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AN INTEGRATIVE AYURVEDIC APPROACH TO HYPERLIPIDEMIA: A CASE REPORT OF POLYHERBAL AND LIFESTYLE-BASED MANAGEMENT

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ABSTRACT

Hyperlipidemia is a prevalent metabolic disorder and an important modifiable risk factor for cardiovascular disease. In Ayurveda, dyslipidemia can be conceptually correlated with *Medoroga*, wherein impaired metabolism and vitiation of *Meda Dhatu*, particularly in association with aggravated *Kapha Dosha*, contribute to the disease process. A 52-year-old male patient presented with elevated serum lipid levels and exertional breathlessness, particularly during stair climbing. Baseline investigations revealed total cholesterol of 280 mg/dL, LDL cholesterol of 195 mg/dL, triglycerides of 200 mg/dL, HDL cholesterol of 35 mg/dL, and VLDL cholesterol of 50 mg/dL. The patient was assessed according to *Ayurvedic* principles and managed with *Arjuna Ghanavati*, *Lasunadi Vati*, *Triphala Guggulu*, and a decoction containing *Vrikshamla*, *Musta*, *Daruharidra*, *Triphala*, *Saptaranga*, *Gokshura*, and *Trikatu*, along with individualized dietary and lifestyle modifications for three months. Following the intervention, improvement was observed in the lipid profile, with total cholesterol decreasing to 217 mg/dL, LDL cholesterol to 139 mg/dL, triglycerides to 158 mg/dL, and HDL cholesterol increasing to 43 mg/dL. The patient also reported improvement in exertional breathlessness, with no adverse effects documented during the treatment period. This case highlights the potential role of an *Ayurvedic* treatment approach targeting *Kapha-*

Meda Dushti, together with appropriate dietary and lifestyle measures, in the management of hyperlipidemia. However, findings from a single case cannot establish efficacy, and larger controlled clinical studies are needed.

KEYWORDS: Dyslipidaemia; *Medoroga*; *Medovṛddhi*; *Kapha-Meda Dushti*; *Arjuna Ghanavati*; *Triphala Guggulu*; *Vrikshamla*.

INTRODUCTION

Hyperlipidemia is a significant metabolic abnormality characterized by increased levels of circulating cholesterol and triglycerides and is recognized as an important modifiable risk factor for atherosclerosis and cardiovascular disease.[1] Globally, approximately 39% of adults are affected by elevated cholesterol levels, which contributed to an estimated 98.6 million disability-adjusted life years and 4.4 million deaths in 2019. Although mortality associated with raised cholesterol has declined in several high-income Western countries, a substantial increase has been observed in Southeast and East Asia, with the burden of disease increasingly shifting toward middle-income countries, particularly across Asian regions and parts of Latin America.[2] In India, dyslipidemia is highly prevalent and commonly presents with an atherogenic lipid profile, including reduced HDL cholesterol and elevated LDL, non-HDL cholesterol, total cholesterol, and triglyceride levels. These lipid abnormalities may occur at a relatively younger age and are frequently associated with other metabolic abnormalities, including metabolic syndrome, thereby contributing to the increasing cardiovascular disease burden in the Indian population.[3]

Conventional management of hyperlipidemia predominantly involves pharmacological therapy, including statins, fibrates, and cholesterol absorption inhibitors, which have established efficacy in improving lipid profiles and reducing cardiovascular risk.[4] Along with pharmacological management, dietary modification, regular physical activity, and other lifestyle measures remain important components of cardiovascular risk reduction.

From an *Ayurvedic* perspective, abnormalities of lipid metabolism may be understood through the concepts of *Medoroga* and *Sthoulya*, in which *Kapha Dosha* aggravation and vitiation of *Meda Dhatu* play an important role.[6] Excessive consumption of *Guru* (heavy) and *Snigdha* (unctuous) dietary substances, lack of adequate physical activity, and impairment of digestive and metabolic processes (*Agnimandya*) are described as contributing factors. These disturbances may promote the formation of *Ama* and impair the normal

functioning of *Medovaha Srotas*, resulting in abnormal accumulation and metabolism of *Meda*. Accordingly, *Ayurvedic* management focuses on dietary and lifestyle modification along with *Deepana-Pachana*, *Medohara* and *Lekhana* therapeutic measures to restore metabolic balance.

Various experimental and clinical investigations have also documented the potential lipid-modulating and cardioprotective properties of medicinal plants and formulations used in Ayurveda, including *Guggulu*, *Amalaki* and *Arjuna*,[7,9] These observations provide a rationale for further exploration of traditional therapeutic approaches in disorders of lipid metabolism.

Considering the increasing prevalence of dyslipidemia and the growing interest in integrative approaches to metabolic disorders, the present case report describes the clinical management of a 52-year-old male with hyperlipidemia using *Ayurvedic* oral medications along with individualized dietary and lifestyle modifications over a period of three months. The case particularly focuses on changes in serum lipid parameters and the patient's clinical symptoms following the intervention.

CASE REPORT

1. De-identified patient-specific information

A 52-year-old male of average build, measuring 168 cm in height and weighing 76 kg, with a body mass index (BMI) of 26.9 kg/m², presented to an Ayurvedic outpatient clinic in India with complaints of breathlessness on exertion, particularly during stair climbing.

2. Primary concerns and symptoms of the patient

The patient experienced gradually developing exertional dyspnea, which was more noticeable during activities requiring increased physical effort, such as climbing stairs. He had previously been found to have elevated lipid levels during a routine health assessment and subsequently sought Ayurvedic care for metabolic regulation and improvement of his symptoms.

3. Medical, family, and psychosocial history including relevant genetic information

The patient had no documented history of diabetes mellitus, hypertension, coronary artery disease, renal or hepatic disorders, or endocrine abnormalities. He was not receiving any

regular medications at the time of presentation and reported no history of tobacco or alcohol consumption.

His lifestyle was predominantly sedentary, with frequent intake of fried and oily foods. There was no reported family history of premature cardiovascular disease or dyslipidemia. No relevant hereditary or genetic disorder was identified from the available family and medical history.

4. Relevant past interventions and their outcomes

Before seeking Ayurvedic treatment, the patient had not undergone any pharmacological intervention for dyslipidemia. During previous routine health evaluations, he had been advised to modify his dietary habits; however, no lipid-lowering medication had been initiated.

5. Clinical findings

The patient was conscious, oriented, and hemodynamically stable at the time of examination. His blood pressure was recorded as 130/80 mmHg, with a pulse rate of 88/min. Cardiovascular, respiratory, and abdominal system examinations did not reveal any significant abnormality. The patient experienced breathlessness exclusively during physical exertion, with no dyspnea reported at rest.

6. Diagnostic assessment

Baseline fasting biochemical investigations conducted on 19 March 2025 revealed an abnormal lipid profile, comprising total cholesterol of 280 mg/dL, triglycerides of 200 mg/dL, LDL cholesterol of 195 mg/dL, HDL cholesterol of 35 mg/dL, and VLDL of 50 mg/dL. These findings were suggestive of mild primary hyperlipidemia. Fasting blood glucose, liver function tests, renal function tests, and thyroid function tests were also performed to rule out secondary metabolic causes and establish baseline safety parameters; all were within normal limits.

7. Diagnostic challenges

The diagnostic evaluation did not present any significant challenges. In view of the absence of an identifiable systemic disorder or secondary metabolic abnormality, the dyslipidemia was considered primary and potentially associated with lifestyle-related factors. Although exertional breathlessness was reported, the symptom was non-specific, and a direct causal

association between the respiratory complaint and the lipid abnormality could not be established.

8. *Ayurvedic* diagnosis

From the *Ayurvedic* perspective, the clinical presentation was interpreted as *Medoroga* associated with *Kapha-Meda Dushti*. The probable contributing factors included consumption of *Guru* and *Snigdha* foods along with inadequate physical activity, which were considered to contribute to *Agnimandya*, subsequent *Ama* formation, and impairment of the normal functioning of *Medovaha Srotas*. The patient's *Prakriti* was assessed as predominantly *Kapha-Pitta*.

9. *Ayurvedic* therapeutic intervention

The therapeutic approach was planned with the objectives of improving metabolic activity through *Deepana-Pachana*, reducing excessive *Meda* through *Lekhana* and *Medohara* measures, supporting cardiovascular function through *Hridya* therapy, and promoting overall metabolic balance. The patient was prescribed *Arjuna Ghanavati*, *Lasunadi Vati*, *Triphala Guggulu*, and a polyherbal decoction containing *Vrikshamla*, *Musta*, *Daruharidra*, *Triphala*, *Saptaranga*, *Gokshura*, and *Trikatu*. Individualized dietary and lifestyle modifications were advised concurrently. The treatment was continued and monitored over a three-month period, from 20 March 2025 to 18 June 2025.

S. No.	Formulation / Drug	Dose	Anupana / Timing	Duration
1	*Arjuna Ghanavati*	250 mg	Twice daily after food with lukewarm water	3 months
2	*Lasunadi Vati*	2 tablets twice daily	After food with lukewarm water	3 months
3	*Triphala Guggulu*	250 mg	Twice daily after food with lukewarm water	3 months
4	*Vrikshamla*, *Musta*, *Daruharidra*, *Triphala*, *Saptaranga*, *Gokshura* and *Trikatu* decoction	2 g of each drug	Decoction, Twice daily after food	3 months

The above regimen was administered as an initial treatment schedule and the patient was followed over the three-month observation period. Dietary and lifestyle modifications were continued throughout the treatment period.

Dietary advice included avoidance of excessive fried and oily foods and adherence to a *Kapha-Pittahara* dietary pattern. Approximately 30 minutes of brisk walking daily and maintenance of a regular sleep schedule were also advised.

Follow-up and Outcomes

Following initiation of the *Ayurvedic* treatment, the patient was followed at regular intervals to assess clinical response, treatment adherence, and tolerability. The patient demonstrated satisfactory compliance with the prescribed medications, dietary modifications, and physical activity. No adverse effects were reported during the treatment period.

At baseline, the patient's fasting lipid profile showed total cholesterol of 280 mg/dL, LDL cholesterol of 195 mg/dL, triglycerides of 200 mg/dL, HDL cholesterol of 35 mg/dL, and VLDL cholesterol of 50 mg/dL. Following three months of intervention, total cholesterol decreased to 217 mg/dL, LDL cholesterol to 139 mg/dL, and triglycerides to 158 mg/dL, while HDL cholesterol increased to 43 mg/dL. The corresponding reductions in total cholesterol, LDL cholesterol, and triglycerides were approximately 22.5%, 28.7%, and 21.0%, respectively, while HDL cholesterol increased by approximately 22.9%.

Lipid parameter	Baseline	After 3 months	Percentage change
Total cholesterol (mg/dL)	280	217	↓ 22.5%
LDL-C (mg/dL)	195	139	↓ 28.7%
Triglycerides (mg/dL)	200	158	↓ 21.0%
HDL-C (mg/dL)	35	43	↑ 22.9%
VLDL-C (mg/dL)	50	31.6*	↓ 36.8%

VLDL-C at follow-up is estimated from triglycerides using the conventional TG/5 calculation.

The patient also reported improvement in exertional breathlessness, particularly during stair climbing, approximately four weeks after initiation of treatment. Exercise tolerance was subjectively improved, and no new symptoms or adverse events were reported during the three-month follow-up period.

DISCUSSION

Hyperlipidemia is a common metabolic abnormality associated with an increased risk of cardiovascular disease. In the present case, the patient demonstrated elevated total cholesterol, LDL cholesterol, triglycerides and VLDL cholesterol, together with reduced HDL

cholesterol at baseline. Following three months of *Ayurvedic* intervention combined with dietary and lifestyle modification, improvement was observed across the assessed lipid parameters. Total cholesterol decreased by 22.5%, LDL cholesterol by 28.7%, and triglycerides by 21.0%, while HDL cholesterol increased by 22.9%. The patient also reported improvement in exertional breathlessness during the treatment period.

From an *Ayurvedic* perspective, the presentation was interpreted as *Medoroga* associated with *Kapha-Meda Dushti*. Excessive intake of *Guru* and *Snigdha* foods, together with inadequate physical activity, may contribute to *Agnimandya* and subsequent disturbance of *Meda Dhatu* metabolism. The resulting *Kapha* and *Meda* accumulation may contribute to *Medovaha Srotodushti*. Therefore, the therapeutic approach was directed towards *Deepana-Pachana*, *Lekhana*, *Medohara* and *Hridya* actions.

Arjuna Ghanavati was incorporated primarily for its *Hridya* action and its relevance to cardiovascular health. *Terminalia arjuna* contains triterpenoids, flavonoids, tannins and other bioactive constituents and has been investigated for antioxidant, cardioprotective and lipid-modulating effect.[9] Its use in the present case was therefore intended to provide cardiovascular support in the setting of dyslipidemia.

Lasunadi Vati was selected for its *Deepana-Pachana* and *Kapha-Medohara* properties. Garlic-based preparations have traditionally been used to support digestion and metabolic function, while contemporary research has investigated garlic-derived constituents for their potential effects on lipid metabolism and oxidative stress.

Triphala Guggulu contributed *Lekhana*, *Medohara*, *Deepana-Pachana* and *Srotoshodhana* actions. *Guggulu* has been investigated for its potential influence on lipid metabolism, while *Triphala* provides antioxidant and metabolic support.[7] These properties may complement the dietary and lifestyle measures used in the present case.

The decoction containing *Vrikshamla*, *Musta*, *Daruharidra*, *Triphala*, *Saptaranga*, *Gokshura* and *Trikatu* was intended to provide a broader metabolic effect. *Daruharidra* possesses *Tikta-Kashaya Rasa* and *Kaphapittahara* properties, while berberine, one of its important constituents, has been investigated for lipid- and glucose-modulating effects. *Musta* and *Trikatu* contribute predominantly *Deepana-Pachana* activity, which may support correction of *Agnimandya*. *Vrikshamla* has traditionally been associated with management of excessive

Meda and weight-related metabolic disturbances. *Triphala* provides antioxidant support, while *Gokshura* contributes supportive metabolic and systemic actions.

The probable mode of action of the intervention can therefore be understood through the principle of *Samprapti Vighatana*. *Deepana-Pachana* provided by *Lasunadi Vati*, *Trikatu*, *Musta* and *Daruharidra* may support correction of *Agnimandya* and reduction of *Ama*. *Triphala Guggulu* and *Vrikshamla* may contribute to *Lekhana* and *Medohara* effects, while *Amalaki* present within *Triphala* provides antioxidant and metabolic support. *Arjuna Ghanavati* contributes primarily through its *Hridya* and cardioprotective role. Collectively, these actions may support correction of *Kapha-Meda Dushti* and improvement in lipid metabolism.

The observed improvement in lipid parameters may also have been influenced by the concurrent dietary and lifestyle interventions. The patient was advised to avoid excessive fried and oily foods, follow a *Kapha-Pittahara* dietary pattern, perform approximately 30 minutes of brisk walking daily, and maintain regular sleep. These measures are independently relevant to lipid and metabolic health and therefore represent an important component of the overall intervention.

The improvement in exertional breathlessness was an additional clinical observation. However, because breathlessness is a non-specific symptom and no cardiovascular or pulmonary functional assessment was performed, a direct causal relationship between the lipid improvement and resolution of breathlessness cannot be established.

The present case has several limitations. It represents a single-patient observation without a comparator group, and therefore causality cannot be established. The intervention consisted of multiple Ayurvedic formulations together with dietary and lifestyle modifications, making it difficult to determine the contribution of any individual component. The follow-up period was also limited to three months. Nevertheless, the observed changes provide a preliminary clinical observation that may support further investigation of standardized *Ayurvedic* interventions for dyslipidemia.

Future studies involving larger sample sizes, appropriate control groups, standardized formulations, objective assessment of dietary and physical activity adherence, and longer

follow-up are required to determine the reproducibility and clinical significance of these findings.

CONCLUSION

In the present case of hyperlipidemia, a three-month *Ayurvedic* intervention comprising *Arjuna Ghanavati*, *Lasunadi Vati*, *Triphala Guggulu* and a polyherbal decoction, along with dietary and lifestyle modifications, was associated with improvement in the lipid profile and subjective improvement in exertional breathlessness. Reductions were observed in total cholesterol, LDL cholesterol and triglycerides, while HDL cholesterol increased. The intervention was well tolerated, with no adverse effects reported during the treatment period. From an *Ayurvedic* perspective, the therapeutic response may be understood through *Deepana-Pachana*, *Lekhana*, *Medohara* and *Hridya* actions directed towards *Kapha-Meda Dushti* and impaired metabolic function. However, as this is a single case without a comparator, the findings cannot establish efficacy or causality. Larger controlled clinical studies with standardized interventions and longer follow-up are required to substantiate these observations.

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