetes mellitus is becoming the world's fastest spreading disease. India has been identified as having the fastest-growing Diabetic population. It is a metabolic condition in which insulin synthesis is deficient or dysfunctional. Diabetes is defined by chronic hyperglycaemia along with a malfunction of carbohydrate, lipid, and protein metabolism, resulting in long-term damage to the heart,
Brain, veins, eyes, kidneys, and nerves. Diabetes is becoming more and more common every day. Type-2 diabetes is the most common, accounting for over 90% of all diabetic cases. Diabetes affects 422 million people globally; the majority of whom live in low- and middle-income countries, and diabetes is responsible for 1.6 million fatalities each year. Both the number of cases and the frequency of diabetes have been progressively growing during the last several decades. According to WHO projections, 32 million individuals in India had diabetes in 2000, and by 2030, India will have over 80 million diabetic patients, accounting for 20 percent of the global diabetic population. Diabetes mellitus is one of the diseases that can be caused by a sedentary lifestyle, irregular eating habits, and stressful situations. Madhumeha’s clinical characteristics, etiopathogenesis, and prognosis are similar to diabetes mellitus in Ayurveda. Diabetes mellitus can cause long-term consequences such as diabetic retinopathy, nephropathy, and neuropathy. As a result, Type 2 diabetes prevention has been a serious concern in recent years. Insulin is produced by the beta cells of the islets of Langerhans in the pancreas gland. Insulin plays a critical role in our body’s carbohydrate consumption. 

Madhumeha is made up of two words: madhu (sweetness) and meh (excessive urine). Madhumeha, Ojo Meha, and Kshaudrameha are some of the Ayurvedic synonyms. One of the twenty types of Prameha is Madhumeha. If these Prameha are not adequately treated, they may develop into Madhumeha, which is incurable. Instead of Madhumeha, Acharya Sushruta used the phrase Kshaudrameha. Lack of exercise and consumption of food that aggravates Kaptha, Meda and Mootra are major causative factors of the disease. These are the inactive habits and increased eating of sweets and fats in daily diet. Kaphaja prameha can be triggered by etiological factors (especially kapha-predominant), doshas, and dushyas. Because of sluggish muscles and oily tissues, the troubled kapha spreads quickly throughout the body. The kapha mixes quickly with the medas (fat) - primarily because fats are frequently excessive in quantity, thick, and delicate in extreme body situations, but also because kapha and medas have indistinguishable features. Because kapha is vitiated, it also vitiates the medas. The vitiated kapha - meda then combines with mamsa (muscle tissues) and kleda (body liquid), despite the fact that these two should have just exceeded their respective amounts. The appearance of putrefied carbuncles (pidika) like sharavika and kacchapika in the muscle is aided by the vitiation of the muscle tissues. The body’s fluid dhatu is also vitiated and transformed into mutra. Vrikka (kidney) and basti (urinary bladder) are the two ends of the channels that transport urine; meda and kleda control the openings of these channels. The vitiated kapha prevents these channels from opening. This is a symptom of prameha, which can be continuing or hopeless due to a preference for all kapha features and concomitant vitiation of homogenous and heterogeneous dhatu. Different correlations of all dushyas in the development of prameha bahuabaddha meda (loose lipids), mamsa (muscle proteins), kleda (body fluids), shukra (reproductive tissues), shonit (blood), vasa (muscle fats), majja (bone marrow), rasa (body liquid with plasma), rakta (blood cells) oja (immunity and immune system of body).

Aims & Objective
To establish the fact about role of Kleda in pathogenesis of Diabetes Mellitus (Prameha).

Material & Method
Material related to Kleda and Diabetes Mellitus (Prameha) is collected from ayurvedic texts books, modern text books, index medical journals and website.

Kleda-Ayurveda Prospective
Kleda is a word that found in Ayurvedic books in relation to Dosha, Dhatu, Agni, Mala, and Guna of Dravya, among other things. It’s important to recall the connection between Kleda and a person’s Prakrut Avastha and a disease’s Vikruti Avastha. Prakrut Avastha denotes Swastha Avastha (healthy circumstance), in which a person’s Dosh, Dhatu, Mala, Agni, and soul, sense organs, and mind are in a joyful and balanced state. Vikruti is the study of changes that occur at the level of underlying illness variables. Vikruti Vijnana is concerned with the underlying factors that are necessary for understanding and diagnosing sickness. Kleda is characterised in the classics as a manifestation of Jala Mahabhoota in the body, with Jala as the dominating element and its Drava, Snigdha, and Mridu qualities producing softening and loosening of solid materials. So, Kleda is nothing more than Udaka with a few tweaks. When normal liquid portions (Adrata) grow in Dhatus as a result of metabolism or in some pathological circumstances, it is mostly removed by Mootra. Sweda also aids in elimination, however Mootra is the major performer because its purpose is Kledavahan. Kleda is closer to Kapha than the other Tridoshas. However, Pitta must also be involved in the formation of Kleda. Swedana,
Kledasruti, and other functions of Pitta are supposed to exist and Pitta by Asrayasaahryi Bhava relates to Rakta. So, excess Drava Bhava of the body is conveyed through Rakta in the form of Kleda. This demonstrates that Kleda formation is possible in all Dhatus. This Vikrutha Kleda will produce Prameha when it hits the Meda and reaches the Basti. In addition to Prabhoota Aavila Mootrata outcomes (discoloration and excess production of urine). Diabetes mellitus, Arthrosclerosis, Autoimmune disease, Hypertension, and D.M. complications such as Carbuncles are examples of non-inflammatory disorders. ESR will never rise here. As a result, it's linked to an increase in C- RP levels. Mootravaha Srotas with Prameha problems have abnormal cystatin-C (a biomarker of renal function) and micro albumin (>30 300mg/dL) levels. The natural activities of the kidneys are disturbed by Vikrutha Kleda, which impedes the Prakruta Karma of Mootra vikriti in Kledavahana. As a result, there are pathological differences in the quality and amount of urine.

**Kleda dushya in the Samprapti (Pathogenesis) of Prameha (Diabetes mellitus)**

Kleda is a bodily component that is essentially linked to pathogenesis. Kleda's physiology is substantially linked to mutra and sweda, as well as meda. As a result, when kleda is added, it has a direct impact on the above components. Mutra and sweda maintain kleda's homeostasis in normal physiology. Sweda, in particular, keeps it in the body, and mutra is evacuated from it according to the body's condition and need. When kleda becomes vitiated, it affects the physiology of mutra and sweda and disrupts the accumulation of genuine components, resulting in shaithilya. Prabhootha moortrata (polyuria), sweda vrddhi (expanding perspiring), shaithilya (shortcoming), Daurgandhya (awful smell), and Avalamutrata are the manifestations of kleda vitiation (turbid urine). Glycosuria causes osmolar centralization of the urine and osmotic diuresis, resulting in water and salt loss, as well as potassium prompts, in diabetic patients. The increased level of catecholamines in DM promotes excessive sweating, which leads to electrolyte loss through the skin, such as salt and chlorides. Water and electrolyte imbalances can be linked to the entire miracle depicted under kleda.

**DISCUSSION**

Ten dushyas are involved in the pathophysiology of Prameha: bahuabaddha meda, mamsa, kleda, shukra, shonit, vasa, majja, rasa, rakta, and oja. These ten dushyas, are correlated to loose lipid, muscle proteins, body fluids, reproductive tissues, blood cells, muscle fats, bone marrow, body liquid with plasma, immunity, and immune system. Kleda, also known as kledaka kapha, is an important bhava in the human body. This is one of the 6 Ahar Parinamkar Bhavas identified by Charak acharya. According to ‘Prakledane Sandra’ kleda consists of Sandra guns. Any change in quality transforms it into dushya or mala, like in Prameha, Kushtha, and so on. According to Vaidyaraj Datarshashtri, the drava guna of kapha, which is nothing but kleda, is the root of Prameha. In other words, ‘Bahudravasleshma’ is a condition that generates aghumandaya and disrupts tej mahabhuta in Dhatwagni. Dhatuhaithiyya in prameha is caused by this. Kleda is an important concept in the appropriate diagnosis of Prameha.

Increased kleda levels in the body result in increased urine volume and frequency. Because Kleda is drava in nature, it affects all of the body's drava or kapha pradhan dhatus.

**CONCLUSION**

Kleda is an important principle of Ayurved. According to the criteria mentioned, Kleda plays a significant function in the body's normal physiological processes. This Kleda is linked to Dosha, Dhatu, Mala, Agni, and other aspects. This Prakruta Kleda helps in the normal functioning of Dosha, Dhatu, Mala, Agni, and other body systems, as well as maintaining normal physiological processes. When it switches to Vikruta Avastha, it causes Premeha (diabetes mellitus) by interfering with the proper functioning of Dosha, Dhatu, Mala, and so on. So, we can come to the final conclusion that Kleda is used in Ayurveda as a normal constituent needed for the functions of body, helping in digestion, existing in all Dhatus, softening them in normal amount. When the Vikruta of Kleda crosses a certain threshold, the functions of Dosha, Dhatu, Agni, Annapachan, and Mala kriya are hampered. It causes Prameha, Prameha-pidika, to manifest. As a result, we can say that Kleda plays crucial role in Prameha.

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