IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 22, Issue 9 Ser.3 (September. 2023), PP 01-03
www.iosrjournals.org

A Study On Clinical Profile In Patients With Chronic Liver Disease And Evaluation Of Lipid Profile And Its Correlation With Severity Of The Disease

Dr.Gaurav Kr. Singh[1],Dr. Altous.F [2] ,Dr. Mridu Paban Rajkhowa [3] , Dr.Sheikh Md Imtiaz Hussain [4]

[1]*Assistant Professor, Department of Medicine; Fakhruddin Ali Ahmed Medical College,Barpeta*
[2]*Senior Resident, Department of Medicine; Fakhruddin Ali Ahmed Medical College,Barpeta*
[3]*Post Graduate Trainee, Department of Medicine; Fakhruddin Ali Ahmed Medical College, Barpeta*
[4]*Post Graduate Trainee, Department of Medicine; Fakhruddin Ali Ahmed Medical College, Barpeta*

Abstract:
Objective: *To study about the various clinical and biochemical presentation and the lipid profile abnormalities and correlation of lipid profile with the severity of chronic liver disease.*
Methodology:*100 chronic liver disease patients was monitored during the entire hospital stay. In this research, individuals with chronic liver disease had their total cholesterol, HDL, LDL, and triglyceride levels measured.*
Results: *Most common clinical presentation was ascites which was seen in 82% of patients followed by edema in 52%, jaundice in 55%, fever in 45%, UGI bleeding in 23%, Hepatic encephalopathy in 36%, spontaneous bacterial peritonitis in 17% of study population. Lipid profile parameters like serum total cholesterol, LDL, VLDL, TGL, HDL are reduced with increasing severity of chronic liver disease.Lipid profile is crucial for assessing severity since the changes correlate statistically significantly with current severity evaluation scores such as the Child Pugh Turcotte score.*
Conclusion:*Inthis study it was found that most common clinical presentation is abdominal distension/ascites followed by jaundice and edema. There is significant reduction in levels of lipid profile parameters like serum total cholesterol, LDL, VLDL, TGL, HDL in patients with cirrhosis as the severity increases. It was also found that there was inverse relationship of lipid profile and chronic liver disease severity.*
Key words: *Chronic liver disease, Ascites, Jaundice, Lipid Profile .*

Date of Submission: 01-09-2023 Date of Acceptance: 11-09-2023

I. Introduction:

In the clinical setting, chronic liver disease is a liver disease process that involves a gradual destruction and regeneration of the liver parenchyma that results in fibrosis and cirrhosis.[1] Decompensated chronic liver disease is a term used to describe more severe disease due to one or more of the following symptoms: jaundice, ascites, hepatic encephalopathy, or bleeding varices. Ascites or abdomen distension is usually the presenting initial symptom.[2]Cirrhosis is the histological development of regenerating nodules surrounded by fibrous bands in response to chronic liver damage, which results in portal hypertension and end-stage liver disease.[3] As evidenced by epidemiological studies that identified regular(moderate) alcohol consumption, age greater than 50 years, and male sex as risk factors in chronic hepatitis C or later age obesity, insulin resistance/type 2 diabetes, hypertension, and dyslipidemia (all components of the metabolic syndrome) in NASH, multiple predisposing factors frequently contribute to the development of cirrhosis.[4-8]

Lipids are important constituents of biological membranes, free molecules, and metabolic regulators that regulate cellular activity and homeostasis. The liver is essential for lipid metabolism. It participates in both endogenous and exogenous cycles of lipid metabolism and plasma lipid transport. The dyslipidemia seen in chronic liver disease varies from that observed in the majority of other causes of secondary dyslipidemias due to the fact that circulating lipoproteins not only have an abnormal quantity but also commonly have an unusual composition, electrophoretic mobility, and appearance.[9] Utilization, synthesis, and transfer of lipid fractions in healthy persons are maintained by a complex equilibrium. Many disorders that affect the parenchyma can alter the structure, distribution and levels of lipoproteins throughout the blood.[11] However, in cirrhotic individuals, the lipid metabolism is altered to the point where glycogen reserves are drastically decreased, resulting to starvation and biolysis.[10] The prognosis for liver cirrhosis depends on the underlying etiology, severity of the illness, existence of another disease, and presence of complications. Numerous laboratory and clinical

evaluating factors have been developed to aid in the stage of liver disease. MELD and Child Pugh Turcott scores are the most often employed scoring systems.[12] these changes occur together with the course of liver illness and may be regarded as a predictor of hepatic de-compensation.[13] Age, ethnicity, location, socioeconomic class, and etiological variables can all affect the cirrhosis profile.

India is a developing country and chronic liver disease causes a major health burden to the country. Use of a simple biomarker like lipid profile to assess the severity and prognosis can be used as an interventional tool. Hence this study aims to find if there is correlation between serum levels of lipids with the severity with chronic liver disease. Finding a positive correlation could help us focusing more on decreasing the progression of the disease and to delay or avert the complication of the disease.

II. MATERIALS AND METHODS

This study was carried out in department of medicine Fakhruddin Ali Ahmed Medical College And Hospital,Barpeta,Assam for a period of 1 year from September 2021 to August 2022.All cases were admitted and examine in details in the ward and clinical data was recorded in a profoma.Patient age more than 18 years with symptoms, signs, biochemical and radiological features of chronic liver disease irrespective of causes were included in the study with the exclusions criteria of Ascites due to renal, cardiac, tubercular and malignant pathologies; Patient on lipid altering agents , Known thyroid disorder,familial hypercholesterolemia,pancreatitis, chronic smokers and those with diabetes mellitus, hypertension, and other diseases that might lower lipid levels.

A thorough clinical examination was performed, vital signs were recorded, a systemic examination was done to check for ascites and splenomegaly and blood samples were investigated for serum fasting lipid profile, complete blood count, coagulation profile, renal function, liver function, S. electrolytes.

III. RESULTS AND DISCUSSIONS:

The purpose of this study was to study the clinical profile and determine relationship between the lipid profile and the severity of liver disease.

In our study we found that all the lipid markers were significantly higher in Child-Pugh A, however they started to drop as chronic liver disease progressed. This could be described by a decline in the damaged liver's synthetic function. [14]

In our study we found that mean age of the study population was 49 ±10 years with age range from 20-69 years and majority of the study population were men which comprised about 64%. These results were similar to a study conducted by Goma et al. (2020) in which most of the study participants were men which comprised about 58.9% and mean age of the study population was 49.36 ± 11.19 with age range from 25-73 years. [15]

In our study we found that most common presentation was abdominal distension which was seen in 82% followed by edema 52%, Jaundice and Fever in 45%, Hepatic Encephalopathy in 32%.

These results were consistent with earlier research done by R Maskey et al. who found that most common clinical presentation in his study was abdomen distension and jaundice 84.4% of adult cirrhotic followed by fever in 32% of adult cirrhotis and followed by UGI bleed in 30% of patients of adult cirrhotic. [16]

In our study we see that 37% of patients belong to Child Pugh Score A, 41% belong to Child Pugh Score B, 22% belong to Child Pugh score C. Similar study done by P C Kumar et al. observed that 18.3% patients belong to Child Pugh A, 46.3% belong to Child Pugh B, 18.3% presented in Child Pugh A. This difference in observation is because of the delayed presentation of patients with advanced liver disease was seen in the study conducted by P C Kumar et al. [17]

In our present study 4% of patients belong to MELD score of 1 to 10, 16% belong to 11 to 18, 32% belong to 19 to 24 and 48% belong to >24. In a similar study done by Mishra et al. they found that 18.4% of patients belong to MELD score of 1 to 10, 52.6% belong to 19 to 24 and 5% belong to ≥ 30, which is not similar with our results because Mishra et al. excluded patients of advanced liver disease with complication. [18]

In our current study we found that total cholesterol, LDL, VLDL, HDL, and triglycerides decreased dramatically as the severity of cirrhosis increased. The mean cholesterol level in our study was 153, mean triglyceride level was 130, mean LDL level was 89.7, mean VLDL level was 26, mean HDL level was 37. When comparing the child pugh scores of A, B, and C, the category C had the lowest cholesterol level, with a mean of 122 mg/dl. Mean Triglycerides in Child Pugh C was 93, Mean LDL was 74.8 and VLDL 18.5 and HDL 44. These results were similar to study conducted by Ghadir et al (2010) in an analytical cross-sectional study found that in patients with cirrhosis, there was a significant decrease in serum triglyceride, total cholesterol, LDL and HDL cholesterol levels compared to the comparison group mean of 82 vs. 187, 138 vs. 184, 80 vs. 137, and 40 vs. 44 mg/dL, respectively. [19]

Sachdeva et al (2018) conducted a study on 100 patients with liver cirrhosis. Mean total cholesterol in cirrhotic study group was 147. Mean VLDL cholesterol in cirrhotic study group was 24.11. Mean LDL in cirrhotic study group was 88.35. These results were similar to the results in our study. [20]

Gomma et al.(2020) also observed that Child Pugh C had mean values of triglycerides, HDL, VLDL, LDL, and total cholesterol were 74.33, 37.67, 13.33, 69.2 and 69.2 mg/dl. In our study we found that Child Pugh C had mean values of TG, HDL, VLDL, LDL and total cholesterol were 93, 28, 18.5, 74.8, 122 mg/dl, hence proving the fact that as severity of chronic liver disease progresses there is a gradual decline in the lipid profile which was also similarly observed by Gomma et al.[14]

In our current study we have proven that there is inverse relationship of lipid profile and chronic liver disease severity. But our study lacks correlation of lipid profile abnormalities with complications of cirrhosis.Nevertheless, the study's findings serve as a foundation for future research into lipid profile alterations in cirrhosis. Further research is necessary in this topic. Future research may establish a correlation between cirrhosis severity and lipid profile modifications.

IV. CONCLUSION

In this study it was found that most common clinical presentation is abdominal distension/ascites followed by jaundice and edema. There is significant reduction in levels of lipid profile parameters like serum total cholesterol, LDL, VLDL, TGL, HDL in patients with cirrhosis as the severity increases. It was also found that there was inverse relationship of lipid profile and chronic liver disease severity. Further development of a scoring system in accordance with an existing scoring system may result in a more accurate prognostic evaluation of patients in terms of morbidity and mortality.

V. LIMITATION

The sample size was relatively small and duration of the study short. In addition, no control group was taken and the study was done as a cross sectional study and no correlation was done with complications like hepatorenal and hepatopulmonary syndromes. Therefore, further studies are required to use lipid profile as a severity marker.

BIBLIOGRAPHY

[1]. Ashraf S, Naeem S. Frequency Of Hypersplenism In Chronic Liver Disease Patients Presenting With Pancytopenia. Annals Of King Edward Medical University. 2010;16(1 SI).
[2]. Mccormick PA. Sherlock's Disease Of Liver And Biliary System Textbook. Hepatic Cirrhosis. In: Dooley JS, Lok AS, Burroghs AK, Heathcote EJ, Editors. 12th Ed.Ch. 7. UK:Wiley-Blackwell, A John Wileyand Sons, Ltd.; 2011. P.103-8.
[3]. Schuppan.D And Afdhal.N.H, "Liver Cirrhosis", The Lancet, Vol. 371, No.9615, Pp. 838-851,2008.
[4]. Poynard T, Bedossa P, Opolon P. Natural History Of Liver Fibrosis Progression In Patients With Chronic Hepatitis C. The OBSVIRC, METAVIR, CLINIVIR, AND DOSVIRC Groups. Lancet 1997; 349;825-32.
[5]. Bellentani S, Pozzato G, Saccocio G, Crovatto M, Croce M, Mazzoran L Et Al. Clinical Course And Risk Factors Of Hepatitis C Virus Related Liver Disease In The General Population: Reort From The Dionysos Study. Gut 1999; 44:874-80.
[6]. Bellentani S, Saccoccio G, Costa G, Tiribelli C, Manenti F, Sodde Met Al. The Dionysos Study Group. Drinking Habits As Cofactors Of Risk For Alcohol Induced Liver Damage. Gut 1997;41:845-50.
[7]. Clark JM. The Epidemiology Of Non Alcoholic Fatty Liver Disease In Adults. J Clin Gastroenterol 2006;40:S5-10.
[8]. Farrel GC, Larter CZ. Nonalcoholic Fatty Liver Disease : From Steatosis To Cirrhosis Hepatology 2006; 43:S99-S112.
[9]. Mehbob F., Ranjha F.A., Masud S. Changes In Serum Lipid Profile Among Patients Suffering From Chronic Liver Disease. Annals:2007;13. No. 3
[10]. Bassendine MF, Sheridan DA, Bridge SH, Felmlee DJ, Neely RD. Lipids And HCV. Semin Immunopathol. 2013 Jan;35(1):87-100. Doi: 10.1007/S00281-012-0356-2. Epub 2012 Oct 31. PMID: 23111699.
[11]. Studenik P. Lipid Disorders In Liver Disease. Vnitrlek 2000; 46:547-548.
[12]. Inaba K, Barmparasg, Resnick S, Browder T,Chhan LS, Lam L, Et Al. The Model For End-Stage Liver Disease Score: An Independent Prognostic Factor Of Mortality In Injured Cirrhotic Patients. Arch Surg 2011;146:1074-1078.
[13]. Jiang M, Liu F, Xiong WJ, Zhong L, Xu W, Xu F, Et Al. Combined MELD And Blood Lipid Level In Evaluating The Prognosis Of Decompensated Cirrhosis. World J Gastroenterol 2010; 16:1397-1401.
[14]. Nayak MS, Shah RM. Study Of Lipid Profile In Cirrhotic Patients.
[15]. Goma A, Sharafeddin M, Abdallah A. Lipid Profile In Relation To Severity Of Liver Diseases. Benha Medical Journal. 2020 May 1;37(1):319-25.
[16]. Maskey R, Karki P, Ahmed SV, Manandhar DN. Clinical Profile Of Patients With Cirrhosis Of Liver In A Tertiary Care Hospital, Dharan, Nepal. Nepal Med Coll J. 2011 Jun 1;13(2):115-8.
[17]. Kumar PC, Shiv Nath S, Anil Kumar P. Study Of Clinic-Etiological Profile And The Complication Pattern In Patients With Chronic Liver Disease At Tertiary Care Centre. Int J Contemp Med Res. 2016;3(6):1668-70.
[18]. Peeyush Mishra, Prachi Mishra, Mukesh Kumar Bansal. Utility Of MELD Score As Prognostic Indicator In Patients Of Liver Cirrhosis And Its Correlation With Child-Pugh Score. International Journal Of Contemporary Medical Research 2019;6(12):L1-L4.