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AN OBSERVATIONAL STUDY TO FIND OUT ETIOLOGY AND ASSOCIATED DISORDERS OF DYSLIPIDEMIA IN RELATION TO MEDOVAHA STROTO DUSHTI AND AMA

Anand Garima[1]* and Parashar Deepti[2]

[1]P.G. Scholar, P.G. Department of Rognidan Avum Vikriti Vigyan, Institute for Ayurved Studies and Research, Kurukshetra, Haryana, India.

[2]HOD & Professor, P.G. Department of Rognidan Avum Vikriti Vigyan, Institute for Ayurved Studies and Research, Kurukshetra, Haryana, India.

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***Corresponding Author**
Dr. Anand Garima
P.G. Scholar, P.G. Department of Rognidan Avum Vikriti Vigyan, Institute for Ayurved Studies and Research, Kurukshetra, Haryana, India.

ABSTRACT

This observational study investigates the correlation between dyslipidemia and Ayurvedic concepts of Medovaha Srotas Dushti (Impairment of lipid-carrying channels) and Ama (toxic metabolic byproducts). A total of 500 diagnosed dyslipidemia cases were analyzed to identify etiological factors, associated disorders, and pathophysiological correlations. Data collection involved structured questionnaires, clinical examinations, and lipid profile assessments. Statistical analyses, including Chi-square and ANOVA tests, revealed significant associations between dyslipidemia and lifestyle factors such as lack of exercise, daytime sleep, alcohol consumption, and fatty diets. Ayurvedic symptoms like Srotorodha, Balabhransha, and Gaurava were prevalent among participants. Additionally, comorbidities such as obesity (71.8%), hypertension (73.4%), diabetes (65.8%), and fatty liver (52.2%) were commonly observed. Findings indicate a strong linkage between dyslipidemia, Medovaha Srotas Dushti, and Ama, emphasizing the importance of lifestyle modifications and Ayurvedic interventions for prevention and management. Further research integrating modern and traditional frameworks is recommended for comprehensive understanding and treatment strategies.

KEYWORDS: Dyslipidemia, Medovaha Srotas Dushti, Ama, Strotorodh, Lifestyle factors.

INTRODUCTION

Modern lifestyle changes and technological advancements have led to an increased prevalence of non-communicable diseases (NCDs) such as hypertension, diabetes, and cardiovascular diseases, with obesity being a primary risk factor.[1] Dyslipidemia, characterized by elevated cholesterol and triglycerides, is closely linked to these conditions.[2] Though not explicitly mentioned in classical Ayurvedic texts, it can be correlated with **Medovaha Sroto Dushti** (impairment in fat-carrying channels) and **Ama** (toxic accumulations from poor digestion).

This observational study aims to integrate Ayurvedic concepts with modern medical understanding to explore the etiology, associated disorders, and correlations of dyslipidemia with **Medovaha Sroto Dushti** and **Ama**, thereby contributing to effective prevention and treatment strategies.

AIM AND OBJECTIVES

Aim

To establish the relationship between dyslipidemia and its correlation with **Medovaha Sroto Dushti** and **Ama**.

Objectives

1. Investigate the causes of dyslipidemia.
2. Examine disorders associated with dyslipidemia.
3. Explore the correlation between **Medovaha Sroto Dushti** and dyslipidemia.
4. Analyze the correlation between **Ama** and dyslipidemia.

Research framework

The study includes an introduction, literary review, methodology, observations, discussion, conclusion, and a bibliography.

Research question

Is there a correlation between dyslipidemia and **Medovaha Sroto Dushti** and **Ama**?

Hypothesis

- Research: A significant correlation exists.
- Null: No significant correlation exists.

MATERIAL AND METHOD

Study design: Observational, retrospective study

Duration: 2 years

Sample Size: 500 diagnosed cases of dyslipidemia

Sampling: Selection of pre-diagnosed patients

Location: Institute for Ayurved Studies and Research Hospital, Kurukshetra, Haryana

Data collection

- **Sources:** Patient records, structured questionnaires, and direct interviews
- **Tools:** Questionnaires (Demographics, Medical history, Lifestyle), clinical exams, and lipid profile tests

Inclusion criteria

- Patients aged 30–70 years with dyslipidemia (Diagnosed)
- Willing participants with written consent

Exclusion criteria

- Patients <30 or >70 years
- Patients with cancer or communicable diseases
- Unwilling participants

Ethical considerations

- Approval from the ethics committee
- Written informed consent from participants
- Confidentiality maintained

Procedure

Eligible patients from the pathology lab will be recruited, briefed about the study, and enrolled after obtaining consent.

Diagnostic criteria

Patients already diagnosed with Dyslipidemia.

Assessment criteria

Subjective parameters: Assessment done on the basis of Questionnaire.

Category	S. No.	Term in Samhita
Medovahi Stroto Dushti Lakshana[3] and Dushta Medaja Roga	1	अतिदीर्घ
	2	अति-ह्रस्व,
	3	अतिलोमा
	4	अलोमा
	5	अतिकृष्ण
	6	अतिगौर
	7	अतिस्थूल
	8	अतिकृश
Ati Sthoola[4]	1	जवोपरोधः
	2	कृच्छ्रव्यवायता
	3	दौर्बल्यम्
	4	दौर्गन्ध्यम्
	5	स्वेदाबाधः
	6	अतिक्षुधा
	7	अतिपिपासा
Medo vidh lakshana	1	स्वेदागमनं
	2	स्निग्धङ्गता
	3	तालुशोषः
	4	स्थूलशोफता
	5	पिपासा
Prameha Purvroopa[5]	1	जटिलीभावं केशेषु
	2	माधुर्यमास्यस्य
	3	करपादयोः सुप्ततादाहो
	4	मुखतालुकण्ठशोष
	5	पिपासाम
	6	आलस्य
	7	मलं काये, कायच्छिद्रेषूपदेह
	8	परिदाहं सुप्ततां चाङ्गेषु
	9	षटपदपिपीलिकाभिश्च

Category	S. No.	Term in Samhita
		शरीरमूत्राभिसरणं,
	10	मूत्रे च मूत्रदोषान्
	11	विस्त्रं शरीरगन्धं
	12	निद्रां
	13	तन्द्रां
Medovahi strotas dushti hetu[6]	1	अव्यायामात्
	2	दिवास्वप्न
	3	मेद्यानां चातिभक्षणात्
	4	वारुण्याश्चातिसेवनात्
Lakshan of ama[7]	1	स्रोतोरोध
	2	बलभ्रंश
	3	गौरव
	4	अनिलमूढताः
	5	आलस्य
	6	अपक्ति
	7	निष्ठीव
	8	मलसङ्गा
	9	अरुचि
	10	क्लम
Hetu of ama	1	विरुद्ध भोजन
	2	अध्यशन
	3	अजीर्ण भोजन

Objective parameters

LDH	> 450 U/L
LDL	> 130.0 mg/dl
Chol	> 200 mg/dl
TGs	> 135.0 mg/dl
HDL	< 42.0 mg/dl

Determination of serum VLDL and LDL- Cholesterol

Indirect method: Determination of VLDL and LDL can be for the values of

Cholesterol less than 400mg/dl, by using The Friedewald equation.

a) VLDL mg/dl = Triglycerides/5

b) LDL- Cholesterol, mg/dl = Cholesterol (Total)- (HDL+ VLDL)

METHODOLOGY

1. Data collection

- Use structured questionnaires and interviews to gather demographic, lifestyle, and medical history information.
- Conduct clinical examinations and collect laboratory samples.

2. Data management

- Enter data into a secure database and ensure accuracy through cleaning and validation.

3. Data analysis

- Use statistical software (e.g., SPSS, R) for analysis.
- Perform descriptive statistics and inferential analyses (Chi-square, One-way ANOVA) to identify associations between dyslipidemia and disorders linked to Medovaha Strotas Dushti or Ama.

4. Reporting

- Compile findings into a comprehensive report for peer-reviewed publication and conference presentations.

This approach aims to elucidate the relationship between dyslipidemia and its etiological and pathological correlations with Medovaha Strotas Dushti and Ama.

OBSERVATION AND RESULT

In the present study, a total number of 500 subjects were registered. The statistical data of 500 subjects is presented in detail.

Diagnostic criteria: Subjects with raised lipid profile.

- LDH > 450 U/L (225-450 U/L)
- HDL< 42.0 mg/dl (42.0-88.0 mg/dl)
- LDL> 130.0 mg/dl (0.0-130.0 mg/dl)
- Cholesterol> 200 mg/dl (0-200 mg/dl)
- TGs > 135.0 mg/dl (35.0-135.0 mg/dl

This study to evaluate the correlation between etiology and disorders related to Dyslipidaemia with *Medovaha Stroto Dushti* and *Ama*. The observations are subjected into statistical analysis to derive a conclusion. The statistical outcomes were analyzed, concluded and reported here

Test used

Chi-square test

One way anova

The statistical tests were applied with the following assumptions:

Hypothesized mean/ median difference = 0.

Level of significance (α) = 0.05.

Confidence interval (CI) = 95%.

The obtained results were interpreted as Level of Significance

- Non-significant : > 0.05
- Significant : ≤ 0.05

Category	Subcategory	Frequency (n)	Percentage (%)
1. Age Groups	30-40 years	151	30.2
	41-50 years	136	27.2
	51-60 years	116	23.2
	61-70 years	97	19.4
2. Gender	Male	298	59.6
	Female	202	40.4
3. Religion	Hindu	449	89.8
	Sikh	45	9
	Muslim	6	1.2
4. Occupation	Service	274	54.8
	Housewife	155	31
	Retired	44	8.8
	Labor	27	5.4
5. Marital Status	Married	456	91.2
	Unmarried	34	6.8
	Divorced	6	1.2
	Widow/Widower	4	0.8
6. Socio-Economic Status	Middle Class	401	80.2
	Lower Class	50	10
	Upper Class	49	9.8
7. Education	Undergraduate	193	38.6
	Senior Secondary	183	36.6
	Illiterate	36	7.2

Health-Related Factors	**1.Prakriti (Constitution)**		
	Kapha dominant Pitta	168	33.6
	Pitta dominant Kapha	102	20.4
2. Addiction History	Alcohol	264	52.8
	Smoking	156	31.2
	None	80	16
3. Bowel Consistency (Kostha)	Formed Bowel (Madhyama)	286	57.2
	Hard Bowel (Krura)	182	36.4
4. Kshuda (Appetite)	Manda (low appetite)	232	46.4
5. Aharashakti (Dietary Strength)	Madhyam	235	47
6. Physical Activity (Vyayama)	No Exercise	329	65.8
7. Sleep Quality (Nidra)	Khandita (interrupted sleep)	220	44

Etilogical Factors and Serum lipid profile

Table No. 1: Comparison of *avyayama* with serum lipid profile.

	Grade 0	**Grade 1**	**Grade 2**	**Grade 3**	**Grade 4**	**F value**	**p value**
N	64	56	16	37	329	2.46	<0.05
Serum Cholesterol	214.64 (38.14)	218.91 (44.20)	220.29 (43.44)	220.79 (35.17)	238.37 (36.48)	4.42	<0.05
Serum Triglyceride	176.96 (64.2)	201.62 (71.5)	207.61 (86.7)	206.63 (98.6)	235.72 (79.4)	4.35	<0.05
Serum LDL	113.88 (29.54)	120.43 (31.60)	120.83 (33.50)	121.85 (34.62)	152.67 (32.18)	8.93	<0.05
Serum HDL	57.78 (12.21)	55.32 (14.21)	53.99 (12.28)	54.42 (12.56)	41.25 (13.91)	6.81	<0.05
Serum LDH	431.55 (107.61)	478.00 (131.19)	492.25 (141.41)	509.12 (145.29)	518.86 (151.48)	2.46	<0.05

The P-value (<0.05) indicates a significant difference in lipid profile mean values across different grades of *Avyayama*. Serum cholesterol, triglycerides, LDL, and LDH were highest in Grade 4 and lowest in Grade 0, whereas HDL was highest in Grade 0 and lowest in Grade 4.

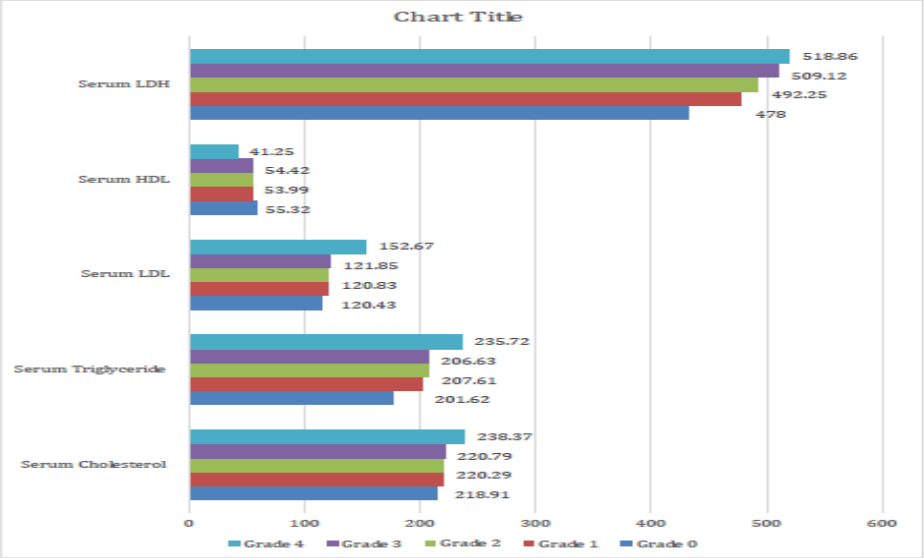

Fig. 1: Comparison of comparison of *avyayama* with serum lipid profile.

Table no. 2: Comparison of *diwaswapana* with serum lipid profile.

	Grade 0	Grade 1	Grade 2	Grade 3	Grade 4	F value	p value
N	49	46	76	178	151		
Serum Cholesterol	211.51 (40.08)	219.89 (34.86)	219.73 (41.73)	222.48 (39.34)	223.39 (37.67)	2.38	<0.05
Serum Triglyceride	203.84 (92.34)	195.21 (68.35)	187.22 (83.46)	199.95 (80.77)	210.71 (93.29)	2.75	<0.05
Serum LDL	121.42 (36.76)	122.97 (39.19)	122.57 (33.50)	122.40 (29.11)	124.06 (31.86)	0.04	>0.05
Serum HDL	56.24 (13.25)	55.53 (15.68)	53.40 (14.21)	52.48 (12.76)	52.77 (11.27)	0.762	>0.05
Serum LDH	454.95 (127.51)	480.92 (128.62)	490.68 (157.20)	498.83 (140.38)	508.93 (128.51)	2.46	<0.05

The P-value (<0.05) indicates a significant difference in serum cholesterol, triglycerides, and LDH across grades of *Diwaswapana*. Serum cholesterol, triglycerides, LDL, and LDH were highest in Grade 4 and lowest in Grade 0, while HDL was highest in Grade 0 and lowest in Grade 4.

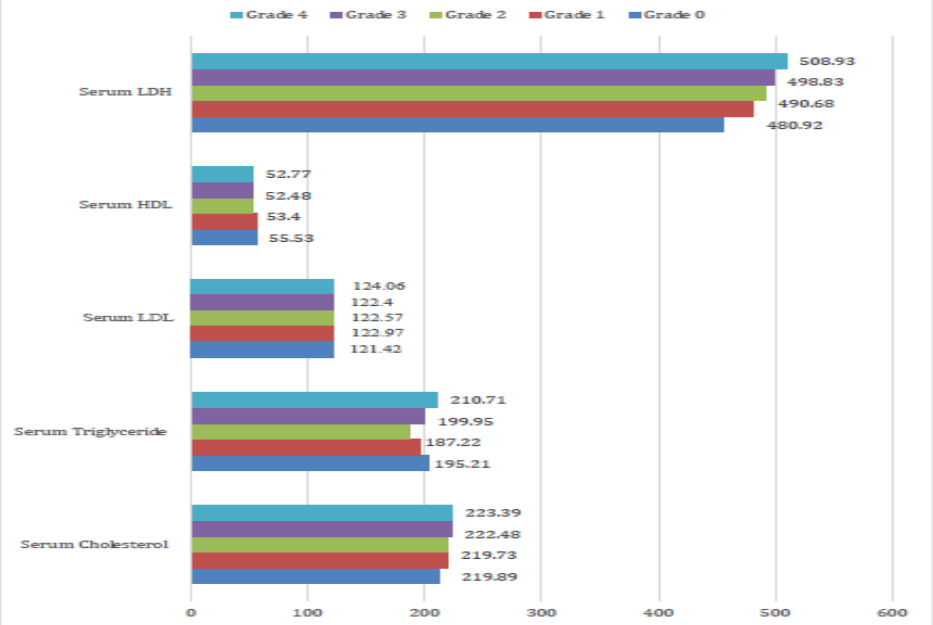

Fig. 2: Comparison of comparison of *diwaswapana* with serum lipid profile.

Table no. 3: Comparison of *madyapana* with serum lipid profile.

	Grade 0	Grade 1	Grade 2	Grade 3	Grade 4	F value	p value
N	236	21	52	97	94		
Serum Cholesterol	220.54 (39.27)	217.48 (35.48)	220.31 (48.92)	221.01 (38.64)	226.61 (34.50)	0.268	>0.05
Serum Triglyceride	177.44 (51.42)	199.75 (87.99)	195.33 (92.46)	200.94 (84.58)	213.73 (80.92)	3.2	<0.05
Serum LDL	119.26 (35.4)	121.44 (30.64)	123.19 (36.28)	123.39 (31.22)	127.35 (34.05)	2.9	<0.05
Serum HDL	55.92 (27.95)	53.94 (15.45)	55.10 (10.75)	50.55 (13.52)	49.88 (15.13)	1.33	>0.05
Serum LDH	470.29 (140.98)	473.19 (111.93)	478.42 (140.74)	500.36 (136.35)	505.02 (149.65)	0.997	>0.05

The P-value (<0.05) indicates a significant difference in serum triglycerides and LDL across grades of *Madyapana*. Serum cholesterol, triglycerides, LDL, and LDH were highest in Grade 4 and lowest in Grade 0, while HDL was highest in Grade 0 and lowest in Grade 4.

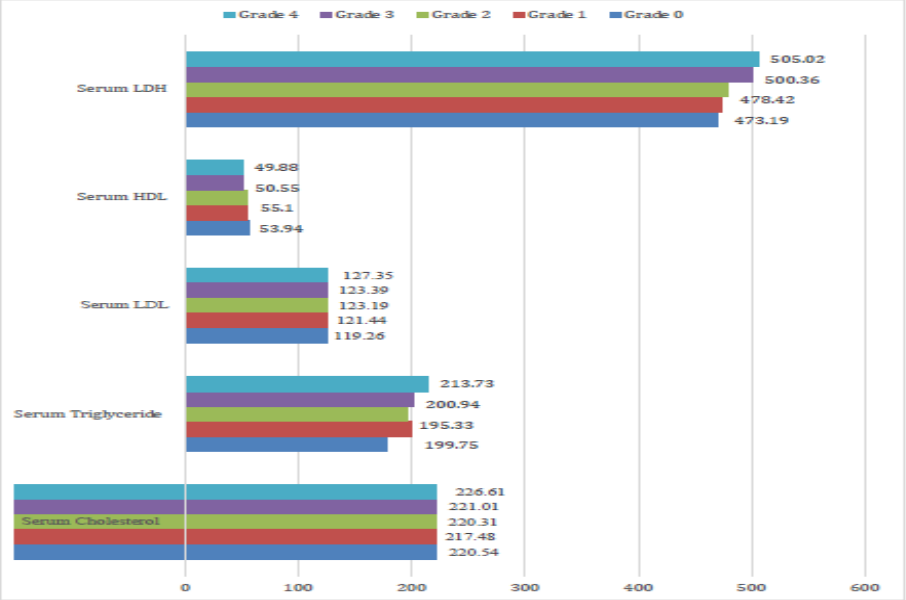

Fig 3: Comparison of *madyapana* with serum lipid profile.

Table no 4: Comparison of *medanatibhakshanat* with serum lipid profile.

	Grade 0	Grade 1	Grade 2	Grade 3	Grade 4	F value	p value
N	94	21	52	97	236		
Serum Cholesterol	216.77 (38.80)	220.50 (41.64)	222.15 (38.93)	222.37 (39.99)	226.58 (33.95)	3.12	<0.05
Serum Triglyceride	206.41 (93.53)	172.50 (47.51)	181.04 (70.33)	197.07 (83.34)	235.75 (87.86)	5.24	<0.05
Serum LDL	121.81 (37.29)	118.43 (31.71)	123.84 (32.44)	127.60 (37.36)	136.48 (33.51)	3.4	<0.05
Serum HDL	54.86 (32.11)	51.61 (14.95)	52.17 (13.68)	53.28 (14.87)	47.01 (10.86)	0.748	>0.05
Serum LDH	475.97 (126.85)	503.46 (126.16)	482.34 (156.8)	478.35 (139.25)	514 (138.06)	0.826	>0.05

The P-value (<0.05) indicates a significant difference in serum triglycerides, cholesterol, and LDL across grades of *Medanatibhakshanat*. Serum cholesterol, triglycerides, LDL, and LDH were highest in Grade 4, while HDL was highest in Grade 0. Serum triglycerides and LDL were lowest in Grade 1.

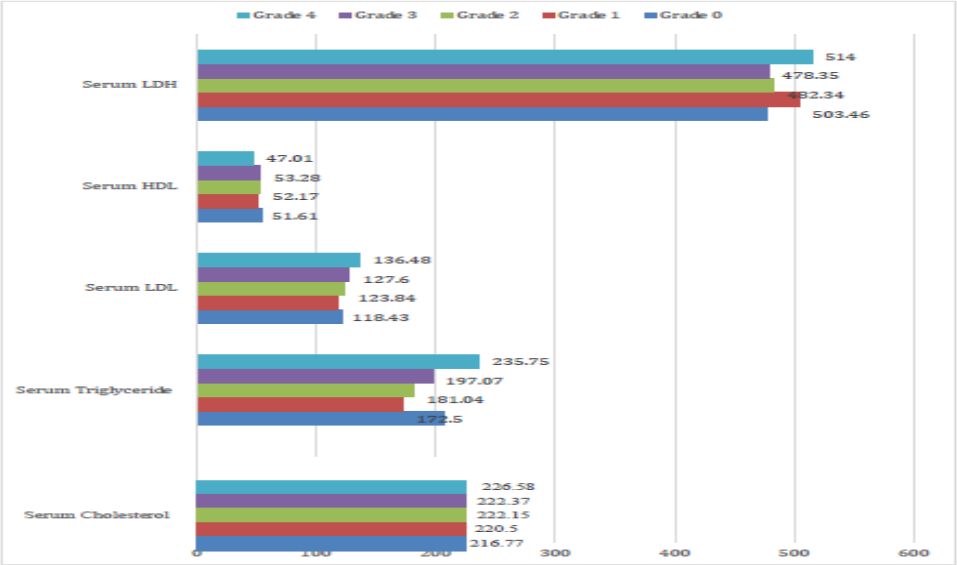

Fig. 4: Comparison of *medanatibhakshanat* with serum lipid profile.

Table no. 5: Comparison of *viruddha ahara* with serum lipid profile.

	Yes	No	F value	p value
N	264	236		
Serum Cholesterol	219.66 (38.68)	220.94(40.13)	0.133	>0.05
Serum Triglyceride	226.01(78.17)	205.91(92.62)	3.91	<0.05
Serum LDL	123.20(34.65)	122.05(33.22)	0.142	>0.05
Serum HDL	54.25(26.66)	54.28(13.71)	0.01	>0.05
Serum LDH	488.17(135.51)	478.30(141.04)	0.636	>0.05

From above table we can observe that P-Value was less than 0.05 in serum triglyceride. Hence, we conclude that there was significant difference in mean values of serum triglyceride in individuals having *Viruddhaahara*.

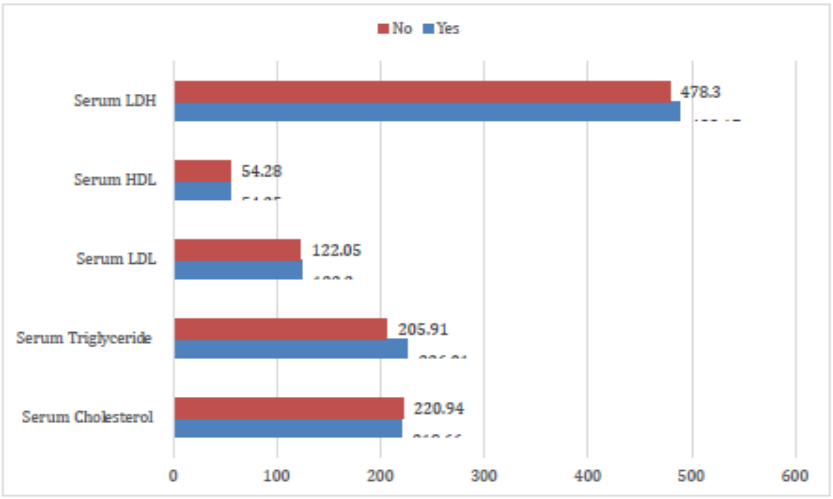

Fig. 5: Comparison of comparison of *viruddhaahara* with serum lipid profile.

Table no. 6: Comparison of *adhyasana* with serum lipid profile.

	Yes	No	F value	p value
N	452	48		
Serum Cholesterol	220.46(39.88)	218.42(34.17)	0.117	>0.05
Serum Triglyceride	218.50(107.73)	198.50(82.73)	3.89	<0.05
Serum LDL	122.53(33.95)	123.85(34.33)	0.06	>0.05
Serum HDL	54.45(21.82)	52.51(18.53)	0.352	>0.05
Serum LDH	485.62(138.16)	453.67(137.39)	4.25	<0.05

From above table we can observe that P-Value was less than 0.05 in serum triglyceride and serum LDH. Hence, we conclude that there was significant difference in mean values of serum triglyceride and Serum LDH in individuals having *Adhysana.*

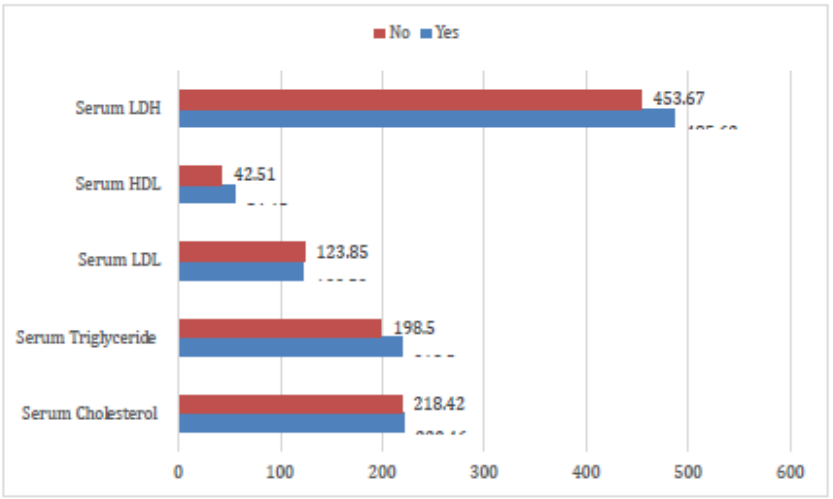

Fig 6: Comparison of comparison of *adhyasana* with serum lipid profile.

Table No. 7: Comparison of *ajirna bhojana* with serum lipid profile.

	Yes	No	F value	p value
N	435	65		
Serum Cholesterol	235.53(40.17)	219.53(33.12)	4.10	<0.05
Serum Triglyceride	207.13(89.61)	200.33(84.74)	0.359	>0.05
Serum LDL	122.02(34.02)	126.93(33.46)	1.183	>0.05
Serum HDL	54.62(22.19)	51.89(16.26)	0.910	>0.05
Serum LDH	483.54(136.54)	483.35(151.40)	0.01	>0.05

From above table we can observe that P-Value was less than 0.05 in serum cholesterol. Hence, we conclude that there was significant difference in mean values of serum cholesterol in individuals having *Ajirna Bhojana.*

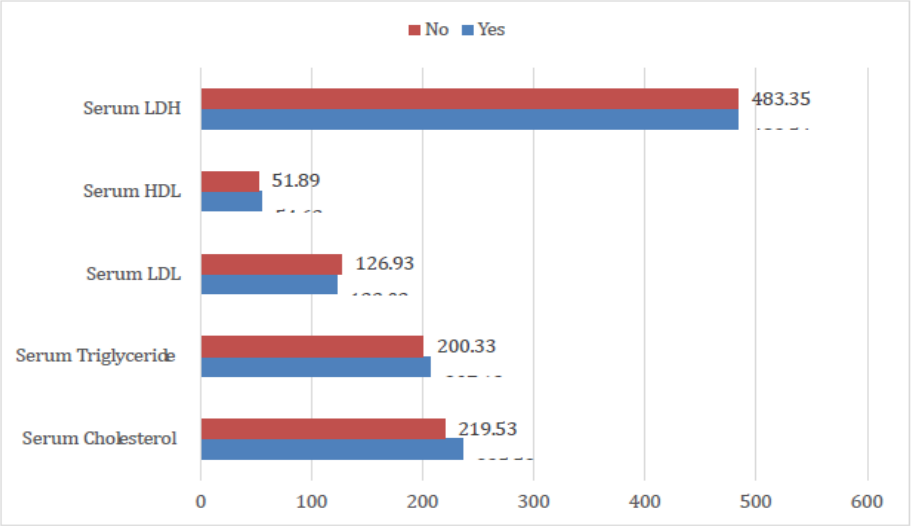

Fig 7: Comparison of comparison of *ajirna bhojana* with serum lipid profile.

Table no. 8: Comparison of *ati bhojana* with serum lipid profile.

	Yes	No	F value	p value
N	278	222		
Serum Cholesterol	232.22(39.68)	201.81(38.86)	4.26	<0.05
Serum Triglyceride	208.07(89.52)	175.73(81.57)	5.12	<0.05
Serum LDL	124.56(34.95)	110.27(32.58)	3.87	<0.05
Serum HDL	55.37(25.48)	52.88(14.00)	1.97	>0.05
Serum LDH	483.10(140.82)	484.04(134.52)	0.01	>0.05

The P-value (<0.05) indicates a significant difference in serum cholesterol, triglycerides, and LDL levels among individuals with Atibhojana.

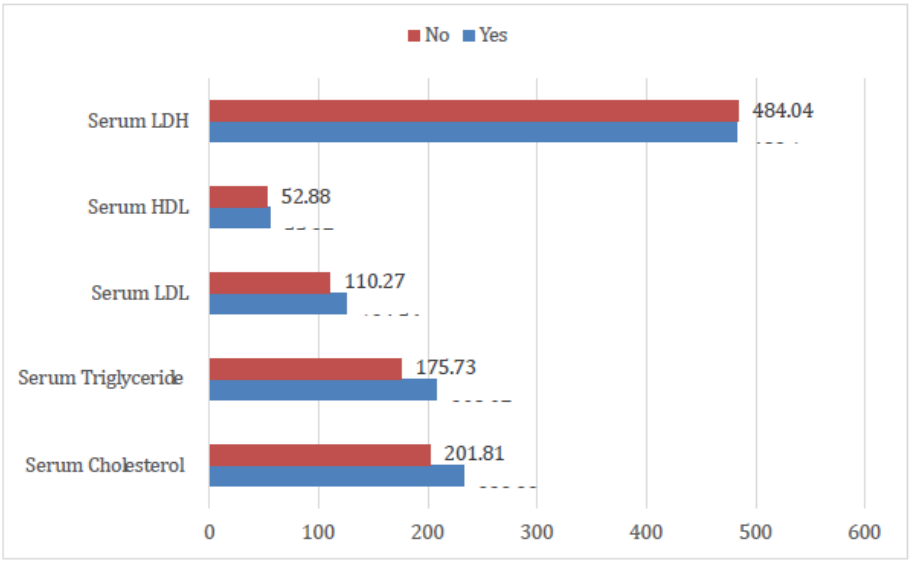

Fig. 8: Comparison of comparison of *ati bhojana* with serum lipid profile.

Table no 9: Comparison of fatty diet with serum lipid profile.

	N		Chol (mg/dl)	TGs (mg/dl)	HDL (mg/dl)	LDL (mg/dl)	LDH (U/L)
No	71	Mean	221.12	208.07	51.73	124.08	474.41
		Std. Deviation	39.36	100.75	13.68	34.56	134.20
Yes	429	Mean	240.12	240.07	34.69	122.42	485.02
		Std. Deviation	39.38	82.58	12.54	33.89	138.83

	F value	P value
Chol (mg/dl) * Fatty diet	4.65	<0.05
TGs (mg/dl) * Fatty diet	5.35	<0.05
HDL (mg/dl) * Fatty diet	4.1	<0.05
LDL(mg/dl) * Fatty diet	.145	.704
LDH (U/L) * Fatty diet	.359	.549

The P-value (<0.05) indicates a significant difference in serum cholesterol, triglycerides, and HDL levels among individuals consuming a fatty diet.

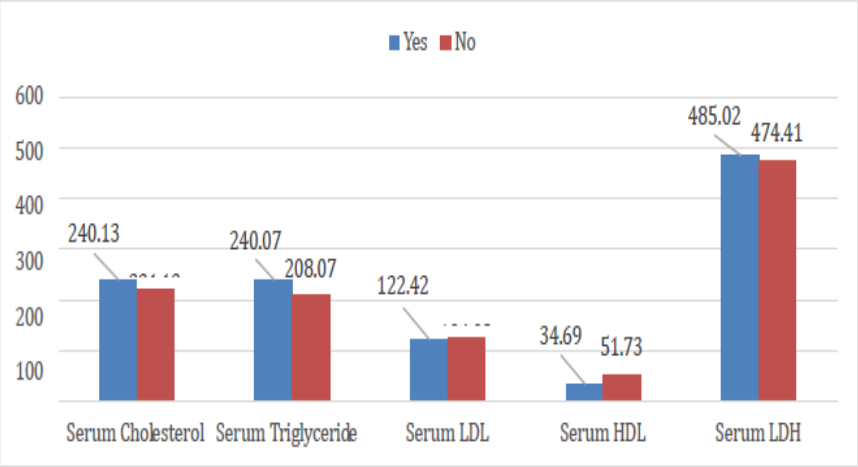

Fig. 9: Comparison of fatty diet with serum lipid profile.

Table no 10: Comparison of smoking with serum lipid profile.

	N		Chol (mg/dl)	TGs (mg/dl)	HDL (mg/dl)	LDL (mg/dl)	LDH (U/L)
No	344	Mean	216.82	195.72	55.230	123.80	477.54
		Std. Deviation	39.39	83.27	24.39	35.52	139.61
Yes	156	Mean	221.8	213.32	52.15	120.12	496.69
		Std. Deviation	39.13	88.75	12.95	30.16	134.21

	F value	P value
Chol (mg/dl) * Smoking	1.72	>0.05
TGs (mg/dl) * Smoking	4.60	<0.05
HDL (mg/dl) * Smoking	2.19	>0.05
LDL(mg/dl) * Smoking	1.26	>0.05
LDH (U/L) * Smoking	2.06	>0.05

The P-value (<0.05) indicates a significant difference in serum triglyceride levels among individuals who smoke.

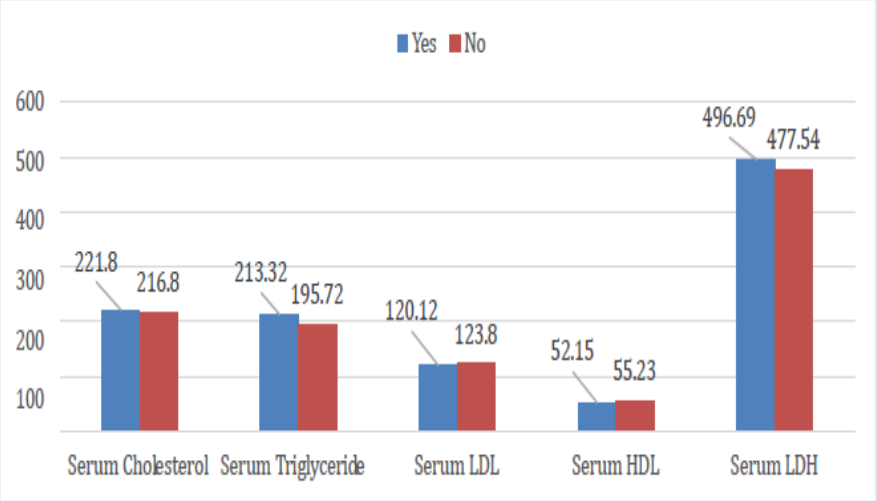

Fig. 10: Comparison of comparison of smoking with serum lipid profile.

Table no 11: Comparison of lack of exercise with serum lipid profile.

	N		Chol (mg/dl)	TGs (mg/dl)	HDL (mg/dl)	LDL (mg/dl)	LDH (U/L)
No	171	Mean	219.81	201.88	53.01	149.62	489.04
		Std. Deviation	38.94	79.95	13.15	30.92	139.13
Yes	329	Mean	240.50	219.86	41.92	184.23	480.64
		Std. Deviation	39.61	88.10	24.77	35.37	137.69

	F value	P value
Chol (mg/dl) * Lack of exercise	4.72	<0.05
TGs (mg/dl) * Lack of exercise	3.98	<0.05
HDL (mg/dl) * Lack of exercise	4.19	<0.05
LDL(mg/dl) * Lack of exercise	6.24	<0.05
LDH (U/L) * Lack of exercise	0.41	>0.05

The P-value (<0.05) indicates a significant difference in serum cholesterol, triglycerides, LDL, and HDL levels among individuals with a lack of exercise.

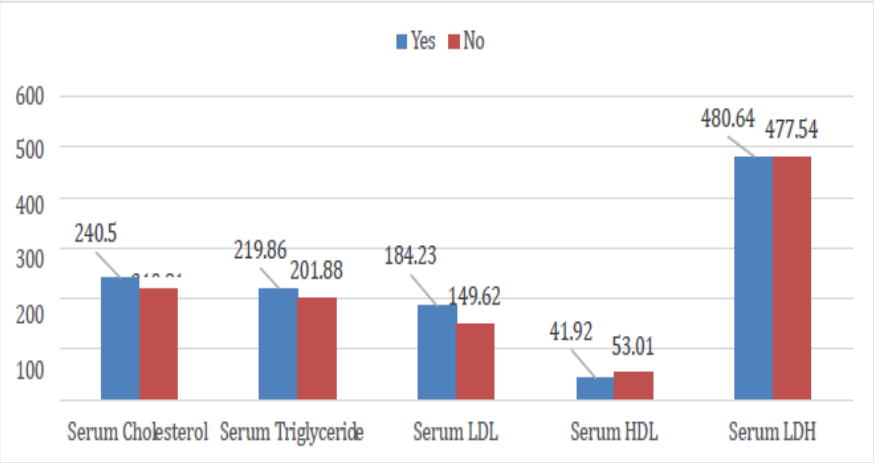

Fig. 11: Comparison of comparison of lack of exercise with serum lipid profile.

Table no. 12: Comparison of stress with serum lipid profile.

	N		Chol (mg/dl)	TGs (mg/dl)	HDL (mg/dl)	LDL (mg/dl)	LDH (U/L)
No	65	Mean	218.18	207.61	53.76	117.06	479.35
		Std. Deviation	39.63	88.89	16.79	29.25	130.01
Yes	435	Mean	239.58	226.25	54.34	133.49	484.14
		Std. Deviation	39.33	84.84	22.15	34.55	139.40

	F value	P value
Chol (mg/dl) * STRESS	5.3	<0.05
TGs (mg/dl) * STRESS	4.3	<0.05
HDL (mg/dl) * STRESS	0.04	>0.05
LDL(mg/dl) * STRESS	4.03	<0.05
LDH (U/L) * STRESS	0.06	>0.05

The P-value (<0.05) indicates a significant difference in serum cholesterol, triglycerides, and LDL levels among individuals experiencing stress.

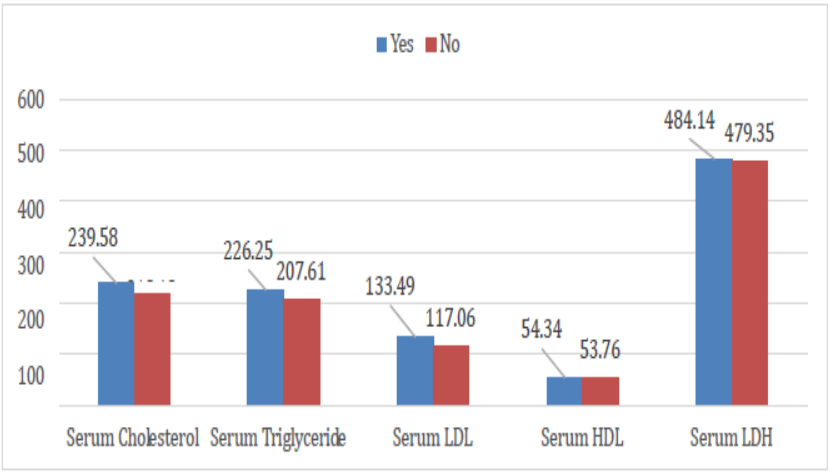

Fig. 12: Comparison of comparison of stress with serum lipid profile.

Table no 13: Comparison of family history with serum lipid profile.

	N		Chol (mg/dl)	TGs (mg/dl)	HDL (mg/dl)	LDL (mg/dl)	LDH (U/L)
No	238	Mean	220.50	194.96	52.96	122.67	482.51
		Std. Deviation	36.82	83.32	14.30	33.29	136.64
Yes	262	Mean	220.05	216.89	45.56	132.54	484.43
		Std. Deviation	41.57	86.87	24.23	33.14	139.67

	F value	P value
Chol (mg/dl) * Family history	0.01	>0.05
TGs (mg/dl) * Family history	5.12	<0.05
HDL (mg/dl) * Family history	3.2	<0.05
LDL(mg/dl) * Family history	2.8	<0.05
LDH (U/L) * Family history	0.02	>0.05

The P-value (<0.05) indicates a significant difference in serum triglycerides, LDL, and HDL levels among individuals with a family history of dyslipidemia.

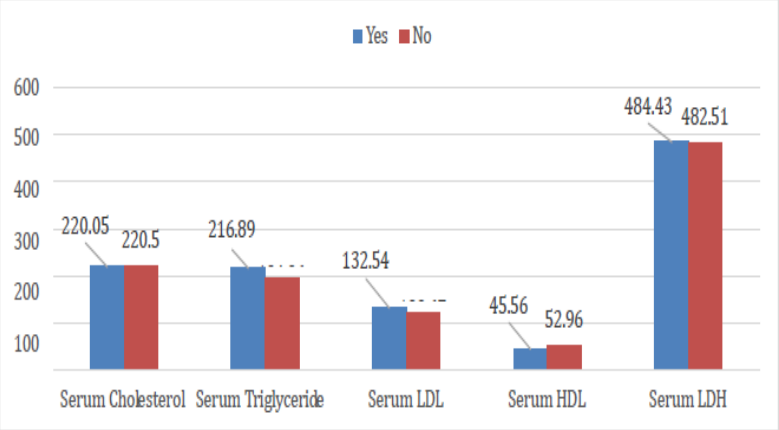

Fig. 13: Comparison of comparison of family history with serum lipid profile.

Table no. 14: Association of *atisthaulaya lakshana* with dyslipidemia.

Lakshana	**Never (Grade 0)**	**Rarely (Grade 1)**	**Occasionally (Grade 2)**	**Sometimes (Grade 3)**	**Always (Grade 4)**	**Chi-Square**	**P value**
Javaavrodha	4	14	69	249	164	548.37	<0.05
Kricchavyavayata	207	81	117	69	26	8.64	>0.05
Daurbalaya	0	17	57	266	160	398.8	<0.05
Daurgandhya	31	33	130	192	114	235.1	<0.05
Swedabadha	07	25	97	195	176	363.5	<0.05
Kshutaatimatra	4	20	103	196	177	310.7	<0.05
Pipasaati	6	24	99	185	186	365.4	<0.05
Snigadhangta	31	31	91	214	133	296.1	<0.05
Talushosha	45	34	217	115	89	267.7	<0.05
Shopha	159	70	149	90	32	143.82	<0.05

The statistical analysis showed significant associations between dyslipidemia and the following Lakshanas: Javapavrodha, Daurbalaya, Daurgandhya, Swedaavbadha, Kshutaatimatra, Pipasaati, Snigadhangta, and Talushosha, with higher numbers of dyslipidemic individuals showing these Lakshanas. However, no significant association was found with Lakshanas Kricchavyavayata and Shopha.

Table no. 15: Association of ama *lakshana* with dyslipidemia.

Lakshana	Never (Grade 0)	Rarely (Grade 1)	Occasionally (Grade 2)	Sometimes (Grade 3)	Always (Grade 4)	Chi-square	P value
स्रोतोरोध	6	14	78	273	129	593.5	<0.05
बलभ्रंश	6	9	63	277	145	648	<0.05
गौरव	2	11	38	245	204	665.1	<0.05
अनिलमूढता	87	27	142	177	67	178.5	<0.05
आलस्य	00	18	63	236	183	312.8	<0.05
अपक्ति	27	26	148	216	83	335.6	<0.05
निष्ठीव	282	37	109	59	13	583.4	<0.05
मलसङ्ग	12	28	74	201	185	387.8	<0.05
अरुचि	8	15	136	251	185	498.5	<0.05
क्लम	12	19	147	226	96	405.1	<0.05

The statistical analysis showed significant associations between dyslipidemia and the following Lakshanas: Srotorodha, Balabhrnasha, Gaurava, Anilmudhta, Alasya, Apakti, Malasanga, Aruchi, and Klama, with higher numbers of dyslipidemic individuals showing these Lakshanas. However, no significant association was found with Lakshana Nishtivana.

Table no. 16: Association of poorvaroopa of prameha with dyslipidemia.

Lakshana	Yes	No
जटिलीभवं केशे	53(10.6%)	447(89.4%)
माधुर्यमास्यस्य	236(47.2%)	264(52.8%)
करपादयो सुप्ततादाहो	384(76.8%)	116(23.2%)
मुखतालुकण्ठशोष	374(74.8%)	126(25.2%)
पिपासा	474(94.8%)	26(5.2%)
आलस्य	96(19.2%)	404(81.8%)
मलं कायं, कायच्छिद्रेषुपदाह	294(59.8%)	206(41.2%)
परिदाहं सुप्ततां चाङ्गेषु	84(16.8%)	416(83.2%)
पदपिपीलिकाभिश्च शरीरमभिसरणं,	150(30%)	350(70%)
मूत्रे च मूत्रदोषान	389(77.8%)	111(22.2%)

The data showed that maximum study participants showed symptoms of *Karpadayo suptatadaha*, *Mukhtalukantha shosha*, *Alasya*, *Paridaha suptata cha angeshu* and *Tandra/Nidra.*

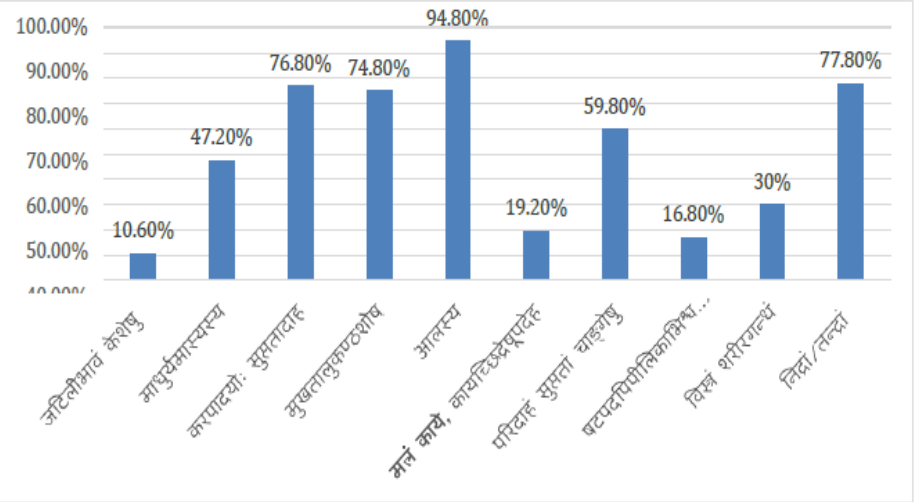

Fig. 16: Association of poorvaroopa of prameha with dyslipidemi.

Table no 17: Association of ashta nindita purusha symtpoms with dyslipidemia.

Lakshana	**Yes**	**No**
अतिदीर्घ	32(6.4%)	468(93.6%)
अति–ह्रस्व	22(4.4%)	478(95.6%)
अतिलोमा	93(18.6%)	407(81.4%)
अलोमा	35(07%)	465(93%)
अतिकृष्ण	14(2.8%)	486(97.2%)
अतिगौर	62(12.4%)	438(87.6%)
अतिस्थूल ठडप्झ 30	290(58%)	210(42%)
अतिकृश ठडप ढ30	03(0.6%)	497(99.4%)

The data showed that maximum study participants didn't showed symptoms of *Asthanindita Purusha*. Only 58% of the study participants were under the *Atisthula Lakshana.*

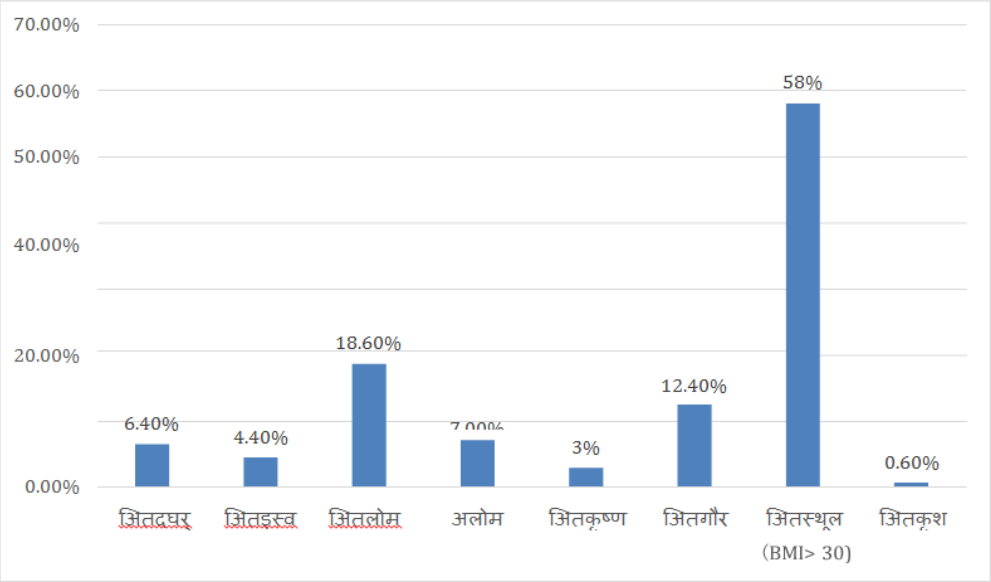

Fig. 17: Association of ashta nindita purusha symtpoms with dyslipidemia.

Table no. 18: Association of associated disorders with dyslipidemia.

Disorders	Yes	No
Diabetes	329(65.8%)	171(34.2%)
Hypothyroidism	215 (43%)	285(57%)
Obesity	359(71.8%)	141(29.2%)
Hypertension	367(73.4%)	133(26.6%)
Xanthomatosis	430(86%)	70(14%)
Kidney disease	33(6.6%)	467(93.4%)
Fatty liver	261(52.2%)	239(47.8%)
Heart disease	110(22%)	390(78%)
PCOD	44(8.8%)	456(91.2%)
Cushing syndrome	00	500(100%)

The data showed that 86% had xanthomatosis, 73.4% had hypertension, 71.8% had obesity, 65.8% had diabetes, 43% had hypothyroidism, 52.2% had fatty liver disease, 22% had heart disease, 8.8% had PCOD, 6.6% had kidney disease, and none had Cushing's syndrome.

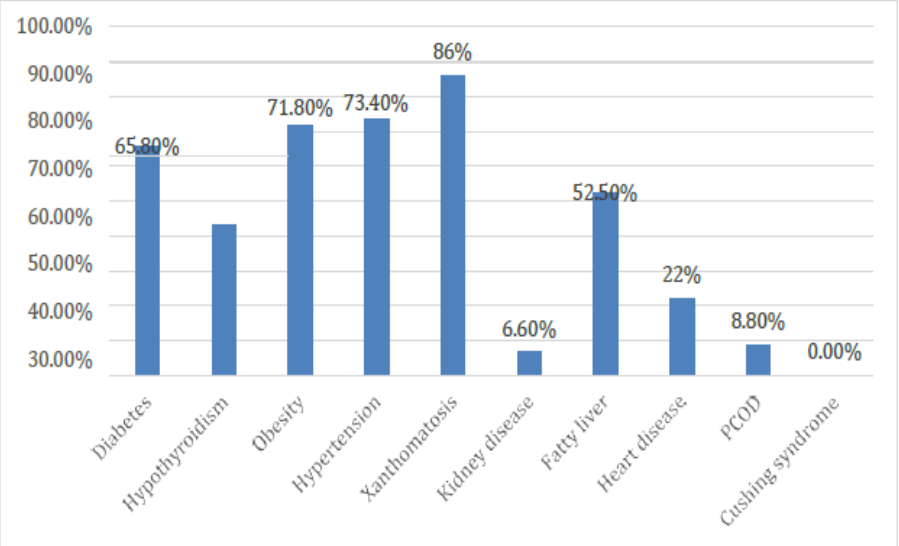

Fig. 18: Association of associated disorders with dyslipidemia.

DISCUSSION

Disease overview

- Dyslipidemia & Metabolic Disorders: A key risk factor for heart diseases, it leads to atherosclerosis and hypertension.
- Pathogenesis: Influenced by lipid levels, genetics, and hormonal changes, especially in post-menopausal women.
- Ayurvedic View: Dyslipidemia is linked to Medoroga, an imbalance in lipid metabolism, emphasizing lifestyle changes.

RESULTS AND DISCUSSION

Medovaha sroto dushti causes

- Exercise: Lack of exercise linked to higher lipid levels.
- Daytime sleep: Excess sleep raised cholesterol and triglycerides.
- Alcohol: Heavy drinking increased triglycerides.
- Diet: High unhealthy fats increased LDL and triglycerides.

  Aam causes:
- Incompatible Foods & Overeating: Led to poor lipid profiles.

  Risk factors:
- Diet, Smoking, Exercise, Stress, Family History: All contributed to dyslipidemia development.

Key findings

- Symptoms: Fatigue, weakness, and excessive thirst linked to dyslipidemia.
- Associated Disorders: High prevalence of obesity, diabetes, hypertension, fatty liver, and heart disease.

CONCLUSION

- Dyslipidemia is linked to Medovaha Srotas Dushti and Ama, offering Ayurvedic insights into its management.
- Age, gender, lifestyle, and genetics are significant contributors.
- Lifestyle changes like diet, exercise, and stress management are crucial for prevention.

Limitations

- No control group, small sample size, and subjectivity in Ayurvedic diagnosis limit generalization.

Recommendations

- Further studies with control groups and case-control research to validate Ayurvedic concepts in dyslipidemia.

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