

Management of Dyslipidemia through Ayurvedic Formulations and Lifestyle Modifications: A Case Study

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ABSTRACT:

Dyslipidemia is a metabolic disorder characterized by abnormal lipid levels, which may be associated with both physical and psychological symptoms. In Ayurvedic terms, it is correlated with Medoroga, resulting from impaired Agni and disturbed Meda Dhatu metabolism. A 40-year-old male with a known case of dyslipidemia visited Vedanta AyurVaid Clinic, Panipat, on 03/07/2023 with complaints of generalized weakness (Daurbalya), anxiety (Manasika Udvega), and abdominal tenderness (Udara Shoola), suggesting systemic metabolic imbalance along with gastrointestinal and psychological involvement. The patient was managed with Ayurvedic interventions along with dietary and lifestyle modifications aimed at improving digestion, reducing Kapha aggravation, and correcting lipid metabolism. A significant improvement was observed in clinical symptoms. Generalized weakness reduced from 4/10 to mild, anxiety symptoms decreased, and abdominal tenderness was relieved to mild or absent. Lipid profile showed marked improvement between April 9, 2023, and July 12, 2023: total cholesterol reduced from 258 mg/dL to 166.8 mg/dL, triglycerides from 260 mg/dL to 159.4 mg/dL, LDL from 162 mg/dL to 93.3 mg/dL, and VLDL from 52 mg/dL to 31.8 mg/dL. HDL decreased from 60.0 mg/dL to 41.7 mg/dL; however, the overall lipid profile showed a favorable metabolic trend. The findings suggest that Ayurvedic management combined with lifestyle modification may contribute to significant improvement in clinical symptoms and lipid profile in dyslipidemia, indicating better metabolic regulation and overall health status.

Keywords: Ayurveda, Dyslipidemia, Integrative Medicine, Shodhana, Shamana..

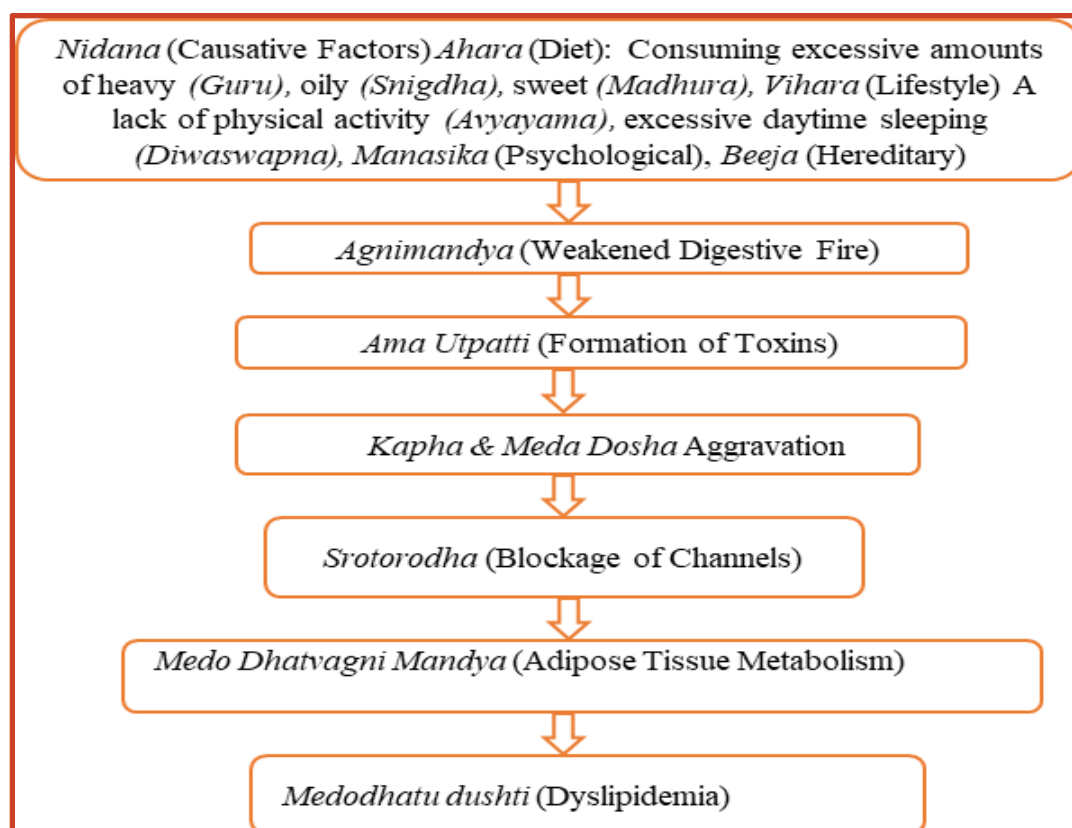
INTRODUCTION

Dyslipidemia is a metabolic disorder marked by elevated levels of total cholesterol, low-density lipoprotein cholesterol (LDL-C), triglycerides, and/or decreased high-density lipoprotein cholesterol (HDL-C).[1] It stands as a significant modifiable risk factor for atherosclerotic cardiovascular disease (ASCVD), contributing notably to endothelial dysfunction, chronic inflammation, and cardiovascular morbidity and mortality.[2] Globally, dyslipidemia affects a large portion of the adult population, with studies indicating a high prevalence among both genders; approximately 39% of adults worldwide have elevated total cholesterol, impacting millions of men and women in both developed and developing countries.[3] The burden is particularly rising in low- and middle-income nations due to sedentary lifestyles, unhealthy diets, obesity, and metabolic disorders. Conventional management includes statins, fibrates, ezetimibe, and lifestyle modification. Long-term therapy may lead to adverse effects, medication intolerance, and residual cardiovascular risk.[4] Ayurveda offers a holistic perspective on metabolic disorders through the concepts of Dosha, Agni, Dhatu, Ama, and Srotas. While classical texts do not explicitly mention dyslipidemia, it can be conceptually linked to Medoroga, Santarpanajanya Vyadhi, and Medovaha Srotodushti.[5] Ayurvedic management focuses on Nidana Parivarjana, Shodhana, Shamana, dietary regulation, and herbal therapies, many of which have shown lipid-modulating and cardioprotective potential in recent studies.[6]

Samprapti Ghataka of Medodhatu dushti^[7]

Samprapti Ghataka	
Dosha (Body humors)	Imbalance of <i>Kapha</i> and fat tissue <i>Vata</i> and <i>Pitta</i> may get involved in chronic cases
Dushya (Affected tissues)	<i>Rasa, Rakta, Meda, Lasika</i> (Plasma, Blood, Adipose tissue, Lymph)
Agni (Digestive/metabolic fire)	<i>Jatharagni Mandya, Medo Dhatu Agni Mandya</i> (Hypofunction of the digestive fire and fat tissue metabolism)
Srotas (Body channels)	<i>Rasavaha Srotas, Medovaha Srotas</i> (Channels transporting plasma and fat)
Srotodushti (Type of vitiation)	<i>Sanga</i> (blockage in the fat and plasma pathways)
Udbhava Sthana (Origin site)	<i>Amashaya</i> (Gastrointestinal tract, especially stomach)
Vyakti Sthana (Site of manifestation)	<i>Sarva Sharir Dhatus</i> , predominantly <i>Meda Dhatu</i> (All body tissues, mainly fat tissue)
Roga Marga (Pathological route/system)	<i>Madhyam Rogamarga</i> (Intermediate pathway of disease manifestation)
Nidana (Causative factors)	<i>Ahara: Guru, Madhura, Snigdha, Abhishyandi Ahara</i> <i>Vihara: Avyayama</i> Lack of exercise, <i>Divaswapna</i> (Daytime sleeping) <i>Manas</i> : Stress, anxiety <i>Beejadoshha</i> : Genetic predisposition
Samprapti (Pathogenesis of Medodhatu dushti)	Excessive <i>Kapha</i> and <i>Meda</i> vitiation leads to <i>Agnimandya</i> , causing improper digestion and metabolism of <i>Meda Dhatu</i> . This results in accumulation of <i>Meda</i> and blockage in <i>Medovaha</i> and <i>Rasavaha Srotas</i> , manifesting as dyslipidaemia.

Figure 1: Samprapti of Medodhatu dushti^[8]



CASE REPORT

A 40-year-old male with a known case of dyslipidemia visited Vedanta AyurVaid Clinic, Panipat, on 3/7/2023. The patient presented with generalized weakness (Daurbalya), anxiety (Chinta or Manasika Udvega), and abdominal tenderness (Udara Shoola). Vitals on the initial visit were as follow:

Blood Pressure: 140/80mmHg

Pulse Rate: 70/min

Weight: 77kg

Height :5'9"

Table 1: Ashtavidha Pariksha on the First Day Visit of the Patient

Parameters	Findings
Nadi (Pulse)	VataPittaj
Mala (Stool)	Avikrit (Normal)
Mutra (Urine)	Ishapetecta (Normal)
Jihwa (Tongue)	Saam (Coated)
Shabda (Speech)	Spashta (Clear)
Sparsha (Touch)	Anushma Sheeta (Moderate Temperature)
Drika (Eyesight)	Avikrit (Normal)
Akrti (Body Appearance)	Sthula (Obesity)

Therapeutic Approach

Ahara Krama: The dietary guidelines provided by the hospital shown in table 2^[9]:

Table 2: Pathya–Apathya (Dietary and Lifestyle Recommendations) for Dyslipidemia

Category	Pathya (Wholesome / Recommended)	Apathya (Unwholesome / Avoided)
Dietary Pattern (Ahara)	Light, freshly prepared, easily digestible food; balanced meals	Heavy, oily, junk, processed, and stale foods
Cereals & Grains	Barley (Yava), whole wheat, oats, millet	Refined flour products, excessive rice intake
Pulses & Proteins	Green gram (Mudga), horse gram in moderate quantity	Excess red meat, deep-fried protein foods
Fats & Oils	Small quantity of mustard oil, olive oil	Vanaspati, trans fats, excessive ghee/oil
Vegetables	Bitter gourd, bottle gourd, leafy greens	Starchy, deep-fried vegetables

Fruits	Apple, pomegranate, guava, citrus fruits	Overly sweet, canned, or syrup-based fruits
Dairy	Skim milk, buttermilk (Takra)	Full-fat milk, cream, cheese
Lifestyle (Vihara)	Regular exercise, yoga, walking, active routine	Sedentary lifestyle, day sleeping (Diwaswapna)
Daily Routine	Early rising, regulated meals, stress control practices	Irregular eating habits, late-night eating
Mental Health	Meditation, pranayama, stress management	Excess stress, anxiety, anger (Manasika Vega Dharana)
Habits	Adequate sleep (6–8 hrs), hydration	Overeating, emotional eating, overeating at night

II. Shaman Chikitsa

Based on the clinical evaluation, a detailed and patient-specific medication protocol was devised, as outlined in Table 3.

Table 3: Medications Administered During Treatment

Medicine	Ingredients	Dose	Time	Purpose
Guggulu (Yograj / Triphala Guggulu)	Commiphora mukul + Triphala	2 tablets	Twice daily	Lipid reduction, ama digestion
Arjuna Churna	Terminalia arjuna bark	3–5 g	Twice daily	Cardiac + cholesterol support
Punarnava Mandur	Punarnava + Iron compounds	1 tablet	Twice daily	Metabolism + fluid balance
Trikatu Churna	Ginger + Black pepper + Long pepper	1–2 g	Before meals	Improves digestion, burns fat
Triphala Churna	Haritaki + Bibhitaki + Amalaki	3–5 g	Night	Detox, bowel regulation

RESULTS

The comparison of symptoms before and after treatment shows marked clinical improvement in the patient's condition. Generalized weakness (Daurbalya), initially rated 4/10, reduced to a mild level, indicating improved strength and overall vitality. Anxiety (Manasika Udvega) significantly decreased, reflecting better psychological stability. Abdominal tenderness (Udara Shoola) also reduced to mild or absent, suggesting relief in gastrointestinal discomfort and improved digestive health. The lipid profile recorded on April 9, 2023, and July 12, 2023, demonstrated a clear positive trend, with total cholesterol decreasing from 258 mg/dL to 166.8 mg/dL, triglycerides from 260 mg/dL to 159.4 mg/dL, LDL from 162 mg/dL to 93.3 mg/dL, and VLDL from 52 mg/dL to 31.8 mg/dL. Although HDL showed a decline from 60.0 mg/dL to 41.7 mg/dL, the overall lipid profile indicates effective management of dyslipidemia with significant metabolic improvement shown as in below table 4.

Table 4: Clinical and Biochemical Changes Before and After Treatment

Parameter	Before Treatment	After Treatment	Outcome
Generalized weakness (Daurbalya) ^[10]	4/10 (Moderate)	Mild	Significant improvement
Anxiety (Manasika Udvega) ^[11]	Present	Reduced	Psychological stability improved
Abdominal tenderness (Udara Shoola) ^[12]	Moderate	Mild/Absent	Relief in GI discomfort
Total Cholesterol (mg/dL)	258	166.8	Marked reduction
Triglycerides (mg/dL)	260	159.4	Significant improvement
LDL (mg/dL)	162	93.3	Major reduction
VLDL (mg/dL)	52	31.8	Reduced
HDL (mg/dL)	60.0	41.7	Slight decrease

DISCUSSION

From an Ayurvedic perspective, dyslipidemia can be correlated with Medoroga, primarily caused by Kapha Dosha aggravation and impaired Meda Dhatu metabolism.^[13] The condition is mainly triggered by consumption of Guru, Snigdha, and Madhura foods, sedentary lifestyle, irregular dietary habits, and psychological stress, all of which weaken Agni and lead to Ama formation.^[14] This results in obstruction of Srotas and disturbed lipid metabolism. Pathogenesis involves impaired digestion, accumulation of Ama, and vitiation of Kapha and Vata Dosha, leading to abnormal lipid deposition and altered lipid transport in the body.^[15] Over time, this manifests as elevated cholesterol and triglyceride levels. Dietary and lifestyle modifications play a key role in management.^[17] A light, easily digestible, fiber-rich diet along with regular physical activity, yoga, stress reduction, and avoidance of unhealthy food habits helps restore metabolic balance and improve lipid profile.

Need for further Research

Despite the positive clinical outcomes observed in this case, further research is essential to validate the efficacy of Ayurvedic interventions in dyslipidemia management. To compare Ayurvedic treatments with traditional treatments, assess long-term safety, and create standardized treatment procedures, extensive, controlled clinical trials are required.^[18,19] Furthermore, investigating the molecular mechanisms of Ayurvedic herbs and formulations would promote integrative healthcare practices by shedding light on their lipid-lowering and metabolic-regulating properties.^[20]

CONCLUSION

The present case demonstrates that dyslipidemia, correlated with Medoroga in Ayurveda, can be effectively managed through a holistic approach involving Ayurvedic interventions along with appropriate dietary and lifestyle modifications. The patient showed significant clinical improvement, including reduction in generalized weakness, anxiety, and abdominal tenderness, indicating restoration of physical strength, psychological stability, and gastrointestinal function. Biochemical parameters also revealed a marked improvement, with a substantial reduction in total cholesterol, triglycerides, LDL, and VLDL levels over the treatment period, reflecting enhanced lipid metabolism and reduced metabolic imbalance. Although a slight decrease in HDL was observed, the overall lipid profile showed a favorable and clinically significant trend toward normal values. These

outcomes suggest improved Agni function, reduced Ama formation, and better regulation of Meda Dhatu metabolism. The case highlights the importance of addressing both lifestyle factors and metabolic dysfunction in dyslipidemia management. It further supports the potential role of Ayurveda-based approaches in improving lipid parameters and associated symptoms when followed consistently with proper dietary regulation, physical activity, and stress management. However, larger clinical studies are required to validate these findings and establish standardized treatment protocols for wider clinical application..

REFERENCES

1. Victor G, Shishani K, Vellone E, Froelicher ES. The global burden of cardiovascular disease in adults: a mapping review. *Journal of Cardiovascular Nursing*. 2023 Oct 1:10-97.
2. Morales-Villegas EC, Yarleque C, Almeida ML. Management of hypertension and dyslipidemia in Mexico: evidence, gaps, and approach. *Archivos de cardiología de México*. 2023 Mar;93(1):77-87.
3. World Health Organization. Action on salt and hypertension: reducing cardiovascular disease burden in the WHO European Region. World Health Organization. Regional Office for Europe; 2023 Apr 22.
4. Roth GA, Mensah GA, Johnson CO, Addolorato G, Ammirati E, Baddour LM, Barengo NC, Beaton AZ, Benjamin EJ, Benziger CP, Bonny A. Global burden of cardiovascular diseases and risk factors, 1990–2019: update from the GBD 2019 study. *Journal of the American college of cardiology*. 2020 Dec 22;76(25):2982-3021.
5. Mach, F., Baigent, C., Catapano, A.L., Koskinas, K.C., Casula, M., Badimon, L., Chapman, M.J., De Backer, G.G., Delgado, V., Ference, B.A. and Graham, I.M., 2020. 2019 ESC/EAS Guidelines for the management of dyslipidaemias: lipid modification to reduce cardiovascular risk: the Task Force for the management of dyslipidaemias of the European Society of Cardiology (ESC) and European Atherosclerosis Society (EAS). *European heart journal*, 41(1), pp.111-188.
6. Mishra A, Halder S, Vyas MK, Kumar K, Sharma N. Exploring the Implementation of the P5 Approach for Geriatric Health Care Services in India: A Comprehensive Analysis from the Ayurvedic Perspective. *Annals of Ayurvedic Medicine*. 2025 Apr 28;14(2):139-.
7. Morandi A, Tosto C, Roberti di Sarsina P, Dalla Libera D. Salutogenesis and Ayurveda: indications for public health management. *EPMA Journal*. 2011 Dec;2(4):459-65.
8. Peterson CT, Denniston K, Chopra D. Therapeutic uses of triphala in ayurvedic medicine. *The Journal of Alternative and Complementary Medicine: Paradigm, Practice, and Policy Advancing Integrative Health*. 2017 Aug;23(8):607-14.
9. Green BN, Johnson CD, Adams A. Writing narrative literature reviews for peer-reviewed journals: secrets of the trade. *Journal of chiropractic medicine*. 2006 Sep 1;5(3):101-17.
10. Snyder H. Literature review as a research methodology: An overview and guidelines. *Journal of business research*. 2019 Nov 1;104:333-9.
11. Sharma RK, Dah B. Charaka Samhita (Varanasi: Chowkhamba Sanskrit Series Office, 2014) vol. V, preface.
12. Sharma RK, Samhita DB, Volume-III C. Chowkhamba Sanskrit series office. Varanasi India1998. 2013.
13. Mishra A, Shrivastava V. Exploring the science of marma-an ancient healing technique-part 1: its mention in ancient Indian scriptures. submitted to the Dev Sanskriti Interdisciplinary International Journal (<http://dsii.dsvv.ac.in/>). 2020 Feb.
14. Saha S, Panwar O, Suresh P, Latha BP. Pharmaceutical study of Apamarga kshar to enhance the yield by modified method. *Journal of Ayurveda*. 2018 Jan;12(1).
15. Jain N, Bhatnagar V, Lahange SM. Conceptual Study. *Journal of Ayurveda*. 2017 Oct;11(4).
16. Ulbricht C, Basch E, Szapary P, Hammerness P, Axentsev S, Boon H, Kroll D, Garraway L, Vora M, Woods J, Natural Standard Research Collaboration. Guggul for hyperlipidemia: a review by the Natural Standard Research Collaboration. *Complementary therapies in medicine*. 2005 Dec 1;13(4):279-90.

17. Peterson CT, Denniston K, Chopra D. Therapeutic uses of triphala in ayurvedic medicine. *The Journal of Alternative and Complementary Medicine: Paradigm, Practice, and Policy Advancing Integrative Health*. 2017 Aug;23(8):607-14.
18. Dwivedi S. *Terminalia arjuna* Wight & Arn.—a useful drug for cardiovascular disorders. *Journal of ethnopharmacology*. 2007 Nov 1;114(2):114-29.
19. Banerjee SK, Maulik SK. Effect of garlic on cardiovascular disorders: a review. *Nutrition journal*. 2002 Dec;1(1):4.
20. Yattoo MI, Saxena A, Gopalakrishnan A, Alagawany M, Dhama K. Promising antidiabetic drugs, medicinal plants and herbs: An update. *International Journal of Pharmacology*. 2017 Jan 1;13(7):732-45.