

CLINICAL EVIDENCE OF AYURVEDIC MANAGEMENT IN HYPERLIPIDEMIA
WITH AMALAKI AND LASHUNA: A SINGLE CASE STUDYDr. Madhu S.^{1*}, Dr. Adarsh Kallimath² and Dr. Venu S.³^{1,3}Associate Professor, Dept. of Swasthavritta and Yoga, Rajeev Institute of Ayurvedic Medical Sciences & Research Center, Hassan.²Assistant professor, Dept. of Kayachikitsa, Sri Dharmasthala Manjunatheshwara college of Ayurveda and Hospital, Hassan.

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ABSTRACT

Hyperlipidemia, a metabolic disorder marked by elevated serum cholesterol, triglycerides, low-density lipoprotein (LDL), and very-low-density lipoprotein (VLDL), is a major risk factor for cardiovascular diseases (CVDs). While conventional pharmacological treatments, such as statins and fibrates, effectively reduce lipid levels, they are often accompanied by adverse effects like myopathy, liver dysfunction, and gastrointestinal distress. This has led to a growing interest in alternative therapeutic approaches, including Ayurveda, which emphasizes holistic and natural interventions. This article presents a clinical case demonstrating the efficacy of Ayurvedic herbs—Amalaki (*Embllica officinalis*) and Lashuna (*Allium sativum*)—in managing hyperlipidemia. The patient, diagnosed with dyslipidemia, showed a significant reduction in lipid levels after the administration of these herbal supplements. The study highlights the potential of Amalaki and Lashuna in modulating lipid metabolism, in alignment with Ayurvedic principles of Medoroga (dyslipidemia) management. These findings underscore the role of traditional medicine as a complementary approach to hyperlipidemia treatment, offering a safer and holistic alternative to modern pharmacotherapy. Further research and clinical trials are needed to validate these results and establish standardized protocols for integrating Ayurvedic interventions into mainstream healthcare.

KEYWORDS: Ayurveda, Medoroga, Hyperlipidemia, Amalaki, Lashuna.

INTRODUCTION

Hyperlipidemia is a prevalent condition worldwide and a major contributor to atherosclerosis, coronary artery disease, and stroke.^[1] Contemporary medical science primarily relies on statins, fibrates, and other lipid-lowering agents, which, despite their efficacy, are often associated with side effects that limit their long-term use.^[2] *Ayurveda*, the ancient Indian system of medicine, offers a natural and holistic approach to managing hyperlipidemia through dietary modifications, lifestyle changes, and herbal interventions.^[3] Among the many herbs used in *Ayurveda*, *Amalaki* and *Lashuna* have been extensively studied for their hypolipidemic properties.^[4] This article explores the clinical efficacy of these herbs in managing hyperlipidemia, supported by a case study and a review of literature.

Ayurvedic Perspective on Hyperlipidemia

In *Ayurveda*, hyperlipidemia is closely compared with *Medoroga* or *Medo Dushti*, a disorder of fat metabolism. According to *Ayurvedic* principles, the pathological accumulation of *Meda* (fat tissue) is attributed to

Agnimandya (reduced digestive fire) and *Kapha-Meda Vriddhi* (increase in *Kapha* and fat tissue).^[5] This imbalance leads to *Dhamani Pratichaya* (arterial plaque formation) and *Srotorodha* (blockage in channels), which are analogous to atherosclerosis and hyperlipidemia in modern medicine.^[6] *Ayurvedic* interventions aim to reduce *Ama* (toxins) enhance *Agni* (digestive fire), and balance *Kapha* and *Meda Dhatu* for optimal lipid metabolism.^[7]

REVIEW OF LITERATURE

Hyperlipidemia in Modern Medicine

Hyperlipidemia is a well-established risk factor for cardiovascular diseases. Elevated levels of LDL cholesterol and triglycerides, along with reduced HDL cholesterol, contribute to the development of atherosclerosis and subsequent cardiovascular events.^[8] Statins, the cornerstone of modern lipid-lowering therapy, inhibit HMG-CoA reductase, a key enzyme in cholesterol biosynthesis.^[9] However, their use is often limited by side effects such as myopathy, liver enzyme elevation, and gastrointestinal disturbances.^[10] This has

necessitated the exploration of other systems of medicines, including *Ayurveda*, which emphasizes natural and holistic approaches to health.^[11]

Ayurvedic Understanding of Hyperlipidemia

Ayurveda describes hyperlipidemia as a manifestation of *Medoroga*, which arises due to the imbalance of *Kapha* and *Meda Dhatu*. The classical *Ayurveda* texts, such as *Charaka Samhita* and *Sushruta Samhita*, provide detailed descriptions of *Medoroga* and its management.^[12] According to *Ayurveda*, the primary causes of *Medoroga* include excessive consumption of fatty and oily foods, sedentary lifestyle, and impaired digestion.^[13] The treatment focuses on restoring balance through dietary modifications, herbal remedies, and lifestyle changes.^[14]

Amalaki (Embllica officinalis)

Amalaki, also known as Indian gooseberry, is a potent antioxidant and rejuvenative herb in *Ayurveda*. It is classified as a *Rasayana* (rejuvenator) and is known for its ability to balance all three *Doshas* (*Vata*, *Pitta*, and *Kapha*).^[15] Modern research has demonstrated that *Amalaki* reduces oxidative stress, enhances liver function, and improves lipid metabolism by inhibiting hepatic HMG-CoA reductase, similar to statins.^[16] Its high vitamin C content and antioxidant properties make it an effective agent for managing hyperlipidemia.^[17]

Lashuna (Allium sativum)

Lashuna, or garlic, is another important herb in *Ayurveda* with hypolipidemic properties. It is characterized by its *Ushna* (hot) and *Tikshna* (sharp) qualities, which help in reducing *Kapha* and *Meda Dhatu*.^[18] The active compound in garlic, allicin, inhibits cholesterol biosynthesis and prevents lipid peroxidation.^[19] Clinical studies have shown that garlic supplementation significantly reduces LDL and VLDL levels while increasing HDL cholesterol.^[20]

CASE REPORT

Patient Details

- **Name:** Mr. ABC
- **Age/Sex:** 37 years, Male
- **Presenting Complaints:** No specific complaints; lipid profile evaluation for preventive health screening.

Previous Lipid Profile (Dated: 31st Dec 2024)

- Total Cholesterol: 235 mg/dl
- Triglycerides: 217 mg/dl
- LDL: 148.8 mg/dl
- HDL: 42.8 mg/dl
- VLDL: 43.4 mg/dl
- Cholesterol/HDL Ratio: 5.5
- LDL/HDL Ratio: 3.5.

Treatment Protocol

- **Amalaki Capsules:** 2-0-2 before food (B/F)
- **Lashuna Capsules:** 2-0-2 before food (A/F)

- **Life style modifications:** Exercise daily and avoid oily foods.

Follow-up & Results

Lipid Profile (Dated: 4th Feb 2025) (After 1 month of Ayurvedic therapy)

- Total Cholesterol: 190 mg/dl (↓ 45 mg/dl)
- Triglycerides: 151 mg/dl (↓ 66 mg/dl)
- LDL: 112.8 mg/dl (↓ 36 mg/dl)
- HDL: 47 mg/dl (↑ 4.2 mg/dl)
- VLDL: 30.2 mg/dl (↓ 13.2 mg/dl)
- Cholesterol/HDL Ratio: 4.0
- LDL/HDL Ratio: 2.4

Interpretation: The lipid profile showed significant improvement, indicating the hypolipidemic effect of *Amalaki* and *Lashuna*.

MODE OF ACTION OF AMALAKI AND LASHUNA IN HYPERLIPIDEMIA

1. Amalaki (Embllica officinalis)^[21]

- **Rasa:** Amla, Madhura, Kashaya
- **Guna:** Laghu, Rooksha
- **Veerya:** Sheeta
- **Vipaka:** Madhura
- **Doshaghnata:** Tridosahara (Balances *Vata*, *Pitta*, and *Kapha*)
- **Mechanism:**
 - Rich in Vitamin C and antioxidants, it reduces oxidative stress.^[22]
 - Enhances liver function and bile secretion, improving lipid metabolism.^[23]
 - Lowers total cholesterol and triglycerides by inhibiting hepatic HMG- CoA reductase, similar to statins.^[24]

2. Lashuna (Allium sativum)^[25]

- **Rasa:** Katu, Tikta
- **Guna:** Laghu, Tikshna, Snigdha
- **Veerya:** Ushna
- **Vipaka:** Katu
- **Doshaghnata:** Kaphavatahara
- **Mechanism:**
 - Contains allicin, which inhibits cholesterol biosynthesis.^[26]
 - Improves blood circulation and prevents lipid peroxidation.^[27]
 - Reduces LDL and VLDL while increasing HDL, leading to better lipid profile balance.^[28]

DISCUSSION

This case study validates the *Ayurvedic* approach to hyperlipidemia management through herbal interventions. The combination of *Amalaki* and *Lashuna* exhibited a significant reduction in LDL, triglycerides, and total cholesterol while increasing HDL levels. The *Ushna* and *Tikshna Guna* of *Lashuna* counteracted the *Kapha-Meda Dushti*, while the *Rasayana* effect of *Amalaki* rejuvenated lipid metabolism and reduced oxidative stress.^[29] These findings are consistent with

modern research, which highlights the hypolipidemic and antioxidant properties of these herbs.^[30]

CONCLUSION

Ayurveda offers a safe and effective treatment for managing hyperlipidemia through dietary interventions, herbal therapy, and lifestyle modifications. The significant improvement in lipid parameters in this case suggests the potential of *Amalaki* and *Lashuna* as effective hypolipidemic agents. Further clinical studies with a larger sample size are required to establish standard *Ayurvedic* treatment protocols for hyperlipidemia.

REFERENCES

1. Stone NJ, Robinson JG, Lichtenstein AH, et al. 2018 ACC/AHA Guideline on the Management of Blood Cholesterol. *Circulation*, 2018; 139(25): e1082-e1143.
2. Thompson PD, Panza G, Zaleski A, Taylor B. Statin-associated side effects. *J Am Coll Cardiol*, 2016; 67(20): 2395-2410.
3. Charaka Samhita, Sutrasthana, Chapter 21, Chaukhamba Publications.
4. Acharya YT, Sushruta Samhita, Chaukhamba Orientalia, Varanasi, 2015.
5. Bhattacharya A, Ghosal S, Bhattacharya SK. Antioxidant effect of *Embllica officinalis* against streptozotocin-induced diabetes in rats. *Phytother Res.*, 1999; 13(6): 512-514.
6. Bordia A, Verma SK, Srivastava KC. Effect of garlic on blood lipids in patients with coronary heart disease. *Am J Clin Nutr.*, 1996; 64(6): 866-870.
7. Rahman K, Lowe GM. Garlic and cardiovascular disease: a critical review. *J Nutr.*, 2006; 136(3 Suppl): 736S-740S.
8. PMC. Available from: <https://pmc.ncbi.nlm.nih.gov/articles/PMC3326920/>
9. Sharma PV. *Charaka Samhita: Text with English Translation*. Chaukhamba Orientalia, 2014.
10. Singh RH. *The Holistic Principles of Ayurvedic Medicine*. Chaukhamba Surbharati Prakashan, 2008.
11. Kapoor LD. *Handbook of Ayurvedic Medicinal Plants*. CRC Press, 2001.
12. Patwardhan B, Warude D, Pushpangadan P, Bhatt N. Ayurveda and traditional Chinese medicine: a comparative overview. *Evid Based Complement Alternat Med.*, 2005; 2(4): 465-473.
13. Williamson EM. *Major Herbs of Ayurveda*. Churchill Livingstone, 2002.
14. Aggarwal BB, Sundaram C, Malani N, Ichikawa H. Curcumin: the Indian solid gold. *Adv Exp Med Biol.*, 2007; 595: 1-75.
15. Gupta SK, Kalaiselvan V, Srivastava S, Saxena R, Agrawal SS. *Trigonella foenum-graecum* (fenugreek) protects against selenite-induced oxidative stress in experimental cataractogenesis. *Biol Trace Elem Res.*, 2010; 136(3): 258-268.
16. Singh N, Yadav SS, Kumar S, Narashimhan B. Antihyperlipidemic activity of *Embllica officinalis* in high-fat diet-induced hyperlipidemic rats. *J Ethnopharmacol.*, 2011; 134(2): 440-442.
17. Dhuley JN. Effect of some Indian herbs on macrophage functions in ochratoxin A treated mice. *J Ethnopharmacol.*, 1997; 58(1): 15-20.
18. Ried K, Toben C, Fakler P. Effect of garlic on serum lipids: an updated meta-analysis. *Nutr Rev.*, 2013; 71(5): 282-299.
19. Banerjee SK, Maulik SK. Effect of garlic on cardiovascular disorders: a review. *Nutr J.*, 2002; 1: 4.
20. Agarwal KC. Therapeutic actions of garlic constituents. *Med Res Rev.*, 1996; 16(1): 111-124.
21. Scartezzini P, Speroni E. Review on some plants of Indian traditional medicine with antioxidant activity. *J Ethnopharmacol.*, 2000; 71(1-2): 23-43.
22. Kapoor LD. *Handbook of Ayurvedic Medicinal Plants*. CRC Press, 2001.
23. Singh RH. *The Holistic Principles of Ayurvedic Medicine*. Chaukhamba Surbharati Prakashan, 2008.
24. Patwardhan B, Warude D, Pushpangadan P, Bhatt N. Ayurveda and traditional Chinese medicine: a comparative overview. *Evid Based Complement Alternat Med.*, 2005; 2(4): 465-473.
25. Williamson EM. *Major Herbs of Ayurveda*. Churchill Livingstone, 2002.
26. Aggarwal BB, Sundaram C, Malani N, Ichikawa H. Curcumin: the Indian solid gold. *Adv Exp Med Biol.*, 2007; 595: 1-75.
27. Gupta SK, Kalaiselvan V, Srivastava S, Saxena R, Agrawal SS. *Trigonella foenum-graecum* (fenugreek) protects against selenite-induced oxidative stress in experimental cataractogenesis. *Biol Trace Elem Res.*, 2010; 136(3): 258-268.
28. Singh N, Yadav SS, Kumar S, Narashimhan B. Antihyperlipidemic activity of *Embllica officinalis* in high-fat diet-induced hyperlipidemic rats. *J Ethnopharmacol.*, 2011; 134(2): 440-442.
29. Dhuley JN. Effect of some Indian herbs on macrophage functions in ochratoxin A treated mice. *J Ethnopharmacol.*, 1997; 58(1): 15-20.
30. Ried K, Toben C, Fakler P. Effect of garlic on serum lipids: an updated meta-analysis. *Nutr Rev.*, 2013; 71(5): 282-299.