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‘Critical review view on Hyperlipidaemia and its management with Ayurveda.’

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Abstract: Hyperlipidaemia is a common lifestyle illness defined by an increase in one or more plasma lipids such as triglycerides, cholesterol, cholesterol esters, phospholipids, and plasma lipoproteins. Hyperlipidaemia is a big public health problem right now. It is one such dietary condition that has been related to a number of health problems, including cardiovascular disease, metabolic syndrome, and even hypertension. The ability of hyperlipidaemia to contribute to the pathogenesis of atherosclerotic diseases like coronary heart disease, which dominates the morbidity and mortality picture. It works with Santarpanjanya Vyadhi. In this Dhatupradoshaja Vikara, Medodhatu takes the initiative. The condition's genesis is impacted by both Kapha Dosha and Ama. The increased intake of causative chemicals worsens Kapha Dosha, and Annarasa stays Apakva and develops Ama. Because their properties are similar, the raised lipids can be linked to Sneha, Medo Dhatu, and Sama Rasa. It is more closely associated with Medodushti in Ayurveda, which is only a precursor stage of Medoroga that is easily reversible with an efficient Ayurvedic regimen. Given the significance of Agni and Ama in the pathophysiology of hyperlipidemia, medicines with Dipana, Pachana, Ama Nasahak, Kaphamedohara, Srotoshodhak, and Rasayan properties will be especially beneficial in the treatment of hyperlipidaemia.

Key-words: Hyperlipidaemia; Medoroga, Medovaha Srotodusti Vikara, Cholesterol, Lipids.

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INTRODUCTION:

Atherosclerosis affects different parts of the circulatory system in different ways, resulting in distinct clinical symptoms depending on which circulatory bed is affected. Hyperlipidaemia is a major risk factor for cardiovascular disease (CVDs). Cardiovascular illnesses are expected to be the leading cause of death and disability in the globe by 2025, accounting for one-third of all fatalities. In 2015, 17.7 million individuals died from cardiovascular diseases (CVDs) worldwide. Coronary artery disease caused 7.4 million of these fatalities, whereas stroke caused 6.7 million. Hyperlipidaemia is one of the risk factors for this condition. [4-6]

Triglycerides and cholesterol are the two major lipids found in blood. Lipoproteins are lipid transporters that carry lipids from the liver to the peripheral organs. Cholesterol is found in all animal cell membranes and serves as the foundation for steroid hormones and bile acids. Triglycerides play an important role in the transport of energy from meals to cells. Higher lipid levels in the blood arise from either an increased rate of synthesis or a reduced rate of lipoprotein breakdown in dyslipidaemia. Hyperlipidaemia is defined as a rise in one or more lipids, such as cholesterol, cholesterol

esters, phospholipids, or triglycerides. [1,2,3] Plasma lipid abnormalities can cause coronary, cerebrovascular, and peripheral vascular artery issues. When the concentration of cholesterol or triglyceride-carrying lipoproteins in the blood surpasses a certain threshold, hyperlipidaemia occurs. Angina symptoms usually appear gradually when the coronary artery occlusion surpasses 75%. Clots occur on the uneven surfaces of arteries and can get dislodged, impeding downstream blood flow. These blood clots are commonly responsible for heart attacks and strokes. In addition, atherosclerotic blood vessels are frequently weak and prone to rupture. The best treatment for problems like atherosclerosis is prevention. As a result, traditional medical interventions frequently emphasize lifestyle changes such as lowering saturated fat consumption, quitting smoking, and engaging in cardiovascular exercise.

Although dyslipidemia cannot be conclusively linked to any clinical states indicated in Ayurvedic classics, Acharya Chakrapani's idea of Abaddha Meda is similar to the condition identified in current investigations. Many Ayurvedic scholars have related it to Rasagata sneha vridhhi, Raktagata sneha vridhhi, and Rasaraktagata

sneha vriddhi. It is linked to Medo dushti. Because of their comparable qualities, the raised lipids can be linked to Sneha, Medodhatu, and Samarasa. Hyperlipidaemia is linked to Asthayi Medo Dhatu Vriddhi, which is Ama in nature and is retained in the body for a prolonged period of time, producing further issues.[7,8] We have a wide range of medicines in the allopathic medical system that are highly effective in normalizing cholesterol levels, but they also have side effects such as headache, nausea, intestinal problems, rashes, sleep disturbances, Myalgia, and an increase in serum transaminase, which can lead to liver damage.

Hyperlipidaemia according to Ayurveda

In Ayurveda we can relate hyperlipidaemia with Rasagata Sneha Vriddhi, Rasa Raktagata Sneha Vriddhi, Medovriddhi, Medoroga or Medodosha, etc.

Hyperlipidaemia occurs due to

- a. Agnimandya
- b. Ama utpatti
- c. Medoroga

Nidana (Etiology)

❖ Aharaja Nidana (Dietary Factors) -

Excess carbs in meals are quickly turned to fat. Carbohydrate-derived

fats are more saturated and have a higher melting point. Excessive protein-rich food consumption, such as milk and milk products, can raise lipid levels in the body. Protein is converted to triglycerides and stored in the body when dietary protein intake exceeds tissue utilization. Dravyas with Prithvi and Apya Mahabhuta dominance have the qualities Guru (heavy), Madhura (sweet), Sheeta (cool), Snigdha (oily), Shleshmala (Kapha stimulating), Atipicchila (excessively sticky), and Abhishyandi. Avyayama, Divaswapna, and excessive ingestion of Guru Ahara and Varuni induce Medovaha Srotodushti Vikara in the Medadhatu, culminating in Khavaigunya.[9,10]

❖ Viharaja Nidana - Avyayama (no exercise), Avyavaya (no sexual commerce), Divaswapna (daytime napping), Asanasukha (excess sitting), Swapnasukha (excess sleeping), Bhojanottara Snana (bath after meal), Bhojanottara Nidra (sleep after meal), and other factors contribute to Kapha aggravation. As a result, one of the etiopathologies of Medoroga is Kapha

aggravation and the development of Meda. Sthaulya is induced by an increase in Sneha Guna in the body, which causes an increase in Kapha Dosh and leads to Meda Vriddhi. Sthaulya is caused by Taila Abhyanga, Snigdha Udavartana, and Madhura Snigdha Basti, all of which increase Sneha Guna in the body.[11,12]

- ❖ **Adrishtavastha (Beejadoshaja Nidana)** -This is caused by defects in the Shukra or Shonita, or both, which are passed down through generations. All Acharya have discovered genetic anomalies as a cause of Meda Roga and associated ailments such as Prameha. According to Acharya Charaka, one of the etiological components of Atisthaulya is beejadosha (defective gene).[11,12]

Clinical manifestations

- According to Acharya Charaka, the body is deformed by buttocks, abdomen, and breast and the individual is less enthusiastic about his physical exercise.
- Patients are more likely to develop xanthelasma, which are cholesterol

deposits beneath the skin, particularly on or around the eyelids.

- Patients with high triglyceride levels may develop many pimple-like lesions across their bodies; eruptive xanthomas over the trunk, back, elbows, buttocks, knees, hands, and feet.[13,14]

Samprapti Ghatakas

Dosha	Kapha pradhana tridosha
Dushya	Jatharagni, Rasa, Rakta, Meda dhatvagni
Ama	Tajjanya Ama
Srotas	Rasa, Rakta and Medovaha
Udbhava Sthana	Amashya
Rogamarga	Bahya or Abhyantra
Vyaktasthana	Hridaya (Hridroga)

Samprapti (Pathogenesis)

According to Acharya Charaka, Ahara is the primary pathogenic factor for Medavridhi or Medadushti in Medoroga, however Acharya Sushruta believes Amadosha is the primary pathogenic element for Medavridhi or Medadushti in Medoroga. According to

Acharya Charaka, the Koshtagata Vata becomes entangled in the alimentary canal as a result of vitiated Meda (due to overindulgence in causative factors) and urges the Jatharagni, which swiftly digests the ingested food items, which are then promptly absorbed by the aggravated Vata. As a result, the obese person has a strong urge to eat, resulting in Medovaha Srotodusti. When Kapha Dosha worsens owing to etiological circumstances, food remains undercooked and sweeter, and this Rasa Dhatu travelling throughout the body generates Meda, according to Acharya Sushruta.[15]

According to the Sushruta Samhita, if a person regularly takes Shleshmala Aahara (Madhura, Guru, Sheeta, Snigdha) without sufficient physical activity and instead sleeps for an extended period of time, his Annarasa would remain Apakva and become Ama. This Ama possesses the properties of Madhura and Atisnigdha, and because to its affinity for Meda, it is made available for transformation into Sneha (Meda). Because the bigger Meda becomes deposited in numerous micro channels, obstructs them, and produces obesity if deposited in adipose tissue, such

Amarasa does not provide nutrients to other Dhatus. [16,17]

Madhura and Snigha ahara, Adhyashana, and Divaswapna create Kapha vruddhi, namely the Snaihika guna of Kapha and the development of Amarasa, as a result of the excessive Madhura of Anna rasa during Avasthapaka. As a result of the Ashrayaashrayi bhava between Kapha and Rasa, the Snaihika guna of the Rasa dhatu increases, and Ama is created. Because the Rasa Dhatwagni would be unable to digest this Ama, Malarupi Kapha production will rise. When the extended Snaihika guna of Rasa Dhatu and Malarupi Kapha enters the Rasavaha Srothas, hyperlipidemia ensues. If not treated properly and promptly, Dhamani Prathichaya will develop. It may have an effect on other Dhatus, manifesting as Hridroga, Vatavyadhi, Prameha, and more.

Ayurvedic Chikitsa (Management)

According to Ayurveda, the general principle of management of any disorder is divided into three parts:

Nidana Parivarjana : Aharatmaka, Viharatmaka, Manasa, and other Nidana implicated in illness etiology should be avoided. If they are provocative and vitiating,

Medavahasrotas, Medavriddhikara Ahara, and Vihara should all be avoided. [18-20]

Samshodhana (Bio cleaning treatments) -

To cleanse the body, Panchkarma techniques may be used. It has been demonstrated that combining Lekhana basti with Vacha and Manjistha is useful in the treatment of dyslipidemia. Bahya Shodhana aids in the removal of foetal odor, reduces excessive perspiration, and soothes irritated Dosha. Acharya Charaka cites Vamana, Virechana, and Raktamokshana in his Abhyantara Samshodhana for Santarpanottha Vikara, which can be utilized to treat hyperlipidemia. He also suggests Rukshya, Tikshna, and Ushna Basti for Sthaulya management, which can aid in the treatment of hyperlipidemia. [20–22]

Samshamana (Drug Therapy) - A variety of herbal and herbo-mineral remedies are used to improve the cardiovascular system, operate as microcirculatory channel cleansers (srotovisodhaka), and help in cholesterol metabolism. By increasing Meda Dhatvagni, Samshamana Karma lowers Vata, Pitta, and Kapha, as well as Medadhatu deficiency. Dravyas recommended by Acharya Sushruta were Shilajatu, Guggulu,

Gomutra, Triphala, Madhu, and Lekhana Basti.

Aushadhi (Medicine) [23-24]

- Lekhaniya mahakashaya,
- Mustaka,
- Kushtha,
- Haridra,
- Vacha, etc.

Combined Drugs [25-26]

- Vati - Arogyavardhini Vati, Kutaki vati, Bhedani vati.
- Churna - Triphala Churna, Vacha Churna, Trikatu Churna, etc.
- Kwatha - Mustadi Kwath, Agnimantha Kwath, Brihat Panchmool Kwath.
- Rasayana - Shilajeet Rasayana, Guggulu Rasayana, Lauha Rasayana.
- Lepa- Daurgandhyahar Lepa, Medohara Lepa, Vasadi Lepa, Haritaki Pralepa.

Ayurvedic lifestyle

- Walking, swimming, running, or rowing aerobic exercise, stationary cycling/bicycling.
- Yoga Asana like Suryanamskar, pawanmuktaasan, utthanpadaasan, naukasan, bicycling.
- Pranayam (Breathing exercise and meditation)

- Viharaja pathya (Shrama, Vyayama, Ushnodaka Sevan, Prajagaran, Bhramana, Rohan, Upavasa) etc. should be followed.

Ayurvedic diet

One should consume food of bitter, astringent taste, dry, Vegetables like carrot, cabbage, cauliflower, Pulses, lemon water with honey, whole grains, whole oats. [27,28]

Discussion:

Hyperlipidemia is a condition in which lipoprotein production is either excessive or inadequate. High total cholesterol, LDL cholesterol, and triglyceride levels, as well as a reduction in HDL cholesterol levels throughout the body, characterize hyperlipidemia. It can be detected in the blood by an increase in total cholesterol (Bad Low-Density Lipoprotein (LDL) cholesterol) and/or an increase in triglyceride concentrations with a decrease in good high density Lipoprotein (HDL) cholesterol concentration. It is commonly regarded as a major risk factor for coronary heart disease (CHD); every 1% increase in cholesterol levels increases the risk of CHD by 1-2%. Hyperlipidemia is described as an elevated Hyperlipidemia is defined as a rise in lipids and lipoproteins in the blood, which can be

connected to an increase in Medas in the body and is associated with Medo Roga in Ayurveda.

There is no specific mention of a disease entity that is directly connected to hyperlipidemia. Rasagat, Raktagat, or Rasaraktagat Sneha vridhhi, Medoroga, Medo Vridhhi, Ama Medo Dhatu, Sthaulya, and other Ayurvedic academics have sought to relate it therapeutically.[20,25] Because Agni is in charge of all metabolic functions in the body, an Ayurvedic therapy for Hyperlipidemia involves steps to strengthen Agni and digest Ama. It is solely responsible for any changes in Dosha, Dhatu, or Mala. Deepana, pachana, and rochana gunas modulate metabolism at the dhatu stage, as do agni deepana, amapachana, srodho shodana, and snehakleda-medo vishoshana.[29]

Conclusion:

Most societies now acknowledge hyperlipidemia and its complications as a medical disorder. Furthermore, hyperlipidemia worsens metabolic imbalances and increases the risk of cardiovascular disease, especially in people who have diabetes and high blood pressure. Understanding and controlling the etiology of

hyperlipidaemia is critical due to its link to a variety of arterial diseases such as coronary artery disease. A 1% reduction in cholesterol is estimated to prevent chronic heart disease by 2% to 3%. In terms of underlying etiology, clinical characteristics, and pathophysiology, hyperlipidemia is identical to Medovaha Srotodusti Vikara. The right use of Nidana parivarjana, Ritucharya, and Dinacharya will aid in the maintenance of Agni and the balance of Doshas Dhatus and Malas, hence preventing the onset of illness. Ayurveda may help not only with healing, but also with prevention by interrupting the pathogenic process. More study is required to validate, investigate, and apply these Ayurvedic theories and therapies, which might be beneficial to the world in the future.

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