



Integrative Ayurvedic Management of Hyperlipidemia (Medoroga) Using Lipomap and Terminalia Arjuna: A Case Report

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Hyperlipidemia is a common metabolic disorder and a major risk factor for cardiovascular disease. In Ayurvedic literature, dyslipidemia is conceptually correlated with Medoroga, a condition arising from Kapha Dosha aggravation and derangement of Meda Dhatu. Such metabolic disturbances are generally managed using pharmacological agents, though long-term therapy may be associated with adverse effects and patient preference for non-pharmacological approaches has increased interest in integrative care. We present here a case of a 52-year-old male with hyperlipidemia who was managed using Ayurvedic oral medications and lifestyle advice for three months. At baseline, the patient had exertional breathlessness and elevated serum lipid levels (total cholesterol 280 mg/dL, LDL 195 mg/dL, triglycerides 200 mg/dL, and HDL 35 mg/dL). Following therapy, reductions were observed in total cholesterol (217 mg/dL), LDL (139 mg/dL), and triglycerides (158 mg/dL), along with an increase in HDL (43 mg/dL), and the patient reported improvement in exertional symptoms without any adverse effects. This single case illustrates improvement in lipid parameters following an Ayurvedic intervention targeting Kapha-Meda imbalance and highlights the need for larger, controlled studies to generate more robust evidence.

Keywords: Hyperlipidemia; Medoroga; Ayurveda; Case report; Terminalia Arjuna

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Introduction

Hyperlipidemia, characterized by elevated serum cholesterol and triglycerides, is a major modifiable risk factor for atherosclerosis and cardiovascular disease worldwide.[1] Globally, raised cholesterol affects about 39% of adults and was responsible for an estimated 98.6 million disability-adjusted life years and 4.4 million deaths in 2019. While mortality has declined in high-income Western countries, it has more than doubled in Southeast Asia and tripled in East Asia, shifting disease burden toward middle-income regions of Asia and parts of Latin America.[2] Indians exhibit a high prevalence of dyslipidemia, characterized by low HDL cholesterol in a substantial proportion of adults, elevated LDL & non-HDL cholesterol in nearly half population, and raised total cholesterol and triglycerides in more than one-third. This atherogenic lipid pattern often manifests at a younger age and is frequently accompanied by metabolic syndrome.[3]

Standard management of hyperlipidemia relies primarily on pharmacological agents such as statins, fibrates, and cholesterol absorption inhibitors, which are effective in reducing cardiovascular risk.[4] However, long-term therapy may be associated with adverse effects including myopathy and hepatic enzyme elevation necessitating regular monitoring and occasionally limiting patient adherence.[5] These considerations, together with growing public interest in lifestyle-based and complementary approaches, have led to increasing exploration of integrative strategies for lipid regulation.

In *Ayurvedic* literature, disorders of lipid metabolism are described under the concepts of *Medoroga* or *Sthoulya*, attributed primarily to *Kapha Dosha* aggravation and derangement of *Meda Dhatu*. [6] Classical texts associate excessive intake of heavy & unctuous foods, physical inactivity, and impaired digestive and metabolic function (*Agnimandya*) with accumulation of *Ama* and obstruction of *Medovaha srotas*, ultimately leading to abnormal fat metabolism. Therapeutic approaches therefore emphasize dietary regulation, physical activity, & administration of *Medohara* and *Lekhana* formulations aimed at correcting underlying metabolic dysfunction.

Several experimental and clinical studies have reported hypolipidemic and cardioprotective effects of *Ayurvedic* botanicals such as *Commiphora mukul* (*Guggulu*),

Embolica officinalis (*Amalaki*), and *Terminalia arjuna*, suggesting potential roles in lipid modulation and cardiovascular health.[7-9] Nevertheless, well-documented clinical case reports remain valuable for illustrating real-world application of such interventions and for generating hypotheses for future controlled trials.

In light of the increasing burden of dyslipidemia and interest in integrative care models, the present case report describes the clinical course of a middle-aged male with mild hyperlipidemia managed using *Ayurvedic* oral medications and lifestyle modification over a three-month period, with emphasis on biochemical outcomes and symptom changes.

Case Report

1. De-identified patient-specific information

A 52-year-old male of average build (height 168 cm, weight 76 kg; body mass index 26.9 kg/m²) presented to an *Ayurvedic* outpatient clinic in India with exertional breathlessness, particularly while climbing stairs.

2. Primary concerns and symptoms of the patient:

The patient reported exertional dyspnea of gradual onset. He had previously been informed of elevated lipid levels during routine health screening and sought *Ayurvedic* consultation for metabolic regulation and symptom improvement.

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

The patient had no known history of diabetes mellitus, hypertension, coronary artery disease, renal or hepatic illness, or endocrine disorders. He was not taking any regular medications at the time of presentation and denied tobacco or alcohol use.

Lifestyle history revealed predominantly sedentary activity patterns and frequent consumption of fried and oily foods. There was no family history of premature cardiovascular disease or dyslipidemia.

4. Relevant past interventions and their outcomes

Prior to presentation, the patient had not received pharmacological lipid-lowering therapy and had only been advised dietary modification during earlier routine health evaluations.

5. Clinical findings

On examination, the patient was conscious, oriented, and hemodynamically stable. Blood pressure was 130/80 mmHg and pulse rate was 88/min. Systemic examination of the cardiovascular, respiratory, and abdominal systems revealed no abnormal findings. Breathlessness was present only on exertion and absent at rest.

6. Diagnostic assessment

Baseline fasting laboratory investigations performed on 19 March 2025 demonstrated dyslipidemia, with total cholesterol 280 mg/dL, triglycerides 200 mg/dL, LDL cholesterol 195 mg/dL, HDL cholesterol 35 mg/dL, and VLDL 50 mg/dL, consistent with mild primary hyperlipidemia. To exclude secondary causes and assess baseline safety, fasting blood glucose, liver function tests, renal function tests, and thyroid function tests were obtained and were within normal limits.

7. Diagnostic challenges

No major diagnostic challenges were encountered. Given the absence of systemic illness or secondary metabolic causes, the dyslipidemia was considered primary and lifestyle-associated. The exertional symptoms were non-specific, and no direct causal relationship with lipid abnormalities could be established.

8. Ayurvedic diagnosis

From an *Ayurvedic* perspective, the condition was diagnosed as *Medoroga* with *Kapha-Meda Dushti*. Contributory factors included intake of heavy and oily foods and physical inactivity, resulting in *Agnimandya*, *Ama* accumulation, and obstruction of *Medovaha Srotas*. The patient's *Prakriti* was assessed as *Kapha-Pitta* predominant.

9. Ayurvedic therapeutic intervention

Based on the above assessment, therapeutic objectives were to enhance metabolic function (*Deepana-Pachana*), reduce excess *Meda* (*Lekhana and Medohara*), and support systemic rejuvenation (*Rasayana*). Oral medications were prescribed for three months (20 March 2025 to 18 June 2025), as summarized in Table 1.

No concurrent allopathic lipid-lowering therapy was initiated during this period, as the patient expressed preference for non-pharmacological management and declined initiation of statin therapy.

In addition, the patient was advised a *Kapha-Pittahara* diet with restriction of fried and oily foods, daily brisk walking for approximately 30 minutes, and maintenance of regular sleep habits.

Table 1: Details of the Ayurvedic therapeutic intervention in a patient with hyperlipidemia.

Date	Clinical Event	Intervention	Outcome
19 March 2025	Initial consultation; baseline lipid profile obtained; Ayurvedic diagnosis of Medoroga (Kapha-Meda Dushti) established	No therapeutic intervention initiated	Baseline biochemical and clinical status recorded
20 March 2025	Initiation of treatment	Lipomap tablets (500 mg): two tablets twice daily before meals with lukewarm water; Terminalia arjuna tablets: one tablet twice daily after meals; dietary advice (Kapha-Pittahara diet); moderate physical activity (~30 min/day)	Treatment commenced
18 April 2025	Interim clinical review	Continued Ayurvedic regimen and lifestyle measures without modification	Subjective improvement in exertional symptoms; good adherence; no adverse events reported
21 May 2025	Ongoing review	Continued therapy unchanged	Further symptomatic improvement; stable vital parameters; no new complaints
18 June 2025	Completion of planned treatment course; repeat lipid profile performed	Completion of three-month intervention	Reduction in lipid parameters was observed, with decreases in total cholesterol (217 mg/dL), LDL cholesterol (139 mg/dL), triglycerides (158 mg/dL), and VLDL (43 mg/dL), along with an increase in HDL cholesterol (43 mg/dL) after three months of therapy compared with baseline.
26 August 2025	Follow-up visit after completion of therapy	No ongoing Ayurvedic or pharmacological lipid-lowering medication reported	Maintained symptomatic improvement; no recurrence of exertional breathlessness; general well-being preserved

Follow-up and Outcomes

After initiation of *Ayurvedic* intervention, the patient was reviewed at monthly intervals for assessment of clinical symptoms, adherence to therapy, and tolerability. The patient reported good compliance with prescribed medications, dietary advice, and physical activity recommendations. No adverse or unanticipated events were observed during the treatment period, and vital parameters remained stable at each visit. At completion of the three-month intervention, repeat fasting lipid profile demonstrated improvement in all measured parameters, with decreases in total cholesterol, LDL cholesterol, triglycerides, and VLDL, along with an increase in HDL cholesterol, as detailed in Table 1. From the patient's perspective, improvement in exertional breathlessness was noted within four weeks of treatment initiation, accompanied by better stamina and general well-being. No new symptoms were reported during follow-up.

Following completion of therapy, the patient was advised to continue lifestyle measures including brisk walking for approximately 30 minutes daily and maintenance of regular sleep habits. Periodic clinical supervision was recommended, along with adherence to a *Kapha-Pittahara* diet and repeat lipid profile testing every 3-6 months to monitor longer-term trends and guide further management.

Discussion

Hyperlipidemia is a highly prevalent metabolic disorder associated with increased cardiovascular morbidity, and interest in integrative approaches for lipid regulation has grown in patients seeking non-pharmacological strategies. In the present case, three months of *Ayurvedic* intervention combined with dietary modification and physical activity were associated with reductions in total cholesterol, LDL cholesterol, triglycerides, and VLDL, along with an increase in HDL cholesterol. Although improvement in exertional symptoms was reported, this observation should be interpreted cautiously, as symptom change cannot be directly attributed to biochemical improvement in a single-patient setting.

From a biomedical standpoint, reductions in atherogenic lipid fractions are generally considered favorable for cardiovascular risk modification; however, this case did not assess long-term cardiovascular outcomes or surrogate vascular markers.

The short duration of follow-up and absence of imaging or functional cardiovascular investigations limit the ability to draw conclusions beyond biochemical change.

From an *Ayurvedic* perspective, the observed changes may be interpreted as reflecting correction of *Kapha-Meda Dushti* through restoration of digestive and metabolic function (*Agni*), elimination of *Ama*, and normalization of *Meda Dhatu* metabolism. Classical *Ayurvedic* formulations categorized as *Medohara* and *Lekhana* are traditionally employed to address such metabolic derangements, and experimental as well as clinical literature has suggested lipid-modulating effects of several constituent botanicals.[6]

Commiphora mukul (*Guggulu*), a key component of the polyherbal formulation used in this case, has been reported to influence hepatic lipid metabolism and bile acid synthesis, potentially contributing to reductions in serum cholesterol.[7] *Embolia officinalis* (*Amalaki*) has demonstrated antioxidant and hypolipidemic effects in clinical studies, including reductions in LDL cholesterol and triglycerides.[8] *Terminalia chebula* and *Terminalia bellirica* have been shown experimentally to exert lipid-lowering and antioxidant actions, while *Piper longum* may enhance digestive and metabolic efficiency, thereby aligning with the *Ayurvedic* concepts of *Deepana-Pachana* and *Ama* reduction.[10,11] *Terminalia arjuna* has been extensively studied for cardioprotective properties, including antioxidant activity, improvement in endothelial function, and favorable effects on lipid handling, which may complement metabolic regulation in dyslipidemia.[9] In addition, *Nyctanthes arbortristis* (*Parijat*) has demonstrated anti-inflammatory and antioxidant activity, while *Rubia cordifolia* (*Manjeeth*) has shown lipid-modulating and hepatoprotective effects in experimental studies, suggesting potential supportive roles in metabolic regulation within the polyherbal formulation.[12,13] The concurrent use of these agents therefore represents a multi-component intervention acting on digestion, hepatic lipid metabolism, oxidative stress, and cardiovascular physiology. Despite these biologically plausible mechanisms, interpretation of the present findings must remain conservative. Dietary restriction of fried and oily foods, increased physical activity, and regression to the mean may all have contributed to lipid improvement.

The absence of a comparator, lack of blinding, and reliance on a single case limit generalizability. Moreover, lipid measurements were obtained at baseline and three months only, precluding assessment of longer-term stability of biochemical changes.

Nevertheless, carefully documented case reports remain valuable in integrative medicine research for generating hypotheses and illustrating real-world clinical application, particularly when supported by mechanistic plausibility and prior experimental evidence. Larger prospective studies with standardized formulations, controlled dietary interventions, and longer follow-up will be required to determine the reproducibility and clinical relevance of such approaches in dyslipidemia management.

Conclusion

In this patient with hyperlipidemia, an *Ayurvedic* regimen comprising *Lipomap* and *Terminalia arjuna* along with dietary and lifestyle modification was associated with improvement in lipid parameters and exertional symptoms over three months without reported adverse effects. Larger controlled studies with standardized protocols and longer follow-up are required to clarify the role of such integrative approaches in dyslipidemia management.

Patient's perspective

Before starting treatment, I was concerned about my cholesterol levels and often felt breathless while climbing stairs. I chose Ayurvedic treatment along with changes in diet and daily walking. Over the next few months, I noticed improvement in my stamina and felt less breathless during routine activities. I did not experience any side effects from the medicines and found the dietary and lifestyle advice easy to follow. At my last follow-up visit in 26 August 2025, I continued to feel well and was not taking any lipid-lowering medicines.

Informed consent: Informed consent has been obtained from the patient for the publication of this case report.

Declaration of generative AI in scientific writing: We declare that generative AI tools have not been used in preparation or analysis of this research paper.

Data statement: Data related to treatment is available and can be shared upon request.

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