

Research Article**A cross sectional study on abnormal lipid profile in cases of cirrhosis**

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ABSTRACT

Objective: To study the abnormal lipid profile in cases of liver cirrhosis presenting at Bahawal Victoria Hospital, Bahawalpur.

Material and methods: This cross sectional was conducted at Department of Medicine, Bahawal Victoria Hospital, Bahawalpur from March 2016 to September 2016. Total 110 cases of liver cirrhosis were selected and lipid profile of the cirrhotic patients was studied.

Results: Mean age of the cirrhotic patients was 39.77 ± 12.84 years. Out of 110 patients, dyslipidemia was noted in 88 (80%) patients. Total 60 (54.55%) patients belonged to age group 15-40 years and dyslipidemia was noted in 45 (70%) patients. Out of 50 (45.45%) patients of age group 41-65 years, dyslipidemia was noted in 43 (86%) patients. Statistically significant association between age group and dyslipidemia was noted with p value 0.2310. Statistically significant association between gender and dyslipidemia was noted with p value 0.6255.

Conclusion: In present study a higher rate of dyslipidemia was noted in patients of liver cirrhosis. But insignificant association of dyslipidemia with age and gender was observed.

Keywords: Child paugh class, liver cirrhotic, dyslipidemia, lipid profile, Hepatitis B, Hepatitis C

INTRODUCTION:

Cirrhosis of liver is development of fibrosis to the point that there is architectural distortion with the formation of regenerative nodules¹. Cirrhosis is the tenth most common cause of death in United States. Chronic viral hepatitis C and alcoholic liver disease are the most common causes of cirrhosis². Hepatitis C is estimated to cause chronic infection in 200 million individuals or 2-3% of the world's population³. It affects 1.3% individuals in United States and 3.5% individuals in Asia⁴. Chronic alcoholic liver disease accounts for 40% of deaths due to cirrhosis of liver¹. According to a local study conducted in 2012, most common cause of cirrhosis of liver is hepatitis C, 61.66% of all patients with cirrhosis, followed by hepatitis B infection, 18.94% and then alcoholic liver disease which accounts for 3.2% of

the patients of cirrhosis of liver⁵. These patients need frequent visits and multiple hospital admissions for management of cirrhosis and its complications. Child Turcotte Pugh classification is used to predict survival in patients with cirrhosis⁶⁻⁷. It is seen that lipid abnormalities exist in patients with cirrhosis. Liver plays an essential role in lipid metabolism, synthesis, transportation and clearance⁷. It is therefore reasonable to expect an abnormal lipid profile in those with severe liver dysfunction and so low levels of triglycerides and cholesterol are observed in chronic liver disease⁸. Although several studies have been done on dyslipidemia in cirrhotic worldwide there is a paucity of data in this regard in our local population. Rationale of our study is to assess the dyslipidemia in cases of liver cirrhosis as there is

a high prevalence of chronic liver disease in Pakistan. The results of this study will help in making protocols for screening dyslipidemias in cirrhotic.

MATERIAL AND METHODS:

This cross sectional was conducted at Department of Medicine, Bahawal Victoria Hospital, Bahawalpur from March 2016 to September 2016. Total 110 patients with liver cirrhosis were recruited either male or female having age from 15-65 years. Patients with co morbid diseases such as Diabetes Mellitus, Hypertension and Ischaemic heart disease, Patients on lipid lowering drugs or hepatotoxic drugs, Patients with BMI>30, Patients with acute hepatitis, Patients with end stage renal disease were excluded from the study. Demographic data of the enrolled patients including Name, Age, Gender, Address, was noted on performa. Blood samples of all the patients was taken for PT, INR, albumin, bilirubin and fasting lipid profile (after an overnight fast of 12 hours) and blood samples were sent to laboratory for analysis. Ultrasonography of all the patients was done by a consultant radiologist. All the

collected data was analyzed by using SPSS version 18. Mean and SD was calculated for numerical data and frequencies were calculated for categorical data.

RESULTS:

Mean age of the cirrhotic patients was 39.77 ± 12.84 years. Out of 110 patients, dyslipidemia was noted in 88 (80%) patients. (Fig. 1) Selected patients were divided into two age groups i.e. age group 15-40 years and age group 41-65 years. Total 60 (54.55%) patients belonged to age group 15-40 years and dyslipidemia was noted in 45 (70%) patients. Out of 50 (45.45%) patients of age group 41-65 years, dyslipidemia was noted in 43 (86%) patients. Statistically significant association between age group and dyslipidemia was noted with p value 0.2310. (Table 1)

Out of 110 patients, male patient were 68 (61.12%) and female patients were 42 (38.18%). Dyslipidemia was noted in 53 (77.94%) male patients and 35 (83.33%) patients. Statistically significant association between gender and dyslipidemia was noted with p value 0.6255. (Table 2)

Fig. 1 Frequency of dyslipidemia

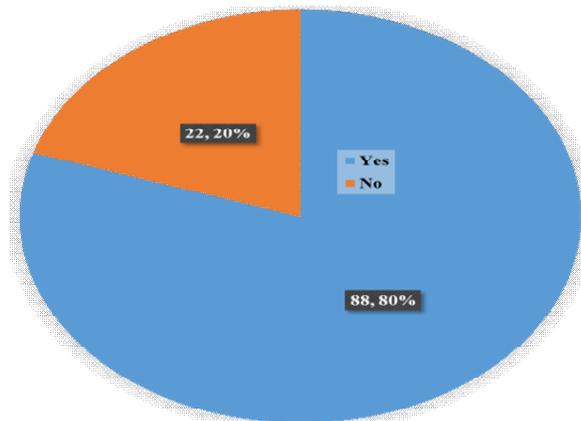


Table No.1 Stratification for age

Age Group	Dyslipidemia		Total (%)	P. value
	Yes (%)	No (%)		
15-40 Age Group 1	45 (70)	15 (25)	60 (54.55)	0.2310
41-65 Age Group 2	43 (86)	7 (14)	50 (45.45)	
Total	88 (80)	22 (20)	110	

Table No.2 Stratification for Gender

Gender	Dyslipidemia		Total (%)	P. value
	Yes (%)	No (%)		
Male	53 (77.94)	15 (22.06)	68 (61.12)	0.6255
Female	35 (83.33)	7 (16.67)	42 (38.18)	
Total	88 (80)	22 (20)	110	

DISCUSSION:

The purpose of the present study was to assess dyslipidemia in cases of liver cirrhosis. Mean age of the cirrhotic patients was 39.77 ± 12.84 years. Total 60 (54.55%) patients belonged to age group 15-40 years and dyslipidemia was noted in 45 (70%) patients. Out of 50 (45.45%) patients of age group 41-65 years, dyslipidemia was noted in 43 (86%) patients. Statistically significant association between age group and dyslipidemia was noted with p value 0.2310. Out of 110 patients, dyslipidemia was noted in 88 (80%) patients. These finding of dyslipidemia comparable with the study of Roesch-Dietlen F et⁹ al which is showing dyslipidemia as 76.92% but Shimizu H¹⁰ at Ohio USA found lower dyslipidemia rate 61% in patients of liver cirrhosis. In a study conducted by EL-Khabbany ZA,¹¹ it was concluded that dyslipidemia is a frequent finding in a patient with chronic liver disease, which worsened with increased severity of CLD. Of the 40 studied cases with CLD, 8(20%) had hypercholesterolemia, 13(32.5%) had hypertriglyceridemia, 17(42.5%) had low HDL and 9(22.5%) had high LDL. Abbas et al also found that hypocholesterolemia is a common finding in decompensated chronic liver disease and has got significant association with Child-Pugh class. As severity of liver dysfunction increased these levels decreased proportionately. Results also revealed that males were more hypocholesterolemic than females.¹² The association of lipid profile and severity of liver disease is not well studied in Pakistan and usually this parameter is ignored. Cirrhotic patients need frequent visits and multiple hospitalizations for management of cirrhosis or its

complications. However, choosing the proper treatment plan depends on the severity, type of liver damage and possibility of assessing its extent. To evaluate cirrhosis, Child-Turcotte-Pugh criteria can be used.¹³

Our study is indoor study on hospitalized patients. Chronic liver disease is one of the highly prevalent disease in our community. Dyslipidemia also contributes for its morbidity and mortality as commonly observed in them. Its effective screening and prompt management may helpful in decreasing morbidity and mortality of chronic liver disease. It is suggested to perform further studies in this aspect particularly community based, so that results will be more generalized.

CONCLUSION:

In present study a higher rate of dyslipidemia was noted in patients of liver cirrhosis. But insignificant association of dyslipidemia with age and gender was observed.

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