

Frequency of Hyperlipidemia in Patients Present with Erectile Dysfunction

Hyperlipidemia in
Patients with Erectile
Dysfunction

Naresh Kumar Valecha, Shahzad Ali, Saeed Ahmad Khan, Liaquat Ali, Mohammad Mansoor and Shahid Hussain

ABSTRACT

Objective: To determine the frequency of hyperlipidemia in patients present with erectile dysfunction (ED) at tertiary care hospital, Karachi.

Study Design: Descriptive Cross-Sectional Study

Place and Duration of Study: This study was conducted at the department of Urology, JPMC, Karachi from January, 2020 to December, 2020 for a period of year.

Materials and Methods: All married male from age 40 to 85 years age, who presented in outpatient clinic and fulfilled inclusion criteria were included in the study. Brief history was taken and their erectile dysfunction was assessed by IIEF-5 Questioner. Fasting serum Lipid profile was sent of all the patients and serum TG levels > 150mg/dl were taken as a reference for diagnosing the hyperlipidemia. Associated risk factors for ED such as diabetes mellitus, high blood pressure, Coronary artery disease (CHD) smoking, Triglyceride Level and obesity were noted.

Results: Total 171 married male patients were included in this study with the mean age of 65.45 ± 12.41 years ranging from 45 to 85 years. Their mean SBP and DBP were 153.04 ± 21.26 mmHg & 83.78 ± 13.7 mmHg while their mean BMI was 30.99 ± 7.11 Kg/m². Their Serum fasting lipid profile like total Cholesterol, TGL, LDL, HDL, and VLDL was 157.61 ± 48.48 , 106.26 ± 38.87 , 93.02 ± 36.73 , 39.66 ± 13.98 & 24.39 ± 13.34 were noted. CAD was seen in 51 (31%) patients. In 40(23.4%) patients TG levels were found to be higher.

Conclusion: Hyperlipidemia is common in ED patients. These patients have a high risk of later developing CHD. Erectile dysfunction might therefore serve as sentinel event for coronary heart disease. In conclusion, we report a high prevalence of hyperlipidemia in men presenting with ED. The opportunity to screen for, diagnose and treat these and other cardiovascular risk factors at the time of assessment for ED has potential long-term benefits in this group of patients.

Key Words: Erectile dysfunction, Hyperlipidemia

Citation of article: Valecha NK, Ali S, Khan SA, Ali L, Mansoor M, Hussain S. Frequency of Hyperlipidemia in Patients Present with Erectile Dysfunction. Med Forum 2021;32(12):15-18.

INTRODUCTION

Erectile dysfunction (ED), also called as insufficient penile erection, is leading sexual disorder in male.¹ ED is defined as inability to achieve or maintain penile erection to have good satisfactory vaginal intercourse.² Its prevalence is higher and 40% of the population is affected with ED.³ It has been observed that it increase with age affecting male > 40 years mainly.⁴

Department of Urology, Jinnah Postgraduate Medical Centre (JPMC), Karachi.

Correspondence: Dr. Naresh Kumar Valecha, Associate Professor of Urology, Jinnah Postgraduate Medical Centre (JPMC), Karachi.

Contact No: 03362831550

Email: valechanares74@gmail.com

Received: August, 2021

Accepted: October, 2021

Printed: December, 2021

In reported previous literature, ED was to be higher in United States and Asia when compared to rest of the world.⁵ It has been estimated that out of 322 million, about 200 million males will suffer from ED only in Asia by 2025.^{6,7,8}

This will cause too much burden over the health care system as well as economically. Factors which result in ED may be psychogenic and organic. Rigid erection at any sexual thought night or morning, while unable to attain erection at time of intercourse is purely directed mostly for psychogenic ED (PED). PED mainly present with sudden onset or short course of time while on contrary patient with organic ED (OED) mostly comes with slow and progressive course and long duration.² ED is found to be associated with numerous endocrine and metabolic conditions like Type 2 DM, hyperlipidemia, insulin resistance, metabolic syndrome and testosterone deficiency.^{9,10} Patients with ED may have decreased quality of life and high risk of depression and weakened psychological health.¹¹ ED is now being used as marker for Coronary Artery Disease (CAD).² Hyperlipidemia may be caused by

excessive use of cholesterol rich diet or any congenital disease(Metabolic error). In literature, it is evident that hyperlipidemia is associated with ED.^{12,13} Hyperlipidemia is strongly correlated with ED since for each rise in one mmol/L of serum cholesterol results in decrease in erectile function by 32%.¹⁴ The aim of this study is to determine the frequency of hyperlipidemia in patients with ED in the local population which will help the clinicians in managing the patients with ED having raised serum lipid levels.

MATERIALS AND METHODS

This descriptive cross sectional study was conducted at department of Urology, JPMC, Karachi from 01-01-2020 to 31-12-2020. After taking approval from institutional review board committee. All male patients in between the age of 40 – 85 years, who had ED and having fasting serum Triglyceride level greater than 150 mg/dl were included in present study. Patients who were on psychotic medicine, lipid lowering agents and receiving antibiotics for infection were excluded from the study. Patients who had neurological and endocrinological disorders, alcoholics or drug abusers were also not the part of this study. Patients who were not giving consent were also excluded from the study. Nonprobability consecutive sampling technique used for sampling. Total 171 patients were included in this study who fulfilled the criteria. After written informed consent detailed history was taken from each patient. Their erectile dysfunction assessed by using IIEF-5 scoring system. Fasting serum lipid profiles were sent to the same laboratory. Associated risk factors like Diabetes mellitus (DM) Hypertension (HTN), Body mass index (BMI) and smoking history were also recorded. Data was collected in the prescribed proforma and entered and analyzed by using SPSS version-21. Descriptive statistics were recorded in terms of mean \pm s.d of age, BMI, systolic and diastolic blood pressure and fasting lipid profile. Effect modifiers like age, DM, HTN, BMI, smoking and TGL were stratified by using appropriate chi square test and p-value of <0.05 was taken as significant.

RESULTS

Total 171 male patients were included in this study. Age of the patients was from 40 to 85 years (mean 63.45 ± 12.41 years. mean SBP and DBP were 153.04 ± 21.26 and 83.78 ± 13.7 mmHg and mean BMI was 30.99 ± 7.11 kg/m². 40 patients were found to have higher TGL greater than 150 mg/dl. In 171 patients with ED, 129 patients had HTN and 90 patients had DM while 27 patients had history of smoking. On work up 35 patients were found to have coronary heart disease. Stratification were done for modifiers factors of age smoking, HTN, DM and CAD to see the effect on the outcome of hyperlipidemia using chi-square test and given in table one. Age and CAD were statically

insignificant while DM, HTN and smoking were found to be statistically significant with hyperlipidemia.

Table No.1: Descriptive statistics of lipid profile in patients presenting with erectile dysfunction (n = 171)

Lipid Profile	Mean \pm SD	Median	Maximum	Minimum
Total Cholesterol	157.61 \pm 48.48	148	332	53
TGL	106.26 \pm 38.87	99	327	39
LDL	93.02 \pm 36.73	89	252	22
HDL	39.66 \pm 13.98	38	106	10
VLDL	24.39 \pm 13.34	20	105	8

Table No.2: Comparison of Hyperlipidemia in patients presenting with erectile dysfunction among different study characteristics (n = 171)

Different study characteristics (n = 171)				
Confounding Factors	Hyperlipidemia (TGL)			P-value
	Present n= 40	Absent n= 131	Total n= 171	
Age Groups				
<= 63 Years	22 [12.9%]	66 [38.6%]	88 [51.5%]	0.609
>63 Years	18 [10.5%]	65 [38%]	83 [48.5%]	
Total	40 [23.4%]	131 [76.6%]	171 [100%]	
Coronary artery disease (CAD)				
Yes	14 [8.2%]	39 [22.8%]	53 [31%]	0.531
No	26 [15.2%]	92 [53.8%]	118 [69%]	
Total	40 [23.4%]	131 [76.6%]	171 [100%]	
Family of History (CAD)				
Yes	13 [7.6%]	22 [12.9%]	35 [20.5%]	0.031 *
No	27 [15.8%]	109 [63.7%]	136 [79.5%]	
Total	40 [23.4%]	131 [76.6%]	171 [100%]	
Diabetic Mellitus (DM)				
Yes	30 [17.5%]	60 [35.1%]	90 [52.6%]	<0.00 1*
No	10 [5.8%]	71 [41.5%]	81 [47.4%]	
Total	40 [23.4%]	131 [76.6%]	171 [100%]	
Hypertension (HTN)				
Yes	37 [21.6%]	92 [53.8%]	129 [75.4%]	0.04*
No	3 [1.8%]	39 [22.8%]	42 [24.6%]	
Total	40 [23.4%]	131 [76.6%]	171 [100%]	
Smoking Status				
Yes	11 [6.4%]	16 [9.4%]	27 [15.8%]	0.020 *
No	29 [17%]	115 [67.3%]	144 [84.2%]	
Total	40 [23.4%]	131 [76.6%]	171 [100%]	

*P value is statistically significant

DISCUSSION

Sexual activity is a foremost segment of men's quality life. ED not only affects the sexual performance, along with this it badly affects couple/married relationship, self-confidence and mental health. As discussed earlier, ED can be physiologic (organic) or psychogenic in origin. Psychological disorders like depression, psychological stress and performance anxiety affects erectile function which usually are sudden in onset with short duration, while in organic disorders hormonal, vascular or neurogenic pathologies are responsible for ED. Among the organic disorders, vascular reasons are the most common affecting erectile function such as atherosclerosis of penile arteries. Impaired Endothelial function and peripheral artery is seen in patients with DM, HTN and CAD. Hyperlipidemia is also responsible for ED which is mostly due to hyperlipidemia induced atherosclerotic changes in the penile vessels as seen in patient of DM and HTN, which ultimately causes failure to relax endothelial cell of cavernosa resulting in impaired/ reduced blood flow in the penis. There are number of studies which suggest that hyperlipidemia is responsible for ED while some researchers are of opinion that hyperlipidemia doesn't cause ED. In a study¹², they found hyperlipidemia was present in 16 % of general population and 29 % in patients with ED and same findings were also seen in another international study.¹³ Roumeguere et al¹⁵ and Khurana et al¹⁶ found that hyperlipidemia was present in 70.6% and 42% patients respectively with ED. In previous reported studies, it is observed that ED is found to be higher in aging male and consequently affecting their quality of life. There is now consensus on hyperlipidemia induced ED but it is still not clear which lipid value LDL, HDL, TGL or TC is responsible for ED. In one study it was seen that TC & HDL together cause ED in 4 % of the patient while 70.6% of the patients with ED were found to have raised TC in Roumeguere et al¹⁵ study. They retrospectively assessed the male patients who presented in urology department with ED and found that 15% of the patients who were tested for hyperlipidemia had raised serum TC level.¹⁷ While they¹⁸ found that TGL were associated with ED, which is similar in our study but Moustafa et al¹⁹ and Kim²⁰ results were contrary to our result. In present study, 23.39% of the patient had hyperlipidemia. Our finding of hyperlipidemia in patients with ED are almost consistent with international studies.^{12,13} while on the contrary our results are much lower compared to Roumeguere et al¹⁵ and Khurana et al¹⁶ results. In a study, co-morbid like HTN, DM, CAD and smoking were also reported in patients with ED having hyperlipidemia which are consistent with present study except smoking.¹⁷ Researchers have found that ED may be the first presentation and alarm for the CAD¹⁵ similar findings were seen in another study which concluded

that ED is correlated with ischemic heart disease as it antecede and point to the ischemic heart disease.²¹ This is because both ED and CAD shares the same pathophysiology such as endothelial dysfunction and inflammation. ED is incorporated with increased chances of having ischemic events like myocardial infarction, cerebrovascular events leading to morbidity and mortality.²² Indeed, ED precedes a cardiovascular event by 2–5 years.²³ In one study, it was seen that 19 % patients with ED had found to have silent CAD documented on angiography suggesting cardiovascular evaluation in ED patients.²⁴ In present study 53 (31%) patients found to have CAD.

Although the contribution of hyperlipidemia in patients of erectile dysfunction (ED) may be slight in patients with multiple risk factors, improving serum cholesterol could help with ED symptoms. Initiating lifestyle changes to improve lipids could simultaneously improve other risk factors for ED such as hypertension, obesity, and blood sugar as well. Erectile dysfunction could be a window of opportunity for diagnostic and treatment of heart disease. There is a dearth of reliable figures for the prevalence of hyperlipidemia in Pakistan. This study will also look at common treatment modalities related to Erectile Dysfunction (ED). This study furthermore will also provide that on the basis of these results, clinicians take account of proper management of hyperlipidemia as a part of the treatment plan for erectile dysfunction.

CONCLUSION

Hyperlipidemia is not uncommon in ED patients. These patients have a high risk of later developing CAD. Erectile dysfunction might therefore serve as sentinel event for coronary heart disease. In conclusion, we report a high prevalence of hyperlipidemia in men presenting with ED. The opportunity to screen, diagnose and treat these and other cardiovascular risk factors at the time of assessment for ED has potential long-term benefits in this group of patients.

Author's Contribution:

Concept & Design of Study:	Naresh Kumar Valecha,
Drafting:	Shahzad Ali, Saeed Ahmad Khan
Data Analysis:	Liaquat Ali, Mohammad Mansoor, Shahid Hussain
Revisiting Critically:	Shahzad Ali, Naresh Kumar Valecha
Final Approval of version:	Shahzad Ali

Conflict of Interest: The study has no conflict of interest to declare by any author.

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