

A STUDY TO ASSESS THE KNOWLEDGE REGARDING HYPERLIPIDEMIA AMONG PERIPHERAL ARTERIAL DISEASE WITH HYPERLIPIDEMIC PATIENTS ATTENDING OPDS OF SELECTED HOSPITAL, COIMBATORE

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Abstract

Introduction: Cholesterol is a hydrophobic compound that is vital for human survival. Cholesterol serves as a precursor molecule in the manufacture of vitamin D, steroid hormones, and sex hormones. Elevated levels of total cholesterol significantly contribute to the overall burden of illness in both developed and developing countries, serving as a prominent risk factor for ischemic heart disease and stroke. According to a 2008 estimate by the World Health Organisation (WHO), the worldwide occurrence of elevated total cholesterol in adults was 39%, with 37% for men and 40% for females. Hyperlipidemia is recognised as a significant contributing factor to Cardiovascular Disease (CVD). Cardiovascular diseases (CVDs) comprise about one third of all global fatalities. It is anticipated that CVDs will become the leading cause of mortality and disability globally. Peripheral Arterial Disease (PAD) is one of the cardiovascular diseases (CVDs). PAD, sometimes referred to as "poor circulation" or "arteriosclerosis", is a common term used to describe the condition of reduced blood flow in the arteries. Peripheral artery disease (PAD) is characterised by the obstruction of the arteries that provide blood to the lower limbs. Atherosclerosis, a persistent systemic disease, is the primary culprit. Ankle brachial pressure index (ABI) is often used to identify this condition. A value of less than 0.90 on the Ankle-Brachial Index (ABI) is indicative of Peripheral Arterial Disease.

Objective: The objectives of the study were to assess the level of knowledge on hyperlipidemia among PAD patients with hyperlipidemia attending OPD's and to associate the level of knowledge on hyperlipidemia among PAD patients attending OPD's with the selected demographic and clinical variables.

Materials and Methods: A descriptive study was conducted using purposive sampling technique. A structured knowledge questionnaire was used to assess PAD patients' level of knowledge regarding hyperlipidemia.

Conclusion: From the analysis it is concluded that the selected population having inadequate knowledge about Hyperlipidemia.

Keyword: Peripheral Arterial Disease, Hyperlipidemia, cholesterol, lipophilic molecule, Out Patient Department, structured knowledge questionnaire

INTRODUCTION

Hyperlipidemia is defined as an increase in the levels of cholesterol, cholesterol esters, phospholipids, or triglycerides. Deviation from normal levels of plasma lipids may lead to an increased susceptibility to coronary, cerebrovascular, and peripheral artery disease. The liver is responsible for the predominant presence of cholesterol in the bloodstream. The liver synthesises around 80% of the body's cholesterol, while the remaining cholesterol is derived from dietary sources such as fish, eggs, and meat¹. The primary challenge in managing hyperlipidemia is its containment. The occurrence of organ system damage may not exhibit any symptoms. Therefore, it is

crucial to emphasise the necessity of screening to promote infrequent contact. This involves conducting a "lipid profile" test to detect cholesterol and triglyceride levels. It is recommended to do regular lipid screening for males when they reach the age of 35, and for females when they reach the age of 45. The components of it consist of High Density Lipoproteins, Low Density Lipoproteins, triglycerides, and total cholesterol. Hyperlipidemia is recognised as a significant risk factor for the development of cardiovascular disease. Hyperlipidemia and hypertriglyceridemia are the primary factors contributing to the development of atherosclerosis, a condition closely associated with ischemic heart disease. There is a significant correlation

between ischemic heart disease and the elevated mortality rate. In addition, an increased amount of cholesterol in the bloodstream leads to about four million deaths annually. Hyperlipidemia triggers atherosclerosis by disrupting the usual balance of the endothelium and vascular wall. Those with peripheral artery disease (PAD) have a dislipidemia pattern that closely resembles that of those with metabolic syndrome, characterised by reduced levels of high-density lipoprotein (HDL) and increased levels of triglycerides. Based on the findings of the PARTNERS (PAD Awareness, Risk and Treatment: New Resources for Survival) Programme, the prevalence of hyperlipidemia in individuals with PAD was reported to be as high as 77%. Research has shown that there is a 10% higher chance of developing Peripheral Arterial Disease (PAD) for every 0.259mmol/L increase in total cholesterol⁵.

Thus, it is understood that hyperlipidemia is a significant issue that results in higher rates of illness and death, perhaps owing to a lack of public knowledge on the several risk factors contributing to hyperlipidemia.

MATERIALS AND METHODS

We performed a descriptive research using purposive sampling on 100 patients with Peripheral Artery Disease (PAD) who visited the Cardiology and Diabetology Outpatient Departments (OPDs) at KG Hospital. The study was done over a period of 6 months, from October 2022 to March 2023, and data was collected throughout this time. We have received ethical approval from the Institute Ethics Committee. Patients who were diagnosed with peripheral arterial disease (PAD) and had hyperlipidemia and were over the age of 35 were included. Prior to the trial, patients were provided with detailed information about the study's goals and the protection of their data. They then provided written permission, demonstrating their understanding and agreement.

TABLE 1: DISTRIBUTION OF DEMOGRAPHIC VARIABLES OF PAD PATIENTS WITH HYPERLIPIDEMIA ON KNOWLEDGE REGARDING HYPERLIPIDEMIA.

n = 100

S. No.	Demographic Variables	No. Of People	Percentage
1	Age in years		
	a) 35-45	15	15%
	b) 46-55	33	33%
	c) 56-65	32	32%
2	Gender		
	a) Male	62	62%
	b) Female	38	38%
3	Educational level		
	a) No formal education	13	13%
	b) Primary education	30	30%
	c) Secondary school	35	35%
	d) Under graduate	14	14%
4	Employment status		
	a) Employed (full time)	43	43%
	b) Employed (part time)	17	17%
	c) Unemployed	15	15%
	d) Housewife	13	13%
	e) Retired	10	10%
	f) Student	2	2%

5	Marital status		
	a) Married	94	94%
	b) Divorced	4	4%
	c) Separated	-	-
	d) Widow	-	-
6	Family income		
	a) <10,000/-	33	33%
	b) 10,001-20,000/-	41	41%
	c) 20,001-30,000/-	13	13%
7	Religion		
	a) Hindu	90	90%
	b) Christian	7	7%
	c) Muslim	3	3%
8	Place of Residence		
	a) Urban	58	58%
	b) Rural	35	35%
	c) Semi urban	7	7%
9	Working Mobility		
	a) Sedentary	25	25%
	b) Moderate worker	72	72%
10	Source of Information		
	a) Physician/Nurse	48	48%
	b) Internet	21	21%
	c) Media	10	10%
	d) Friends	6	6%
	e) Symposium/Lectures	1	1%
	f) Newspapers/Magazines	14	14%

TABLE 2: DISTRIBUTION OF CLINICAL VARIABLES OF PAD PATIENTS WITH HYPERLIPIDEMIA ON KNOWLEDGE REGARDING HYPERLIPIDEMIA.

n = 100

S. No	Clinical variables	No. of people	Percentage
1	BMI		
	a) <18.5 kg/m2	15	15%
	b) 18.5-29.9 kg/m2	58	58%
	c) 25-29kg/m2-	26	26%
2	Comorbid illness		
	a) Diabetes Mellitus	44	44%
	b) Hypertension	50	50%
	c) Bronchial Asthma	3	3%
3	Smoking status		
	a) No smoking	77	77%
	b) Ex-smoker	20	20%
	c) Current smoker	3	3%
4	Consumption of alcohol		
	a) Yes	20	20%
5	Fasting Lipid Profile-HDL		
	a) No risk	40	40%
	b) Moderate risk	1	1%
	c) High risk	59	59%

The demographic features of the patients were shown in Table 1, which included data from 100 patients. 33% of the individuals

are within the age range of 46-55 years, while 32% are aged between 56-65 years. The bulk of the patients are male. Regarding the educational status, 13% of the samples had not received any formal education, 30% had successfully finished elementary education, and 35% had successfully completed secondary school. 43% of the samples consisted of individuals who were employed on a full-time basis. The marital status of 94% of the samples was married. 41% of the individuals had an income ranging from Rs 10,001 to Rs 20,000. 58% of the individuals were living in urban areas. In terms of working mobility, 25% of individuals were classified as sedentary workers, 72% were categorised as moderate workers, and 3% were classified as heavy workers. Regarding the source of knowledge, 43% of individuals obtained information on Hyperlipidemia from healthcare professionals such as physicians or nurses. Table 2 displays the distribution of clinical characteristics among individuals with Peripheral Artery

Disease (PAD) who also have Hyperlipidemia. In relation to the Body Mass Index (BMI) 15% of the samples had a BMI below 18.5kg/m2, 58% had a BMI between 18.5-29.9kg/m2, 26% had a BMI between 25-29kg/m2, and 1% had a BMI over 30kg/m2. With respect to comorbidities, 44% of the individuals had Diabetes Mellitus, 50% had hypertension, 3% had bronchial asthma, and 3% had other medical disorders. Regarding smoking status, 77% of individuals were non-smokers, 20% were former smokers, and 3% were current smokers. In terms of alcohol intake, 20% of the individuals were classified as alcoholic, while the remaining 80% were categorised as non-alcoholic. 59% of the samples had low levels of HDL. A decreased concentration of high-density lipoprotein (HDL) is one of the most significant risk factors for peripheral artery disease (PAD). The Framingham Offspring Study found that for every 5 mg/dL drop in HDL-C, there was a 10% higher chance of developing PAD6.

TABLE 3: DISTRIBUTION OF KNOWLEDGE REGARDING HYPERLIPIDEMIA AMONG PAD PATIENTS WITH HYPERLIPIDEMIA
n = 100

SL. NO.	KNOWLEDGE SCORE	ADEQUATE KNOWLEDGE		MODERATELY ADEQUATE KNOWLEDGE		INADEQUATE KNOWLEDGE	
		≥ 75%		51-74%		≤50%	
		No	%	No	%	No	%
I.	Definition	43	43%	-	-	57	57%
II.	Type of Cholesterol	5	5%	15	15%	80	80%
III.	Normal Values	1	1%	24	24%	75	75%
IV.	Causes and clinical manifestations of hyperlipidemia	5	5%	21	21%	74	74%
V.	Recognition of complication	51	51%	-	-	49	49%
VI.	Pharmacological management	27	27%	-	-	73	73%
VII.	Healthy lifestyle	4	4%	27	27%	69	69%

Table 3 displays the distribution of knowledge of several elements of hyperlipidemia among individuals with peripheral artery disease (PAD) who also have hyperlipidemia. Regarding the definition, 43% of patients possess sufficient knowledge, whereas 57% lack sufficient understanding. 80% of individuals lack sufficient understanding about the many forms of cholesterol. 75% of the individuals had insufficient information about typical values. Approximately 74% of individuals lack sufficient understanding regarding the aetiology and clinical symptoms of Hyperlipidemia. 49% of individuals lack sufficient understanding about the identification of complications. 73% of individuals had insufficient understanding about pharmaceutical management. Ultimately, 69% of individuals possess insufficient understanding about a healthy lifestyle.

TABLE 4 shows an overall knowledge regarding hyperlipidemia. It was found that 21% of the patients have moderately adequate knowledge and 79% of them have inadequate knowledge regarding Hyperlipidemia. TABLE 5 shows an association between the level of knowledge scores of PAD with hyperlipidemia patients on hyperlipidemia with the selected demographic & clinical variables. The results showed that there was an association between the place of residence, occupation and the level of knowledge scores.

TABLE 4: OVERALL KNOWLEDGE SCORES OF HYPERLIPIDEMIA AMONG PAD PATIENTS WITH HYPERLIPIDEMIA
n = 100

S. NO	Adequate knowledge	Moderately Adequate knowledge	Inadequate knowledge
Overall knowledge scores	-	21%	79%

TABLE 5: ASSOCIATION BETWEEN THE LEVEL OF KNOWLEDGE SCORES OF PAD WITH HYPERLIPIDEMIA PATIENTS ON HYPERLIPIDEMIA WITH THE SELECTED DEMOGRAPHIC & CLINICAL VARIABLES**n = 100**

S. NO	DEMOGRAPHIC VARIABLES	LEVEL OF KNOWLEDGE		CALCULATED VALUE OF χ^2	TABULATED VALUE OF χ^2
		Below mean ≤ 12	Above mean > 12		
1	Age				3.84
	a) ≤ 55 years	24	23	>1	
	b) >55 years	25	28	NS	
2	Gender				
	a) Male	31	29	>1	
	b) Female	18	22	NS	
3	Education				
	a) Uneducated	10	5	1.45	
	b) Educated	39	46	NS	
4	Occupation				
	a) Employed	42	28	9.33	
	b) Unemployed	8	22	S	
5	Income				
	a) $\leq 20,000/-$	41	35	1.82	
	b) $>20,000/-$	9	15	NS	
6	Marital status				
	a) Married	50	47	1.37	
	b) Unmarried	-	3	NS	
7	Place of residence				
	a) Urban	41	27	7.34	
	b) Rural	10	22	S	
8	Source of information				
	a) Physician/ Nurse	29	26	0.14	
	b) Media	22	23	NS	
9	CLINICAL VARIABLE				
	BMI	37	34	1.21	
	a) ≤ 18.5	14	15	NS	
	b) >18.5				

CONCLUSION:

This research aims to assess the awareness level of Hyperlipidemia among individuals with Peripheral Artery Disease (PAD) who also have Hyperlipidemia. The study and findings indicate that the chosen demographic lacks sufficient information regarding Hyperlipidemia. These results emphasise the need of implementing an awareness programme to educate individuals about hyperlipidemia. Frequently, people get unwell due to their lack of awareness about the impact and magnitude of their lifestyle choices on their health. Typically, when individuals encounter the phrase cholesterol, they commonly assume that it is detrimental to their well-being. Many people ignore the significance of cholesterol assessment since it cannot be immediately seen on a weighing scale. It is crucial to educate these folks about the intricate equilibrium that has to be maintained between high-density lipoproteins and low-density lipoproteins, rather than completely removing cholesterol from the diet or underestimating the impact of excessive cholesterol levels on the body.

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