

**DYSLIPIDEMIA AND MEDO ROGA– A CRITICAL REVIEW****Dr. Shalini<sup>\*1</sup> and Prof. R.K. Joshi<sup>2</sup>**<sup>1</sup>Ph.D. Scholar, <sup>2</sup>Professor & H.O.D.

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N.I.A., Jaipur.**ABSTRACT**

The incidence of lifestyle diseases like hypertension, diabetes mellitus, dyslipidemia and overweight/obesity associated with cardiovascular diseases is high on the rise. Dyslipidemia is elevation of plasma cholesterol, triglycerides (TGs), or both, or a low high-density lipoprotein level that contributes to the development of atherosclerosis. The epidemic of cardiovascular disease (CVDs) is the most prevalent cause of death and disability in both developed as well as developing countries. In India, there has been an alarming increase in the prevalence of CVD over the past two decades so much so that accounts for 24% of all deaths among adults aged 25–69 years. The World

Health Organization estimates that Dyslipidaemia is associated with more than half of global cases of ischemic heart disease and more than 4 million deaths per year. Ayurveda is recognized as foremost life science and describes ways to prevent and manage lifestyle disorders. The holistic approach of Ayurveda, treating the patient as a whole, meaning intervention targeted toward complete physical, psychological and spiritual well-being makes this science a wonderful option in lifestyle disorders. So here an attempt has been done to understand the dyslipidemia in ayurvedic perspective.

**KEYWORDS:** Dyslipidemia, Medo Roga.**INTRODUCTION**

In the modern era, sedentary life-style and drastic changes in food pattern are leading cause of the diseases such as dyslipidemia, Type-II Diabetes Mellitus (DM), hypertension and obesity, which are closely linked with each other and often co-exist in individual making the syndrome, more complex and difficult to manage.

According to National Commission on Macroeconomics and Health, there would be around 62 million patients with the Coronary Artery Disease (CAD) by 2015 in India and of these 23 million would be patients younger than 40 years of age.<sup>[1]</sup> The four leading causes of death globally in 2030 are projected to be Ischemic heart disease, cerebro-vascular disease (stroke), HIV/AIDS and chronic obstructive pulmonary disease.<sup>[2]</sup>

According to WHO survey done in 2002, almost 1/5<sup>th</sup> (80%) of global stroke events & about 56% of global heart disease are attributed to Dyslipidaemia. This is responsible for about 4.4 million death (7.9% of the total) & 2.8% of global disease burden.

During the past three decades, dyslipidemia as a risk factor for CVD has increased markedly in India. Dyslipidaemia alone currently affects approximately 10% of global population. For every 1% increase in cholesterol level there is 1-2 % increase in the incidence of CVD.

Dyslipidaemia is a disorder of lipoprotein metabolism, which can include overproduction or deficiency of lipoproteins or both. The disorder can manifest as an elevation of plasma cholesterol, TGs, or both, or a low high density lipoprotein level or all three together that contributes to the development of atherosclerosis. Dyslipidaemia may be related to other diseases (secondary Dyslipidaemias) or to the interaction between genetic predisposition and environmental factors. The management of Dyslipidaemia is directed at the identification of those at high risk of cardiovascular disease and the primary prevention and secondary prevention of cardiovascular disease by the management of all risk factors, including smoking, hypertension, diabetes and obesity.

The need to do a comprehensive review of this particular syndrome has arisen in view of the ever increasing incidence of this entity.

In *Ayurveda* there is no such term described like Dyslipidemia. Yet, the lipids, explained in modern sciences has close resemblance with *Sneha Dravya* in *Ayurveda* i.e. *Meda and Vasa*. *Meda* is the 4<sup>th</sup> *Dhatu* out of seven, whose function is to provide *Sneha* to the body.

#### ***Pramana of Medo Dhatu***

The total quantity of *Meda* is 2 *Anjali*. And that of *Vasa* is 3 *Anjali* and it may vary to some extent in different persons. Thus the total *Medas* content of the body enumerates to 5 *Anjalies* & total measurable body elements are counted as 56.5 *Anjalies*; thereby counting the *Medas*

content to be roughly  $1/11^{\text{th}}$  of total body weight which is an accordance with the total amount of body fat ( $1/12^{\text{th}}$  of body wt.) according to modern science which may vary in *Medoroga*.

**Table showing Comparison between the concept of *Meda* and Lipids.**

<b>MEDA</b>	<b>LIPIDS</b>
Ingestion of excessive <i>Snigdha</i> ( <i>Ghrta</i> , <i>Taila</i> , <i>Vasa</i> & <i>Majja</i> ) <sup>[3]</sup> cause <i>Medovridhhi</i>	Intake of high fat diet ( <i>ghee</i> , oils, Marrow, butter etc.) increases body lipids
Dietary intake of excessive <i>Madhura Dravya</i> causes <i>Medovridhhi</i> <sup>[4]</sup>	Increased consumption of carbohydrates (especially sucrose enhances cholesterol level). <sup>[5]</sup>
<i>Medo-Snigdhangata</i>	Fat gives an oily appearance of the body.
<i>Meda</i> is the main factor which is affected ( <i>Dushya</i> ) in <i>Medoroga</i> and <i>Prameha</i> etc.	Obesity and diabetes are often associated with abnormal lipid level.

Dyslipidemia is mainly due to abnormal metabolism of *Meda*, though from the beginning of the digestive process *Meda* may formed from *Ahara Rasa* specially which having the profuce quantity of *Sneha*. That is rightly said by *Acharya Kanthadatta* in his '*Madhukosha*' commentary – '*Snehat medo janayati*'.<sup>[6]</sup>

### **Concept of *Meda***

Two types of *Meda* (Fat) are described in Ayurveda.<sup>[7]</sup>

#### **1. *Baddha Meda* / *Poshya Medo Dhatu***

The fat which is not mobile and is stored in the form of fat at various places (fat depots/ omentum/muscles in the body).

#### **2. *Abaddha Meda* / *Poshaka Medo Dhatu***

The fat which is mobile and circulates in the body along with blood in the form of lipids (Cholesterol, Triglycerides, LDL, HDL & VLDL etc.).

Among these two, *Poshaka Medo Dhatu* is mobile in nature, which is circulated, in the whole body along with the *Rasa- Rakta Dhatu*, to give nutrition to *Poshya Medo Dhatu*. Second, *Poshya Medo Dhatu* is having immobile nature, which is stored in *Medodharakala*. The site of *Medodharakala* is *Udara* (abdomen) and *Anuasthi* (bones). *Udara*, *Sphika* (buttoks), *Stana* (breast tissue) are also depots of *Poshya Meda*.<sup>[8]</sup> *Medo Dhatu* is also considered as a *Sneha*

dominant *Drava Dhatu* which is having *Guru* (heavy), *Snigdha* (oiliness) properties and dominance of *Prithvi* (earth), *Apa* (water) and *Teja* (fire) *Mahabhoota*. As a result of *Mamsagnipaka*, it can be distinguished in the form of *Sukshmathaga* (minute or nano portion), which is responsible for the further transformation of the *Medo Dhatu*.

According to *Ayurveda*, *Nidana* for *Medo Dhatu Dushti* is excessive intake of *Shleshma Vardhak aahar- vihar* and reduced exercise causes *Agnidushti* resulting in excessive formation of *Sama Meda*. Due to *Avarana* of *Marga* by the *Sama Medas*, *Poshana* of subsequent *Dhatu* in the body is hampered and there is *Upachaya* of *Medodhatu*. These are the references from classical literature bearing similarity to the aetiology, features and complications of dyslipidemia. Thus it presents as “*Medovridhhi and Medoroga*”.

*Sthaulya*, *Medoroga* and *Medodosha* have been described to be synonymous to each other. The term *Medoroga* was first used by *Acharya Madhav* to define *obesity* and related lipid complications. Literally it means a disease in which *Medo- Dhatu* is deranged. It is only one type of disease according to *Ayurvedic* texts, but *Adhamalla* has tried to distinguish between two types of *Medoroga*; 1) *Adiposity (Obesity)*, including its clinical features (*Sthaulya*) & 2) *Lipid Disorders* where *Meda* acts as an etiological factor in the genesis of other Diseases (secondary).

Abnormal accumulation of *Meda Dhatu* in body is known as *Medodushti*. *Medodushti* includes several numbers of other *Medovikara*, which are collectively known as *Medoroga*. *Acharya Charaka* has described *Medodosha* under the title of *Atisthaulya*. *Acharya Charaka* mentioned *Atisthaulya* under *Ashtuninditiya*, which is actually *Medopradoshaja Vikara*. In nutshell, it can be stated that abnormal and unequal distribution/collection of *Medo Dhatu* in body seems to be known as *Medodushti / Medoroga*. *Acharya Dalhana* has quoted three main etiological factors (*Vishistaharavashat*, *Adrishtavashat*, *Medosavrita Margatvat*) of *Sthaulya* which encompass all the causes leading to an increase in the *Asthayi Medo Dhatu* thereby leading to a state of *Dyslipidaemia*. *Kapha* and *Meda Dhatu* two are main *Dosha-Dushya Ghataka* in pathogenesis. Accumulation of *Kapha & Meda* leads to *Srotovarodha* causing trapping of *Samana Vayu* in *Koshtha* leading to *Avarana* to *Samana Vayu*. It leads to *Jatharagni Sandhukshana*. Increased *Jatharagni* leads to rapid digestion of ingested food & leaves the person craving for food. This vicious cycle continues resulting in *Meda Atiupachaya*.

*Dalhana*, commentator of *Sushruta Samhita*, has further clarified this concept & has discussed the phenomenon of conversion of *Madhur rasa dravya* into *Sneha dravya* leading to adiposity. Commenting on *Su.Su. 15/37* in his '*Nibandha Sangraha*' commentary, he says if indulge in frequent consumption of *Shleshmala ahara* (*Madhura, Guru, Sheet, Snigdha*) without undertaking adequate physical activity & rather sleeps for a long time, his *Annarasa* remains *Apakva* & become *Ama*. This *Ama* is *Madhura* & *Atisnigdha* in character and is made available for conversion into *Sneha (Meda)* owing to its affinity to *Meda*. Such *Amarasa* does not provide nutrition to other *Dhatu*, as the increased *Meda* gets deposited in various microchannels & obstructs them.<sup>[9]</sup>

In *Ayurveda* also *Meda* is consider as prime *dushya* in context of different diseases like- *Prameha, Medoroga* and *Sthaulya* etc. In the Metabolic Syndrome the abnormal *Meda*, when deposited into subcutaneous tissue, it gives the clinical presentation of Obesity and similarly when that incompact *Meda (Abaddha)* extracted to *Basti* (urinary system) it creates the manifestations of *Prameha* (D.M.) and when this *Meda* is unnaturally deposited in the arterial wall and increase the peripheral resistance (*Dhamnipratichaya*/arteriosclerosis), it is term to clinical manifestation like Hypertension and when these unnatural *Meda* present in the *Rakta-vaha srotas* (CVS) leads to increased level of unwanted fat level- Hypercholesterolemia.

*Abaddha Meda Dushti* mentioned in *Prameha* in *Ayurveda*, can be considered as Dyslipidaemia. It should be treated on the lines of management of *Medoroga* and *Prameha*.

## CONCLUSION

Dyslipidaemia is one of the major modifiable risk factor for diabetes mellitus, atherosclerotic diseases like coronary artery diseases, stroke etc. A precise reference of dyslipidaemia is not available in *Ayurveda* but it can be understood in terms of *Bahu abaddha medas*. It is a *medo dushti* predominant disorder. Being a Metabolic syndrome there lays a definite relation between pathophysiology of Hypertriglyceridemia with the *agnivaigunya* at different levels starting from *jatharagni* up to *dhatwagni* and *kapha* as *pradhana dosha, rasa* and *meda dushya*. Faulty dietary and lifestyle factors and unseen factors plays important role in the pathogenesis.

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