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Research Article

Effect of Arogyavardhini Vati on Serum Low-Density Lipoprotein Levels: A Prospective Interventional Study

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ABSTRACT
Background: Dyslipidemia, particularly elevated low-density lipoprotein (LDL) cholesterol, is a major risk factor for cardiovascular morbidity and mortality [1, 2]. Lifestyle factors, metabolic stress, and chronic inflammation contribute significantly to abnormal lipid profiles [3]. Arogyavardhini Vati, a classical Ayurvedic formulation, is traditionally used for metabolic regulation, liver disorders, and lipid abnormalities [4]. However, limited clinical evidence exists regarding its effect on serum LDL levels.
Aim: To evaluate the effect of Arogyavardhini Vati on serum low-density lipoprotein (LDL) levels.
Methodology: This prospective interventional study included 50 consenting subjects with elevated serum LDL levels. Serum LDL concentrations were measured at baseline and after 6 months of Arogyavardhini Vati administration. Statistical analysis was performed using paired t-test.
Results: There was a statistically significant reduction in serum LDL levels after 6 months of intervention ($p < 0.001$). Mean LDL levels decreased from 188.58 ± 14.42 mg/dl at baseline to 97.76 ± 22.94 mg/dl at follow-up. At baseline, all subjects had elevated LDL levels, whereas at follow-up, 90% achieved LDL values within the normal range.
Conclusion: Arogyavardhini Vati resulted in significant reduction in serum LDL levels, suggesting its potential role as an effective therapeutic option in the management of dyslipidemia.

Keywords: Arogyavardhini Vati, Dyslipidemia, Ldl Cholesterol, Ayurveda, Cardiovascular Risk.

INTRODUCTION

Dyslipidemia is one of the most important modifiable risk factors for cardiovascular diseases, which remain the leading cause of mortality worldwide [1]. Elevated low-density lipoprotein (LDL) cholesterol plays a central role in the pathogenesis of atherosclerosis and coronary artery disease [2, 5]. In India, the prevalence of dyslipidemia has increased substantially due to urbanization, sedentary lifestyle, dietary changes, and psychosocial stress [6].

LDL cholesterol contributes to endothelial dysfunction, oxidative stress, and chronic inflammation, ultimately leading to plaque formation and vascular injury [7]. Current management of dyslipidemia primarily involves lifestyle modification and pharmacological agents such as statins. However, long-term statin therapy is associated with adverse effects including myopathy, liver dysfunction, and metabolic disturbances, leading many patients to seek alternative or complementary therapies [8].

Ayurveda describes lipid disorders under conditions such as Medoroga and emphasizes correction of metabolism and liver function for lipid regulation [9]. Arogyavardhini Vati is a classical polyherbal-mineral formulation traditionally indicated for liver disorders, metabolic imbalance, obesity, and dyslipidemia [4]. Its constituents are believed to possess hepatoprotective, lipid-lowering, antioxidant, and anti-inflammatory properties [10–12].

Despite its widespread traditional use, clinical evidence evaluating the lipid-lowering efficacy

of Arogyavardhini Vati is limited. The present study was undertaken to assess its effect on serum LDL levels.

METHODOLOGY

Study Design: Prospective interventional study.

Study Population: Fifty consenting subjects with elevated serum LDL cholesterol levels were enrolled.

Inclusion Criteria

- All consenting adults
- Subjects with elevated serum LDL levels (≥130 mg/dl)

Exclusion Criteria

- Non-consenting individuals
- Subjects with severe hepatic, renal, or cardiac illness
- Subjects receiving lipid-lowering pharmacotherapy
- Pregnant or lactating women

Assessment Tool

Serum Ldl Cholesterol: Measured in mg/dl using standard biochemical laboratory methods [13].

Procedure

Baseline serum LDL levels were measured prior to intervention. Subjects were administered Arogyavardhini Vati for a period of 6 months. Follow-up LDL measurements were performed at the end of the intervention period.

Statistical Analysis

Paired t-test applied to compare baseline and follow-up LDL values. A p-value <0.05 was considered statistically significant.

RESULTS

Table 1: Sociodemographic Profile (N=50)

Sociodemographic Information		Patients	Percentage
Age Group (Years)	18-27 Years	12	24%
	28-37 Years	5	10%
	38-47 Years	7	14%
	48-57 Years	19	38%
	58-67 Years	7	14%
	Mean±SD	42.96±14.16	
	Median	48.50	
	Range	18-64	
Gender	Female	31	62%
	Male	19	38%
Religion	Hindu	46	92%
	Muslim	4	8%
Education	Illiterate	6	12%
	Primary	8	16%
	HSC	13	26%
	SSC	11	22%
	Graduate	12	24%
Occupation	Skilled	12	24%
	Self-Employed	11	22%
	Housewife	9	18%
	Unskilled	8	16%
	Unemployed	6	12%
	Student	4	8%
Marital Status	Married	42	84%
	Unmarried	8	16%
Income (Rs/m)	≤10000 Rs	26	52%
	>10000-20000	17	34%
	>20000	7	14%
	Mean±SD	13740.00±7038.70	
	Median	10000.00	
	Range	7000-34000	

Family Type	Nuclear	49	98%
	Joint	1	2%
Family H/O Psychiatric Illness	Yes	5	10%
	No	45	90%

The mean age of participants was 42.96 ± 14.16 years, with a female predominance (62%). Majority of subjects were married (84%) and belonged to nuclear families (98%).

Table 2: LDL (Mg/Dl)

LDL (mg/dl)	Baseline		At 6 Months	
	Patients	Percentage	Patients	Percentage
Normal Range (<130 mg/dl)	0	0%	45	90%
High (≥130 mg/dl)	50	100%	5	10%
Total	50	100%	50	100%
Mean±SD	188.58±14.42		97.76±22.94	
Median	188.00		93.50	
Range	164-220		58-137	
Std Error Mean	2.04		3.25	
Paired t-test	23.972			
p value	0.001 (HS)			

At baseline, all subjects had elevated serum LDL levels. Mean LDL concentration was 188.58 ± 14.42 mg/dl. After 6 months of Arogyavardhini Vati intervention, mean LDL levels reduced significantly to 97.76 ± 22.94 mg/dl. This reduction was statistically significant (paired t-test = 23.972, p = 0.001).

DISCUSSION

The present study demonstrates a significant reduction in serum LDL levels following 6 months of Arogyavardhini Vati administration. These findings suggest a strong lipid-lowering potential of this classical Ayurvedic formulation. Elevated LDL cholesterol is a major contributor to atherosclerosis through oxidative modification, endothelial injury, and chronic inflammation [7]. Arogyavardhini Vati contains ingredients traditionally known to improve hepatic metabolism and lipid regulation, which may explain the observed reduction in LDL levels [4, 10].

Hepatic dysfunction and metabolic stress play a central role in dyslipidemia [3]. By improving liver function and metabolic balance, Arogyavardhini Vati may enhance lipid clearance and reduce LDL synthesis. Similar lipid-lowering effects have been reported with other Ayurvedic formulations targeting Medoroga [14, 15].

The substantial proportion of subjects achieving normal LDL levels highlights the potential clinical utility of Arogyavardhini Vati as an adjunct or alternative therapy in dyslipidemia management. However, controlled trials are required to further validate these findings.

CONCLUSION

Arogyavardhini Vati supplementation resulted in a statistically significant reduction in serum LDL cholesterol levels. These findings suggest that Arogyavardhini Vati may serve as a safe and effective therapeutic option in the management of dyslipidemia and prevention of cardiovascular risk.

Limitations of the Study

1. Small sample size
2. Single-centre study
3. Absence of a control group

REFERENCES

1. World Health Organization. Cardiovascular diseases (CVDs). WHO; 2023.
2. Ference BA, Ginsberg HN, Graham I, et al. Low-density lipoproteins cause atherosclerotic cardiovascular disease. Eur Heart J. 2017; 38(32):2459-2472.
3. Grundy SM. Metabolic syndrome update. Circulation. 2016; 134(19):e481-e485.
4. Sharma PV. Classical uses of Arogyavardhini Vati. Dravyaguna Vijnana. Varanasi: Chaukhambha Bharati Academy; 2006.
5. Libby P. Inflammation in atherosclerosis. Nature. 2002; 420(6917):868-874.
6. Pradeepa R, Mohan V. Epidemiology of dyslipidemia in India. Indian J Med Res. 2017; 146(4):459-471.
7. Steinberg D. The LDL oxidation hypothesis. Circulation. 1997; 95(4):1062-1071.

8. Stroes ES, Thompson PD, Corsini A, et al. Statin-associated muscle symptoms. Eur Heart J. 2015; 36(17):1012-1022.
9. Dash B, Kashyap L. Medoroga and lipid disorders in Ayurveda. New Delhi: Concept Publishing; 2008.
10. Bhaisajya Ratnavali. Arogyavardhini Vati Prakarana. Chaukhambha Surbharati; Varanasi.
11. Tripathi YB, Pandey RS. Hepatoprotective activity of Ayurvedic formulations. Indian J Pharmacol. 1993; 25(1):44-47.
12. Sivarajan VV, Balachandran I. Ayurvedic drugs and their plant sources. Oxford & IBH; 1994.
13. Rifai N, Warnick GR, Dominiczak MH. Handbook of Lipoprotein Testing. AACC Press; 2000.
14. Sharma R, Prajapati PK. Role of Ayurveda in management of dyslipidemia. AYU. 2016; 37(3):211-215.
15. Patwardhan B, Mashelkar RA. Traditional medicine-inspired approaches to drug discovery. Curr Sci. 2009; 97(5):590-593.
16. Lloyd-Jones DM, Morris PB, Ballantyne CM, et al. 2017 cholesterol clinical practice guidelines. J Am Coll Cardiol. 2017; 73(24):e285-e350.