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AYURVEDIC APPROACH IN MANAGEMENT OF DYSLIPIDEMIA: A CASE STUDY

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ABSTRACT

Dyslipidaemia is a condition in which there are high levels of fat particles (lipids) in the blood. According to Indian heart journal high cholesterol level is present in 25–30% of urban population and 15–20% of rural population. This prevalence is lesser in countries with high income. The most common type of dyslipidaemia in India are borderline high LDL, high level of triglycerides and lower HDL level in blood. Of all the factors associated with CHD (e.g., plasma cholesterol, high blood pressure, cigarette smoking, lack of physical activity) plasma cholesterol has a very high statistical significance with the incidence of CHD. The risk of CHD appears to increase as the plasma cholesterol concentration rises. Various studies have supported the role of elevated blood levels of cholesterol and low-density lipoproteins (LDL) in the development of atherosclerosis. Geographical studies have shown that there is no population in whom CHD is common that does not have a relatively high mean level of plasma cholesterol (TC) in adults. According to Ayurveda Dyslipidaemia is resulting from *Medo-dhatu Dushti*. In this situation *Nidan Privarjan (*elimination of causes) and pursue of specific *Pathya-apathya* measures are very helpful in the management of Dyslipidaemia. In present

case we applied the principle of *Medo-dhatu chikitsa* for Dyslipidaemia. Dyslipidaemia is a major problem now a day. Most common treatment used according to modern science is Statins such as Simvastatin, Lovastatin, Atorvastatin, Rosuvastatin etc. which have their own side effect like headache, difficulty in sleeping, flushing of skin, muscle aches, tenderness, myalgia, drowsiness, dizziness, nausea or vomiting, abdominal cramping or pain etc. so statins may cause more harm than good. As Dyslipidaemia is a lifestyle related disorder, there is a great need of proper lifestyle modification along with appropriate natural treatments, which improve physical condition, to prevent the complaints associated with the disease, and protect from upcoming diseases associated with Dyslipidaemia (like CHD, angina, coronary artery disease, heart attack). In this context Ayurveda provide the safe, cheap, side effect free management for Dyslipidaemia. The authors tried to share their experiences through this case study to establish that Ayurvedic treatment in the form of specific *Pathya Ahara-Vihara* are very effective in the management of Dyslipidaemia.

KEYWORDS: Dyslipidaemia, *Medo-dhatu Dushti*, *Nidan Privarjan, Pathya-Apathya.*

INTRODUCTION

Dyslipidaemia is a disorder of lipoprotein metabolism, which include abnormality in any or all the lipoproteins in blood. Dyslipidaemias may be manifested by elevation of the total serum cholesterol, low-density lipoprotein (LDL) and triglyceride concentrations, and a decrease in the high-density lipoprotein (HDL) cholesterol concentration in the blood.[1]

According to ICMR-INDIAB study, the prevalence of Hypercholesterolemia was 13.9%, of hypertriglyceridemia was 29.5%, among which prevalence of low HDL-C was 72.3%, and prevalence of high LDL-C levels was 11.8%.[2]

Cholesterol, along with triglycerides and other fats, can build up inside the arteries. This makes the blood vessels narrower and makes it more difficult for blood to get through. The build-up can also cause a blood clot to form. If a blood clot breaks off and travels to the heart, it causes a heart attack. If it goes to brain, it can cause a stroke. Coronary disease is the leading cause of death now a days.in developing countries like India there has been an increasing trend in the incidence of CAD because of changes in the lifestyle and behavioural pattern of people.[3]

Basically, Lipoproteins are complex lipids which are essential in transportation of cholesterol, triglycerides, and fat-soluble vitamins. Increased level of LDL cholesterol is indicator for coronary heart disease while Very low-density lipoproteins (VLDL) are the indicator of premature atherosclerosis.[4] If sum of total cholesterol number is divided by HDL cholesterol number, it is called cholesterol-HDL ratio. Higher ratio means a higher risk of heart disease. The ratio between Total Cholesterol and HDL is less than 3.5 has been recommended for prevention of CHD.[5] Coronary Heart Diseases are responsible for 25-30% of deaths in developed countries. CHD's are originated by several risk factors; out of them Dyslipidaemia is most important.[6] most people with dyslipidaemia remains unaware unless it became severe. It is found usually when lipid profile has been done for risk factors or a test for another condition. Severe or untreated dyslipidaemia can lead to other conditions, including Coronary artery disease (CAD) or peripheral artery disease. (PAD). Both CAD and PAD can lead to serious health hazards, including heart attacks and strokes. Common symptoms include:

- Leg pain, especially when walking or standing
- Excessive thirst
- tightness or pressure in the chest and shortness of breath
- indigestion
- sleep problems during night and daytime exhaustion
- lethargy
- heart palpitations
- cold sweats
- vomiting and nausea
- swelling in the legs, ankles, feet, stomach, and veins of the neck.[7]

Hyperlipidaemias are considered as primary and secondary subtypes.

Primary hyperlipidaemia: -It is generally due to genetic causes (such as a mutation in a receptor protein).

Secondary hyperlipidaemia: - It is caused due to other underlying causes such as diabetes. Lipid related abnormalities are common in the general population and these are the modifiable risk factors for CVD (cardiovascular disease) due to their act upon atherosclerosis.[8]

Causes of Secondary Hyperlipidaemia

Acquired hyperlipidaemias are also called secondary dyslipoproteinemias. They are responsible for increased risk of premature atherosclerosis. When these are associated with marked hypertriglyceridemia, they may cause pancreatitis and other complications. The most common causes of acquired hyperlipidaemia are:

Diabetes mellitus (type 2)

Renal failure

Hypothyroidism

Nephrotic syndrome

Consumption of alcohol

Some metabolic disorders

An another acquired cause of hyperlipidaemia is postprandial hyperlipidaemia, which is not included in above mentioned category, as it is a normal increase in lipids following ingestion of food.[9,10]

According to *Madhav Nidana* a person following *apathya Ahara Vihara* like *Avyayama* (lack of physical excercise), *Diwaswapna* (day sleeping), *Shleshmala Ahara* (oily and sticky food), and *Madhura* Rasa (sweets), leads to *Medo vriddhi.* Due to deposition of *Medas* in the *Srotasa* causes derivation of other *Dhatus* and defective tissue metabolism, that's why only *meda* deposition occurs in body and the person becomes *Asakta* (incompetent to do his daily routines properly).[11]

This kind of pathogenesis leads to *Kshudra shwasa* (shortness of breath), *Trisha* (excessive thirst), *moha*, *Swapan* (lethargy), *Krathana* (unclear pronounciation), *Sadan* (dizziness), *Kshut* (excessive hunger), *Sweda* (sweating), *Dourgandhya* (bad body odour), *Alp-pran*, *Alp-maithuna* (difficulty in coitus).[12]

Ayurvedic methods of change in lifestyle like drinking medicated water (*Shadangapaniya*) along with *Pathya*-Ahara and *Vyayam Abhyas* helps a lot to conquer Dyslipidaemia and provide an effective management over allopathic drugs burden and also reduces economic stress.

CASE

Krishna kumar Tiwari, a 31 years old male patient, resident of VPO suliyawas, tehsil Dantaramgargh, district Sikar, Rajasthan came in OPD with the complaints of overweight, pain in legs, lethargy, excessive thirst, and shortness of breath during climbing up stairs.

PHYSICAL EXAMINATION AND INITIAL INVESTIGATIONS

Physical Examination

Blood Pressure -130/90 mmHg

Heart Rate -78/min

Height -174 cm

Weight -78kg

BMI – 27

Laboratory Evaluation

Fasting Lipid Profile

Total Cholesterol Level -239 mg/dL

Triglycerides -220 mg/dL

Very Low-Density Lipoprotein (VLDL)-44 mg/dL

Low Density Lipoprotein (LDL) -155 mg/dL

High Density Lipoprotein (HDL)-40mg/dL

Blood Sugar (F) -96 mg/dL

Blood Sugar (pp)-117 mg/dL

CLINICAL FEATURES

Patient complaints of weight gain, pain in legs more often during night time, and lethargic for 3 months. Before 3 months he was asymptomatic, after that he gradually developed above symptoms and received modern medicine of statin group prescribed by modern physician since last two months, but no significant improvement was observed by the patient. With same complaints, he attended the OPD.

PAST HISTORY

Patient had no history of hypertension, Diabetes mellitus and smoking.

AYURVEDIC MANAGEMENT

The case has been thoroughly examined and given following Ayurvedic management for keeping in views that: *Shadangapaniya* is helpful in the digestion of *Ama*, absorption of *Sleshma (kapha)* and pacifies the thirst *(Trishna)*. Also, dietary changes help a lot in the management of Dyslipidaemia".[13]

1. Specific *Pathya*

The patient was advised to drink only *Shadangapaniya* whole day for one and half month as per his thirst. It contains 6 drugs in it: *Musta* (cyperus scariosus), *Parpatak* (fumaria officinalis), *Usheer* (chrysopogon zizanioides), *Chandan* (pterocarpus santalinus), *Udichi* (pavonia odorata), *Nagar* (zingiber officinalis). These contents have the following characteristic.[14]:-

s.no.	Drug name	properties
1.	*Musta*	*Kapha-pitta hara, dipana, pachana, grahi, lekhana*
2.	*Parpatak*	*Jwara, trishna, bhrama, mada, raktapitta*
3.	*Usheer*	*Jwara, Daha, Trishna, Raktapitta, Kushtha Nashak*
4.	*Rakt Chandan*	*Raktpitta, bhrama, Jwara, daha nashan*
5.	*Sugandhbala*	*Jwara, trishna, bhrama,Daha nashak*
6.	*Nagar (Shunthi)*	*Shoola, Adhman, kasa, shwas hrdroga, jwar, agnimandya nashan*

All the contents have properties of *Deepana*, *Ama pachana*, and *Medo-vishoshana* that helps in *Kapha-medo vishoshana* and hence useful in dyslipidaemia.

2. General *Pathya Ahara-Vihara*/ lifestyle modification

- Patient was suggested to take Chapatti made by barley (*Yava*).[15]
- Use of ginger (*Ardrak*)[16] and garlic (*Lashuna*)[17] in diet
- Use of *Mudga*[18] instead of *Chanak*
- 3km morning walk daily and a routine walk of 10 minutes (*Chankramana*) after having food.[19]

3. *Apathya* /things to be avoided

patient was strictly suggested to avoid the following measures.

- oily and fried items, sweets and high sugar containing items
- meat and high protein diet.
- during daytime sleeping.

OBSERVATIONS AND RESULTS

Patient took all the suggested *Pathya*s (specially drinking of *Shadangapaniya* whole day) and also followed lifestyle modification regularly for one and half month. 3 Follow-ups were done at every 15-day interval. At every follow-up clinical Symptoms and signs were evaluated. Lipid profile and other examination were performed after one and half month.

Assessment of lipid profile

Parameters	Before treatment	After treatment
Total cholesterol	239 mg/dl	181 mg/dl
HDL cholesterol	40 mg/dl	45 mg/dl
LDL cholesterol	155 mg/dl	114 mg/dl
Total lipid	898 mg/100ml	671 mg/100 ml
Triglyceride	220 mg/dl	109 mg/dl
Cholesterol HDL ratio	5.97 mg/dl	4.02 mg/dl
LDL/HDL ratio	3.88 mg/dl	2.54 mg/dl
VLDL	44 mg/dl	21 mg/dl

Assessment of clinical sign and symptoms: -

Symptoms	Before treatment	After treatment
Weight	78 kg	70 kg
Excessive thirst	Present	Relieved 80%
Shortness of breath	Present	Relieved 70%
Lethargy	Present	Relieved 75%
Pain in legs	Present	Significant reduction 70%

DISCUSSION

Dyslipidaemia is a lifestyle disorder caused by the impairment of *Medodhatvagni*. *Ama, Sleshmala Ahara-vihara, Avyayama*[20] (lack of physical activity) have main role in the basic matrix of *Medovaha-srotodushti* along with vitiation of *Khapa.*[21] *Shadangapaniya* as main component of treatment was used here in the management of *medo-dushti*, because of its *Dipana* (Carminative), *Pachana* (digestive), *Daha prashman, Jwarhara, Agnimandyahara* and *Laghu* (light) properties. It has property of pacifying *Pitta* and *kapha* and excess *Medo-dhatu.*[22] *Khapa dosha* causes unbalancing of lipid components in various manners and obstruct the body channels *(Medovaha srotasa).* In allopathy, the management of dyslipidaemia is unsatisfactory because of the Prolonged use and side effects of allopathy drugs. Regarding this concern (*Medo-dushti* or dyslipidaemia) *Shadangapaniya* along with *Pathya Ahara-Vihara* are very useful. In the management of dyslipidaemia (*Medo-dushti*) *Kapha-medohara* treatment in the form of *Shadangapaniya* as well as dietary measure for *Medo-vishoshana* should be considered on priority basis.[23] We suggested the patient to do

Vyayamm in the form of morning walk and a walk after having food (*Chankramana*). *Mudga* (Vigna radiata) and *Yava* (barley or Hordeum vulgare) was suggested as *Pathya. Yava* has property of *Sleshma vikaranut* (pacifier of *Kapha*)[24], it is pacifier of *medo, vata and trishna.*[25] It reduces the *kaphameda* because of *ruksha, kashaya, laghu and vilekhana guna* (scrapping of *Meda and kapha*).[26] *Mudga* is also *ruksha, kashaya, laghu,* and pacifier of *Pitta & Kapha.* It is most wholesome among all the pulses.[27] *Acharya Charak* has mentioned the both things in the group of "*Abhyas yogya Dravya".*[28]

CONCLUSION

At the end it is concluded that strict schedule of *Shadangapaniya* along with *Pathya-apathya* measures gives beneficial effect by normalizing the disturbed lipid profile, body weight, BMI. In this case, the clinical symptoms subsided, and any kind of side effects were not observed at the end of therapy. Thus, it can be said that the above selected measures specially *Shadangapaniya* is safe & cheapest and also it can be helpful to the patients of related symptoms like Obesity, Diabetes, Hypertension, CHD, etc. metabolic syndrome as these all are *Sleshma vikruti janya vyadhi* according to Ayurveda . This is the easiest natural methods for control and prevention of dyslipidaemia, and also helpful in reduction of the risk of CHD and other diseases, hence, it is helpful in the enhancement of life expectancy.

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