

**CONCEPT OF MEDO DHATU, MEDOROGA AND DYSLIPIDEMIA:  
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**ABSTRACT**

The present study tries to correlate the conceptual facts to show the relation among abnormal levels of lipids, Medo dhatu and Medoroga. There are seven types of tissues in the human body known as Dhatus. When all the Dhatus in the body are in their optimum levels, each of them contribute towards the health of the body. But when there is vikriti in any of the Dhatus then it surely affects body nutrition, health and mind. Medoroga is one of the best examples of the diseases caused due to vikriti in Medodhatu. Medo dushti includes several types of Medo vikara, which are collectively known as Medoroga. Medoroga can be included in Santarpanjanya vyadhi. Medoroga is mainly due to

imbalance of energy of the body. It is a condition produced by derangement of Agni, leads to Amarasa. There is Medodhatwagnimandya leading to improper formation of Medo dhatu. Dyslipidemia is one of the commonest presentation and major cause for various life style disorders which is due to abnormal levels of lipids in the blood. When metabolism is balanced then the body produces proper amount of lipids in their right proportion to nourish the body. Now a day's dyslipidemia is the major cause of the cardiovascular disorders.

**KEYWORDS:** Meda Dhatu, Medo dushti, Dyslipidemia, Medoroga.

**INTRODUCTION**

In the present time of civilization, a person is incognizantssss towards his ideal health because he is busy to achieve physical pleasure as early as possible. A change in the life style and dietary habits has brought a drastic effect in the health of a person. These growing

challenges of advancement have resulted in human beings re-adjusting their customary behaviour by modifying their dietary and lifestyle preferences, results into the disturbances of Agni level hence metabolism, and ultimately leads to clinical entity known as dyslipidemia. Dyslipidemia is the condition of abnormally elevated levels of any or all lipids (serum total cholesterol and triglyceride) or low density lipoprotein and low level of high density lipoprotein in blood. Plasma lipids (serum total cholesterol & triglyceride) and lipoproteins have been established to associate with atherosclerosis and its consequences in different vascular channels in the body. According to Ayurveda, body contains sneha substances mainly into three forms viz. Vasa, Meda and Majja. Hence Sneha circulating freely in the body via srotansi or circulatory system also get increased or decreased to some extent in Medoroga. According to the opinion of Harrison (1987) and Robinson (1982) that the overweight individuals have higher level of their serum lipids. In modern terminology lipids like cholesterol, triglycerides and lipoprotein are synonyms of circulating Sneha present in the body. The term dyslipidemia cannot be directly correlated with any disease conditions as described in Ayurvedic classics but the concept of Abaddha Meda expounded by Acharya Chakrapani (Ayurveda Dipika teeka, on Charaka samhita Ni.4/4) have similarity with the condition of dyslipidemia described in modern science. Being a disorder of Meda dhatu, it can be correlated with “Medo dusti”. This medo dusti is responsible for Medoroga.

### Concept of medo dhatu

Meda is the fourth Dhatu among Sapta Dhatus, having equal importance as other Dhatus. Meda is found in Mamsa and Brihat Asthi but mainly present in Udara (abdominal area). When Meda is present in small (Anu) asthi, called Sarakta Meda and when present in large (Sthoola) Asthi, it is called Majja. The pure form of Sneha which is present in Mamsa is called Vasa.<sup>[1]</sup> Thus Vasa, Meda, Majja can be correlated with all forms of lipids. Although they have Snehatwa as a common feature but differ in their site and function.<sup>[2]</sup> Among these Medo dhatu has more importance as it is responsible for the entity called Medoroga.

### Formation of meda dhatu

By the concept of Acharya Charaka, the Rakta dhatu performs with Teja, Apa and is made solid by the agni and it gets converted into Mamsa, that again being digested by “Medodhatvagni” and stirred up by the Agni and getting combined with the quality of Apa and unctuous substances and finally gets converted into the Medodhatu, means Agni is responsible for all the metabolic activities of body.<sup>[3]</sup>

### Pramana of medodhatu

The total quantity of Meda is 2 Anjali and the Vasa (Muscle's fat) is three Anjali.

### Functions of medodhatu

Snehatva, Sweda, Dridhatva and Asthipushti are the functions of Medadhatu. Again Netra and Gatra snigdhatva are the additional functions of Meda mentioned by Astang Samgraha (A. S. Su. 19/4).

### Sthana and Swarupa of medodhatu

There are 2 types of Medodhatu.

1. Poshaka Medodhatu (Abaddha Meda)
2. Poshya Medodhatu (Baddha Meda)

Poshaka Medodhatu has property of gati, which is circulated in the whole body along with gatiyukta Rasa, Rakta dhatu to give the nourishment to Poshya Medodhatu.

According to modern science, it can be interrelated with cholesterol and lipids which are present in circulating blood.

Poshya Medodhatu is not gatiyukta, means it is Gativivarjita, and its storage is done in Medodharakala. The site of medodharakala is Udara and Anvathi, Gala, Sphik and Stana, are also sthana of poshya meda.<sup>[9]</sup> It is found in mamsa as Vasa also known as Maamsgat Sneha.

### Comparison between the concept of Meda and Lipids

Meda	Lipids
Ingestion of excessive Sneha (Ghrita, Taila, Vasa & Majja) causes medoroga <sup>[4]</sup>	Intake of high fat diet ( <i>ghee</i> , oils, Marrow, butter etc.) increases body lipids
Dietary intake of excessive Madhura Dravyas causes Medoroga <sup>[5]</sup>	Increased consumption of carbohydrates (especially sucrose enhances cholesterol level) <sup>[6]</sup>
Medo-Snigdhangata. <sup>[7]</sup>	Fat gives an oily appearance of the body. obesity and diabetes are often associated with abnormal lipid level
Meda is the main factor which is affected (Dushya) in Medoroga and Prameha <sup>[8]</sup>	

### Derangement of metabolism of medo dhatu

Agni is the main factor which is responsible for all metabolic activities of the body. Kshaya and Vriddhi of Dhatus mainly depend on functions of Agni. When Agni is decreased, food

particles are not properly digested and it will lead to production of Ama (undigested/ partially digested food), which is responsible for various metabolic disorders in the body.

If Agnimandyata is present at the level of Jatharagni then Ama is usually restricted to Koshtha. There will be no production of Ahara Rasa and the result will be Dhatu kshaya. If Agnimandya is present at the level of Bhutagni then Ama is restricted to Ahara rasa and this Ahara rasa which is improperly formed cannot be assimilated by Dhatus and results in Dhatukshaya. It should be noted that Ama will be in circulation<sup>[9]</sup> and it further collects at different sites of body. Because of disturbed Medo Dhatwagni the homologous nutrients present in Poshak Medodhatu will be in circulation leads to accumulation of abnormal level of Poshak Medodhatu in Rasa. This condition is named as dyslipidemia.

Poshak Medodhatu can not be assimilated into Sthayi Medodhatu by Medo Dhatwagni, leads to excessive Poshak Medo Dhatu in circulation. Any cause which can lead to Kaphavridhi, Pittakshaya or Vata Prakopa can lead to this condition. The consequences of such increase in Poshaka Medo Dhatu may risk the disorders such as Atherosclerosis, Dhamani Praticaya (Hypertension), etc.<sup>[10]</sup>

### **Medoroga**

There is no any separate disease by the name of Medoroga is described in Charaka Samhita, but Atisthaulya is mentioned under Ashtauninditiya, which is actually Medoroga. In the same chapter causes, symptoms, aetiology and treatment of Medoroga are described. In Madhava Nidana that the term Medoroga is used while describing its etiology.

Abnormal accumulation of Meda Dhatu in the body is known as Medodushti. Medodushti includes several numbers of other Medajanya vikaras, which are collectively known as Medoroga.

### **Causes**

Nidan of Medoroga may be categorised in two types:

1. **Exogenous causes:** These are intake of fat-rich diets, over-eating etc.
2. **Endogenous causes:** These are Dosha, Dushya, Srotas, etc.

### **Pathogenesis**

According to Charaka, just because of Avarana (obstruction) of all the Srotas (channels) by the Meda, there is vridhi of koshhashrit samana vayu, which in turn causes ati sandhukshan

of Jatharagni. The rise in jatharagni leads to rapid digestion of consumed food and leaves the person craving for more food. If at all due to some reason the person does not receive more food the increased agni causes dhatu pachan which may lead to various complications. But because of their hunger the persons tend to eat more and the cycle continues. In this way it becomes a vicious circle creating excessive improperly formed medo dhatu, giving various symptoms of Medoroga.

### **Dyslipidemia**

Dyslipidemia is an abnormal amount of lipids in the blood i.e. increase of plasma cholesterol, triglycerides (TGs), or both, or a low high-density lipoprotein level that contributes to the development of atherosclerosis. In developed countries this is often due to diet and lifestyle.

### **Classification**

Based on Etiology, Dyslipidemia is classified as:

1. Primary Dyslipidemia
2. Secondary Dyslipidemia

#### **1. Primary dyslipidemia**

Primary dyslipidemia may be expressed in the form of familial syndromes. About 60% variability in the serum fasting lipids may be genetically determined.

#### **2. Secondary dyslipidemia**

Secondary causes are the reasons to most cases of Dyslipidemia in adults. The most important secondary cause in developed countries is their sedentary lifestyle with excessive dietary intake of saturated fat, cholesterol, and Trans fats. Trans fats are polyunsaturated or monounsaturated fatty acids to which hydrogen atoms have been added and regularly used in many processed foods and are as atherogenic as saturated fat.

### **Clinical manifestation of dyslipidemia**

Dyslipidemia itself usually causes no symptom but can lead to symptomatic vascular disease, including coronary artery disease (CAD) & peripheral arterial disease.

High levels of TGs ( $> 1000\text{mg/dl}$  [ $11.3\text{mmol/L}$ ]) can cause acute pancreatitis. Increase level of LDL can cause eyelid xanthelasmas, arcus corneae, & tendinous Xanthoma at the Achilles, elbow, & knee tendons & over metacarpophalangeal joints.

Patients with the homozygous form of familial hypercholesterolemia may have the above finding plus planar or cutaneous Xanthoma.

Patients with severe elevation of TGs can have eruptive Xanthoma over the trunk, back, elbows, buttocks, knee, hands, & feet.

Patients with rare dysbetalipoproteinemia can have palmer & tuberous Xanthoma.

Severe hypertriglyceridemia ( $>2000\text{mg/dl}$ ) [ $>22.6\text{mmol/L}$ ] can give retinal arteries & veins a creamy white appearance (lipemia retinalis).

## DISCUSSION

Any theory emerged from classical or experimental study can only be accepted if there is proper reasoning behind the thoughts. According to ancient research methodology, before establishing any theory discussion is a process of re-examining and forming the base for conclusion of any work.

Medoroga as described in Ayurveda, can be closely compared with dyslipidemia. The main cause of dyslipidemia is ill-mannered life style, excessive intake of calories and less physical activity to burn these calories. Similarly, in Ayurveda excessive accumulation of Medo Dhatu leads to the entity Medoroga. In today's hectic schedule, a person has no time for physical effort or exercise. Ayurveda has given equal importance to Pathya – apathy regarding the treatment of the diseases. Considering the pathological factor the Acharya have advocated numerous Ahara and Vihara for Medoroga under the caption of Santarpanjanya Vikara.

The present study tried to correlate the conceptual facts to show the relation between abnormal levels of lipids, Medo dhatu and Medoroga and its complications.

## CONCLUSION

In Ayurvedic literature, dyslipidemia is explained under the title Medoroga. Etiological factors, sign and symptoms which lead to Medoroga are merely similar to dyslipidemia. The equilibrium between Dosha, Dhatu, Mala and Agni help in occurrence of disease. Excessive accumulation of Kapha and Meda with its etiological factors lead to Medoroga, so specific diet management should be followed.

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