The Role of Ayurvedic Multi-Herbal Tea in Dyslipidemia Management: A Case Study

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Abstract

Dyslipidemia is a major risk factor for cardiovascular diseases, often influenced by poor metabolism and lifestyle habits. This study evaluates the effectiveness of an Ayurvedic multi-herbal tea in managing dyslipidemia. A 45-year-old male patient with abnormal lipid levels and associated symptoms underwent intervention with a decoction containing *Dhanyaka, Jirak, Saunf, Ajwain, Methi,* and *Dalchini*. Post-treatment, there was a significant weight reduction (80 kg to 72 kg), serum cholesterol (261 to 196 mg/dl), triglycerides (255 to 180 mg/dl), LDL (160 to 120 mg/dl), and VLDL (51 to 35.5 mg/dl), with improved symptom relief. The herbal formulation's lipid-lowering, anti-inflammatory, and antioxidant properties played a crucial role in metabolic balance. The study highlights the potential of *Ayurveda* as a natural, effective, and safe approach to dyslipidemia management. Further clinical trials are recommended to validate its efficacy.

Keywords: Dyslipidemia, *Ayurveda,* Multi-Herbal Tea, Lipid Profile, *Medovriddhi.*

Introduction

The World Health Organization (WHO) states that cardiovascular diseases (CVDs) are the world's leading cause of mortality, and dyslipidemia is a key factor in their etiology. Unusual blood lipid levels, such as increased total cholesterol (TC), low-density lipoprotein cholesterol (LDL-C), triglycerides (TG), and/or decreased high-density lipoprotein cholesterol (HDL-C), are indicative of dyslipidemia, a significant risk factor for cardiovascular diseases (CVD).[1] *Ayurveda,* an ancient Indian school of medicine, stresses total well-being and the use of natural therapies. Because of its lipid-lowering, anti-inflammatory, and antioxidant qualities, multi-

herbal formulations a characteristic of *Ayurveda* have demonstrated promise in treating chronic diseases, including dyslipidemia.[2,3] *Ayurvedic* herbal preparations are a promising supplementary strategy because they treat underlying metabolic imbalances and frequently have fewer side effects than synthetic statins.[4] People experience a lot of "not-good" scenarios because of today's hectic lifestyles, stressful times, technological advancements, and shifting dietary patterns.[5] Changes in lifestyle factors including nutrition, exercise, and mental stress can result in variations in blood lipid levels. Consequently, several clinical conditions, including obesity, hypertension, diabetes, cardiovascular disease, and metabolic syndrome, may be exacerbated by dyslipidemia.[6] Abnormal dyslipidemia levels are thought to be the main cause of atherosclerotic disorders, particularly coronary heart diseases. According to *Ayurveda,* dyslipidemia and *Medovriddhi* may be connected. [7] *Medovriddhi,* a *Santarpanjanya Vyadhi* in *Ayurveda,* may be caused by a high-fat diet *(Snighdha, Guru, Pichhila)* and sedentary lifestyles *(Cheshtadvesha, Asanasukha)*. Medovahasrotodushti is the result of possessing *Avyayama, Achinta, Diwaswapna, Atisnigdha, Madhura, Adhyashan, Atimatra Ahara,* and *Beeja swabhava.*[8] When the moment came, *Medovaha's Srotorodha* (Blockage) *Medoroga* and related conditions like *Sthoulya, Prameha, Kushtha, diseases of Ama, Napunsakata*, and *Dysuria* are caused by *Srotas,* which propagates faulty tissue metabolism.[9] According to *Ayurveda,* dyslipidemia might be linked to *Medovruddhi*.[10] Including the section on dyslipidemia abnormalities in one or more blood lipoproteins. Numerous factors, including the symptoms of diabetes, obesity, heart disease, and thyroid disorders, are involved in this circumstance. One of the most prevalent and controllable risk factors for cardiovascular disease is dyslipidemia. Cardiovascular disorders are currently among the leading causes of death worldwide.[11] Dyslipidemia can be avoided and the load of allopathic drugs can be better managed with *Ayurvedic* treatment and nutrition *(Ahara).*

Objectives of the study

1. To assess the impact of *Ayurvedic* multi-herbal tea on lipid profiles in dyslipidemia management.
2. To explore the role of *Ayurvedic* interventions in reducing dyslipidemia and associated metabolic disorders.

Materials and method

Study Design

This single-case observational study a well-*Ayurvedic* multi-herbal tea treats dyslipidemia. The intervention was carried out, with frequent monitoring and follow-up.

The multi-herbal tea formulation consisted of a blend of the following Ayurvedic herbs:

1. *Dhanyaka (Coriandrum sativum)*
2. *Jirak (Cuminum cyminum)*
3. *Saunf (Foeniculum vulgare)*
4. *Ajwain (Trachyspermum ammi)*
5. *Methi (Trigonella foenum-graecum)*
6. *Dalchini (Cinnamomum zeylanicum)*

The *Ayurvedic* compound was prepared by taking 5 grams each of *Dhanyaka, Jirak*, *Saunf*, *Ajwain*, *Methi*, and *Dalchini* soaking them overnight in two glasses of water, boiling the mixture in the morning until it reduced to 1.5 glasses, straining it, adding 1 gram of black salt, and consuming it on an empty stomach.

Lifestyle Modifications

A two-month clinical trial was conducted in which patients were administered a formulated herbal tea daily to assess its effects. A low-fat, high-fiber diet was recommended to the participants, and they were urged to engage in mild exercise, such as 30 minutes a day of brisk walking. *Yoga* and meditation were also suggested as stress-reduction methods.

Outcome Measures

- **Primary Outcome:** Changes in lipid profile parameters (TC, LDL-C, HDL-C, and TG) were measured at baseline and after the intervention period.
- **Secondary Outcome:** Observation of any adverse effects and participant-reported improvements in overall well-being.

Data Collection and Analysis

Blood samples were collected at baseline and post-intervention for lipid profile assessment using standard enzymatic methods. Data were analyzed using descriptive statistics to evaluate changes in lipid levels.

Case Study

A 45-year-old male Diagnosed with dyslipidemia 6 months ago, with no prior history of diabetes, hypertension, or cardiovascular disease visited Hans Clinic, Panipat, (Haryana) on 14 July 2024. The patient suffered from fatigue, mild chest discomfort during exertion, and increased body weight over the last year. The patient has a family history of coronary artery disease (CAD) in his father and type 2 diabetes in his mother. The patient leads a sedentary lifestyle, consumes a high-fat, low-fiber diet, has irregular meal timings, experiences frequent stress, and lacks physical activity.

Table 1: Vitals during the initial examination on the first day of the visit

Parameters	Findings
Blood Pressure	140/80 mmHg
Pulse Rate	88/min
Weight	79.5kg

Table 2: Baseline Clinical and Biochemical Parameters

Parameter	Baseline Value	Normal Range
Total Cholesterol (TC)	261 mg/dL	< 200 mg/dL
LDL Cholesterol (LDL-C)	160 mg/dL	< 100 mg/dL
HDL Cholesterol (HDL-C)	50 mg/dL	> 40 mg/dL
Triglycerides (TG)	255 mg/dL	< 150 mg/dL
BMI	28.5 kg/m²	18.5–24.9 kg/m²

Diet & Regimen (*Pathyapathya*) - Special diet (menu) planner and exercise planner adopted for Dyslipidemia.

Table 3: Properties of Herbal Drugs

Name	***Dhanyaka***	***Jirak***	***Saunf***	***Ajwain***	***Methi***	***Dalchini***
Botanical Name	*Coriandrum sativum*	*Cuminum cyminum*	*Foenieulum vulgare*	*Trachyspermum ammi*	*Trigonella foenum graecum*	*Cinnamomum zeylanicum*
Family	Umbelliferae	Umbelliferae	Umbelliferae	Umbelliferae	Leguminoseae	Lauraceae
Rasa	*Kashaya, Tikt, Madhur KatuKate*	*Madhur Katu, Tikt*	*Madhur Katu, Tikt*	*Kattu, Tikt*	*Kattu*	*Katu, Tikt, Madhur*
Guna	*Laghu Snigdha*	*Laghu Rukhsa*	*Laghu Snigdha*	*Laghu, Ruksha, Tikshana*	*Laghu Snigdha*	*Laghu, Ruksha, Tikshna*
Virya	*Ushna*	*Ushna*	*Shita*	*Ushna*	*Ushna*	*Ushna*
Vipak	*MadhurKate*	*Madhur*	*Kate*	*Kattu*	*Madhur*	*Madhur*
Doshakarma	*Tridoshhar*	*KaphVaatvikark*	*VaatPitta Shamak*	*KaphVaatshamak, Pittavardhak*	*VaatVikarak*	*KaphVaatshamak*
Active Principle	Coriander (45-70%)	Cumaldehyde (20-40%)	Anethole (50-60%)	Thymol (35-60%)	Diosgenin (2-5%), Trigonelline (0.2-0.5%)	Cinnamaldehyde (60-80%), Eugenol (5-10%
Prabhav	*Deepana, Pachana, Mutral*	*Deepana, Amapachak, Grahi*	*Shwasahar, Deepana, Pachana*	*Shoolhar, Krimighna, Deepana*	*Balya, Vrisya, Sthanya Vardhak*	*Deepana, Pachana, Hridaya Vardhak*
Proportion	1	1	1	1	1	1
Form	*Dhanyaka* seed	*Jirak* seed	*Saunf* seed	*Ajwain* seed	*Methi* seed	*Dlachini* Bark

Assessment criteria

Subjective Parameters

Bharvruddhi (excess weight), *Swedadhikya* (excessive sweating), *Ubhayapadadaha* (burning sensation in the legs on both sides), *Angagarav* (lethargy), *Katishoola* (back pain). For all these symptoms, the following assessment was done Pre and Post-treatment.

Results

There is a great improvement was observed in the symptoms after the Herbal Drugs as follows**:**

A comparison of symptoms and indicators before and after treatment is shown in Table 4. All symptoms have significantly decreased, as evidenced by the *Bharvruddhi* (weight) dropping from 80 kg to 72 kg. After treatment, other symptoms like *Swedadhikya* (excessive perspiration), *Ubhayapad daha* (pain in both limbs), *Angagaurav* (body heaviness), and *Katishool* (back pain) completely go away, going from a severity of 2 to 0. These results are graphically supported by Figure 1, which shows pre-treatment values for all parameters, indicating the treatment worked to reduce the symptoms.

Table 4: Comparison of pre and post-treatment

Signs and Symptoms	Pre-treatment	Post-treatment
Bharvruddhi (Weight in Kg	80	72
Swedadhikya	02	00
Ubhayapad daha	02	00
Angagaurav	01	00
Katishool	02	00

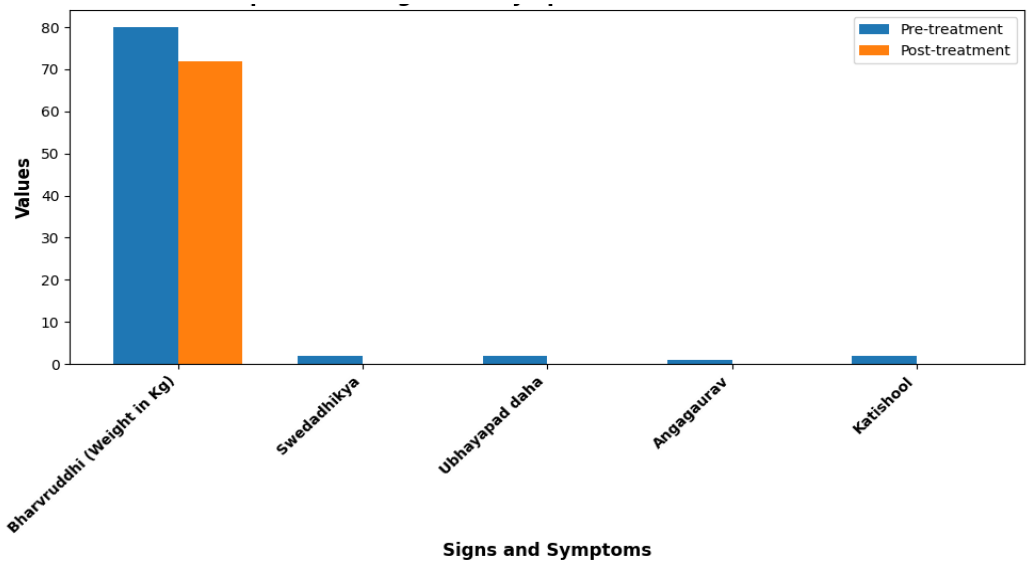

Figure 1: Comparison of Signs and Symptoms Pre and Post Treatment

The lipid profile report presents a comparative analysis of the patient's cholesterol levels before and after treatment or lifestyle intervention. The pre-report values indicate elevated levels of serum cholesterol (261 mg/dl), triglycerides (255 mg/dl), LDL (160 mg/dl), and VLDL (51

mg/dl), all of which exceed their respective reference ranges. These elevated lipid levels suggest an increased risk for cardiovascular diseases. Post-intervention, there is a notable improvement in lipid parameters. Serum cholesterol decreased to 196 mg/dl, triglycerides to 180 mg/dl, LDL to 120 mg/dl, and VLDL to 35.5 mg/dl, bringing most values closer to their respective reference ranges. HDL, showed a slight decline from 50 mg/dl to 40.5 mg/dl, though it remains within the acceptable range. The cholesterol/HDL ratio improved from 5.22 to 4.84, indicating a reduced risk of cardiovascular complications. Similarly, the HDL/LDL ratio decreased from 3.20 to 2.96, which, although still within the acceptable limit, suggests a need for continued monitoring and possibly intervention to maintain optimal lipid balance. The overall improvement in the lipid profile suggests the effectiveness of the intervention in reducing dyslipidemia-related risks. Figure 2 graphically depicts these improvements and highlights the positive trend across all parameters, indicating the treatment worked to improve the patient's lipid profile.

Table 5: Pre and Post-Lipid Profile Report of the Patient

Test	Pre-report	Post -report	Reference range
Sr. Cholesterol	261	196	130 -250 mg/dl
Sr.Triglycerides	255	180	40 -160 mg/dl
Sr.HDL	50	40.5	30 -80 mg/dl
Sr.LDL	160	120	0 -150 mg/dl
Sr.VLDL	51	35.5	5-40 mg/dl
Cholestrol/HDL ratio	5.22	4.84	Upto 6.0
HDL/LDL ratio	3.20	2.96	Upto 4.5

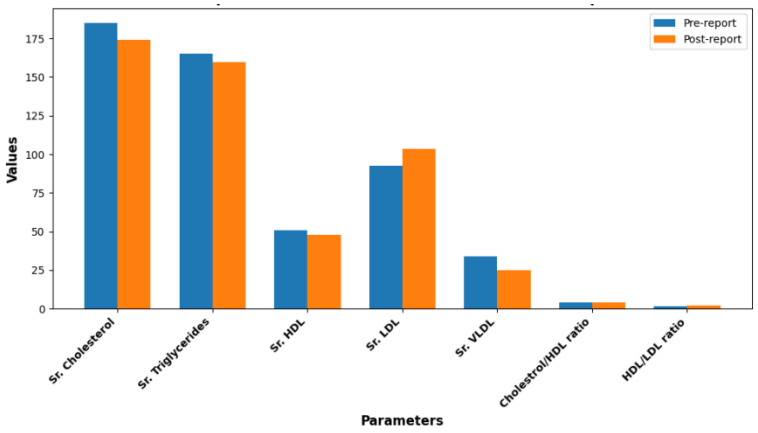

Figure 2: Comparison of Blood Parameters Pre and Post-Report

Discussion

The study's subject, a 45-year-old man with a history of dyslipidemia, showed signs of weight gain, exhaustion, and minor chest pain. The necessity for therapeutic intervention was highlighted by baseline examinations that revealed abnormalities in body mass index (BMI) and lipid markers. *Dhanyaka (Coriandrum sativum)*, *Jirak (Cuminum cyminum)*, *Saunf (Foeniculum vulgare)*, *Ajwain (Trachyspermum ammi)*, *Methi (Trigonella foenum-graecum)*and *Dalchini (Cinnamomum zeylanicum)* were among the multi-herbal teas prepared for this investigation. Because of their distinct qualities, which support lipid-lowering, anti-inflammatory, and antioxidant effects, each of these herbs is well-known in *Ayurvedic* therapy. In addition to its diuretic effects, which can help reduce weight and water retention, *Dhanyaka* is well-known for its *Deepana* (digestive stimulant) and *Pachana* (digestive assist) qualities. *Jirak* helps with weight and cholesterol management by promoting better digestion and nutrient assimilation through its *Deepana*, *Grahi* (absorption-enhancing), and *Amapachaka* (detoxifying) qualities.[12] Through its active ingredient, anethole, Saunf's Shwasahara (respiratory-relieving) and *Pachana* qualities help to lower oxidative stress and regulate cholesterol levels. The antibacterial *(Krimighna)* and pain-relieving *(Shoolhara)* qualities of *Ajwain* help in digestion. The antibacterial *(Krimighna)* and pain-relieving *(Shoolhara)* qualities of ajwain enhance overall metabolic health by assisting with detoxification and digesting. *Methi* is especially useful in treating dyslipidemia since it is full of bioactive substances including diosgenin and trigonelline, and has hypoglycemic, hypolipidemic, and anti-inflammatory qualities.[13] *Dalchini* (*Cinnamomum zeylanicum*) aids in digestion, improves metabolism, and acts as a *Deepana*

(appetizer) and *Pachana* (digestive stimulant). It also supports heart health *(Hridaya Vardhak)* and helps balance *Kapha* and *Vata doshas*. When taken daily as a decoction, the synergistic combination of these herbs probably had a major impact on lowering inflammation, enhancing lipid metabolism, and reestablishing metabolic balance. After the intervention, the patient's symptoms significantly improved. Significant weight loss from 80 kg to 72 kg was noted, most likely as a result of dietary changes, decreased water retention, and enhanced lipid metabolism. The effectiveness of the intervention in lowering systemic inflammation was demonstrated by the complete resolution of symptoms such as *Swedadhikya (*excessive perspiration), *Ubhayapadadaha* (burning feeling in legs), *Angagaurav (lethargy),* and *Katishoola* (back pain) after therapy. Following the intervention, there were noticeable improvements in the lipid profile measures shows significant improvement post-intervention, with serum cholesterol reducing from 261 to 196 mg/dl, triglycerides from 255 to 180 mg/dl, LDL from 160 to 120 mg/dl, and VLDL from 51 to 35.5 mg/dl, indicating a lower cardiovascular risk. HDL slightly declined from 50 to 40.5 mg/dl, while the cholesterol/HDL ratio improved from 5.22 to 4.84, and the HDL/LDL ratio changed from 3.20 to 2.96. These results highlight the intervention's effectiveness, though continued monitoring is advised. *Ayurveda* states that *Medovriddhi,* a disorder characterized by a pathological increase in *Meda Dhatu* (fat tissue), is associated with dyslipidemia. A high-fat diet, mental tension, and a sedentary lifestyle are some of the causative variables that contribute to *Medovahasrotodushti* (blockage of fat-metabolism channels). Systemic inflammation, metabolic abnormalities, and conditions including dyslipidemia, obesity, and cardiovascular illnesses are caused by this obstruction. By reducing *Kapha Meda Vruddhi* (excessive *Kapha* and fat buildup), the intervention sought to balance the *Vata*, *Pitta*, and *Kapha doshas*. The multi-herbal tea reduced *Ama* (toxins) and addressed tissue nourishment as a *Santarpana* and *Amapachaka* therapy.[14] The medication successfully regulated lipid metabolism decreased oxidative stress, and enhanced circulation when combined with lifestyle changes. Stress-induced cortisol release, which is known to worsen dyslipidemia and metabolic syndrome, was probably lessened by *yoga* and meditation.[15] These changes are in line with the *Ayurvedic* concepts of *Swasthavritta* (preventive healthcare) and *Dinacharya* (daily routine). With no documented negative effects, the intervention was well-tolerated, demonstrating the safety profile of *Ayurvedic* formulations, which provide a safe, all-natural substitute for synthetic statins and other lipid-lowering medications.

Conclusion

The potential of *Ayurvedic* multi-herbal tea as a safe and efficient treatment for dyslipidemia is demonstrated by this study. The patient's notable improvements in weight loss, lipid profile measurements, and related symptom relief demonstrate the effectiveness of the herbal formulation and lifestyle changes. Restoring metabolic balance and enhancing general health was made possible by the chosen herbs' synergistic qualities, which included lipid-lowering, anti-inflammatory, and antioxidant effects. The study also emphasizes treating metabolic problems by incorporating dietary and lifestyle modifications, as recommended by *Ayurvedic* principles. To confirm the effectiveness and safety of *Ayurvedic* multi-herbal formulations in a range of populations, future studies should concentrate on extensive, randomized controlled trials. All things considered, *Ayurvedic* treatments show great potential for the comprehensive and long-term control of dyslipidemia and related cardiovascular risks.

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CONSENT PERFORMA

CERTIFICATE BY INVESTIGATOR

I certify that I have disclosed all details about the study in the terms easily understood by the patient. (मैं प्रमाणित करता हूं कि मैंने रोगी द्वारा आसानी से समझने वाले शब्दों में अध्ययन के बारे में सभी विवरणों का खुलासा किया है।)

Date: _____Signature of the Investigator: ____Name: _____

CONSENT BY SUBJECT

The attending physician, the purpose of the clinical trial and the nature of drug treatment and follow-up have informed me to my satisfaction, including the laboratory investigations to be performed to monitor and safeguard my body functions. I am also aware of my right to opt out of the trial at any time during the course of the trial without having to give the reasons for doing so. I am willing to undergo any risk for inclusion in this study. I, exercising my free power of choice, hereby give my consent to be included as a subject in the clinical trial on *"***A clinical**

comparative study in management of Sthoulya w.s.r. to Obesity with Triphala churna and Trikatu churna".

मरीज के द्वारा सहमति ।

चिकित्सक ने मेरी संतुषटि के लिए मुझे, चिकित्सकीय उपचार के उद्देश्य एवं दवा की प्रकृति और आगे की कारवाई के बारे में बता दिया है, और मेरे शरीर की प्रयोगशाला में होने वाली जाचों के बारे मे भी बता दिया है। मैं परीक्षण के दौरान किसी भी समय बिना कारण परीक्षण से बाहर निकलने के अपने अधिकार से अवगत हूँ। मैं इस अध्ययन में शामिल होने के लिए किसी भी जोखिम से गुजरने के लिए तैयार हूँ। मैं अपनी इच्छा से, इस चिकित्सकीय परीक्षण [स्थौल्य (ओबेसिटि) के उपचार में त्रिफला चूर्ण एवं त्रिकटु चूर्ण का चिकित्सकीय तुलनात्मक अध्ययन] में एक मरीज के रूप में शामिल होने के लिए अपनी सहमति देता हूँ।

Date: _____ Name of subject: _____Signature or Thumb impression_____

Date: _____ Name of witness: _____Signature or Thumb impression: _____

Relationship _____