

Clinical Profile of Cirrhosis of Liver with Special Reference to Bacteriological Profile of Patients at a Government Tertiary Care Center in Maharashtra

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Abstract

Original Research Article

Background: Cirrhosis is defined as the histological development of regenerative nodules surrounded by fibrous bands in response to chronic liver injury that leads to portal hypertension and end stage liver disease. The exact prevalence of cirrhosis worldwide is unknown. Cirrhosis prevalence was estimated at 0.15% or 400,000 in the USA where it accounted for more than 25,000 deaths and 373,000 hospital discharges in 1998. This may be an underestimation as we recognize the high prevalence of undiagnosed cirrhosis in both NASH and hepatitis C. Similar numbers have been reported from Europe, and numbers are even higher in most Asian and African countries where chronic viral hepatitis B or C are frequent. Since compensated cirrhosis often goes undetected for prolonged periods of time, a reasonable estimate is that up to 1% of populations may have histological cirrhosis. **Aim:** To study clinical profile of cirrhotic patients. **Material and Methods:** A cross-sectional observational study was carried out at Inpatient Department of Medicine of tertiary care hospital. Total 100 cases were studied. Registration of patients was from October, 2019 to March 2021. They were registered when admitted under Medicine department. At the time of registration, the patients with exclusion criteria were not enrolled for study. The main objective of this study is to study the biochemical and bacteriological profile of cirrhotic patients. At the time of registration, the baseline information was taken especially with respect to sociodemographic factors, clinical findings, and other investigations. The data thus collected was analysed to study clinical profile of cirrhotic patients. **Results:** Mean age in years was 55.1 ± 15.06, ranging from 24 to 75. Majority 40% were in age group of 40 to 60 years. Majority 68% were males and 32% were females. Mean SBP was 150.15 ± 21.54 ranging from 100 to 210. 66% had increased SBP i.e. >140 mm of Hg and Mean DBP was 91.64 ± 11.87, ranging from 60 to 112. Majority 54% had raised DBP i.e. >90. 33% had diabetes mellitus and Majority 67% were hypertensive. **Conclusion:** Infections are a major problem in patients with liver cirrhosis which causes multiple disturbances in the defense mechanisms and thus increases bacterial translocation. With early diagnosis of infection and the appropriate antibiotic treatment, the mortality rate from bacterial infections in cirrhotic patients can decrease over the years.

Keywords: Clinical profile, cirrhosis of liver, bacteriological profile.

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INTRODUCTION

Cirrhosis is a chronic disease of the liver in which diffuse destruction and regeneration of hepatic parenchymal cells has occurred, in which diffuse increase in connective tissue has resulted in disorganization of the lobular architecture. The triad of parenchymal necrosis, regeneration and scarring is always present regardless of individual clinical manifestations [1-4]. In the evolution of many chronic liver diseases cirrhosis is a stage that is considered to be irreversible. Cirrhosis can be stabilized by controlling the primary disease but its presence implies

consequences such as portal hypertension, intrahepatic shunting of blood, impaired parenchymal function affecting protein synthesis, hormone metabolism and excretion of bile and bile salts. The most common complications are: gastrointestinal hemorrhage, ascites, encephalopathy, bacterial infections, renal failure, hepatocellular carcinoma and hepatic failure [5]. Certain reversible components of cirrhosis have been indicated where significant histological improvement have occurred with regression of cirrhosis but complete resolution with a return to normal architecture seems unlikely [6]. The underlying immunological response

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has usually been acting for months or years where inflammation and tissue repairing are in progress simultaneously which leads in the end to fibrosis and cirrhosis [7].

Bacterial infections accounts for major morbidity and mortality (30-50%) in cirrhosis of liver further contributing to immunological alterations in cirrhotic patients. National data is lacking on exact burden of disease related to bacteriological profile. Hence, present study was carried out to fill the void.

Aim

To study clinical profile of cirrhotic patients

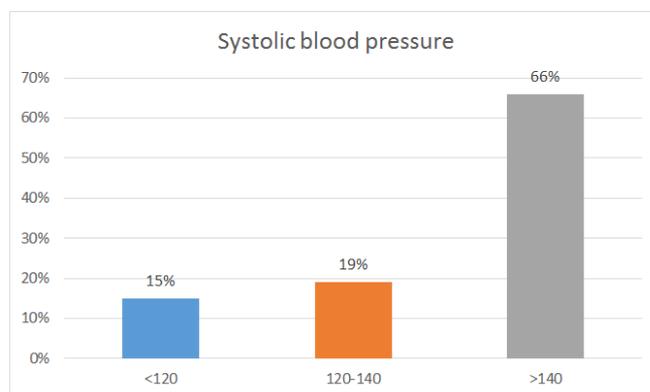
MATERIAL AND METHODS

A cross-sectional observational study was carried out at Inpatient Department of Medicine of tertiary care hospital. Total 100 cases were studied. Registration of patients was from October, 2019 to March 2021. They were registered when admitted under Medicine department. At the time of registration, the patients with exclusion criteria were not enrolled for study. The main objective of this study is to study the biochemical and bacteriological profile of cirrhotic patients. At the time of registration, the baseline information was taken especially with respect to

sociodemographic factors, clinical findings, and other investigations. The data thus collected was analysed to study clinical profile of cirrhotic patients. Inclusion criteria: All patients admitted to tertiary care center with clinical diagnosis of chronic liver diseases which is further supported by clinical examination and biochemical tests, radiological investigations. Data analysis: All data was collected and compiled in Microsoft excel. All statistical analyses were performed by using IBM SPSS statistics Version 21.0 (SPSS Inc., Chicago, IL, USA) and Open Epi version 2.3.1. Descriptive statistics such as percentage (%), mean, range and standard deviation (SD) were used to describe the data. Chi square test was applied for qualitative data and student t test for quantitative type of data. A 'P' value of < 0.05 was regarded as statistically significant.

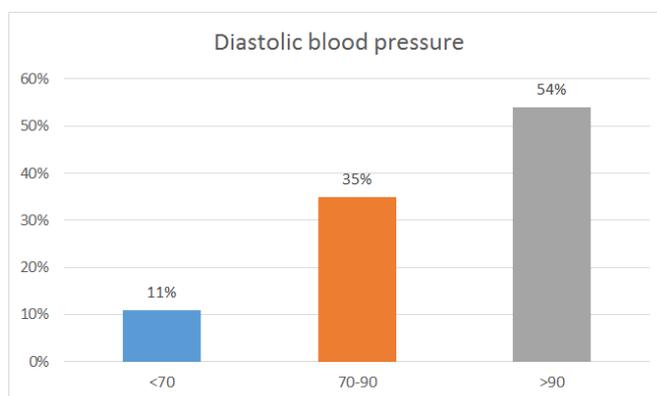
RESULTS

Mean age in years was 55.1 +15.06, ranging from 24 to 75. Majority 40% were in age group of 40 to 60 years. Majority 68% were males and 32% were females. Mean SBP was 150.15+21.54 ranging from 100 to 210. 66% had increased SBP i.e.>140 mm of Hg and Mean DBP was 91.64+11.87, ranging from 60 to 112. Majority 54% had raised DBP i.e >90. 33% had diabetes mellitus and Majority 67% were hypertensive.



Graph-1: Systolic blood pressure

Mean SBP was 150.15+21.54 ranging from 100 to 210. 66% had increased SBP i.e.>140 mm of Hg



Graph-2: Diastolic blood pressure

Mean DBP was $91.64+11.87$, ranging from 60 to 112. Majority 54% had raised DBP i.e >90

Table-1: Fasting blood sugar level

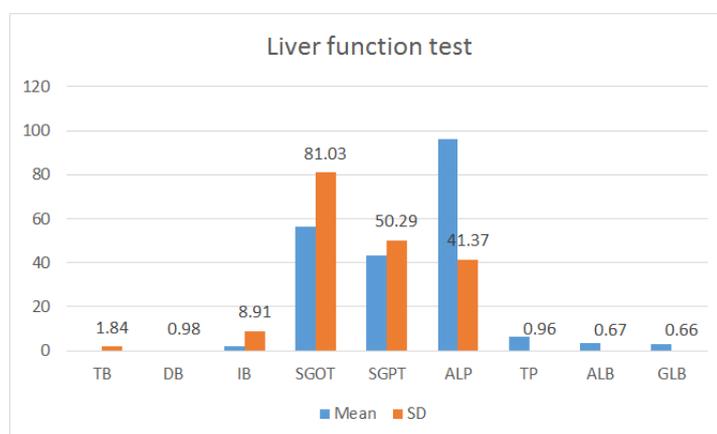
FBSL	Frequency	Percentage
<126	34	34%
126-200	40	40%
>200	26	26%
Total	100	100%

Mean FBSL was $160.95+54.46$, ranging from 76 to 298. Majority 40% had FBSL in range of 126 to 200.

Table-2: Laboratory investigations

Parameter	Mean	SD
Cholesterol	154.87	46.44
Triglyceride	152.56	62.07
High density lipoprotein	35.44	12.57

Mean cholesterol was $154.87+46.44$. Mean triglyceride was $152.56+62.07$ and mean HDL was $35.44+12.57$.



Graph-3: Liver function test

Mean total bilirubin was $1.13+1.84$, mean direct bilirubin was $0.5+0.98$, mean indirect bilirubin was $1.9+8.91$, mean SGOT was $56.42+81.03$, mean SGPT was $43.34+50.29$, mean ALP was $96.11+41.37$,

mean TP was $6.44+0.96$, mean ALB was $3.41+0.67$, mean GLB was $3+0.66$.

Table-3: USG finding

USG grading	Frequency	Percentage
1	58	58%
2	35	35%
3	7	7%
Total	100	100%

On USG finding majority 58% had grade 1, 35% had grade 2 and 7% had grade 3.

was $79+10$. Choi DH [10] also found that mean SBP was $125.6+15.6$, mean DBP was $75.9+9.6$.

DISCUSSION

Mean age in years was $55.1+15.06$, ranging from 24 to 75. Majority 40% were in age group of 40 to 60 years. Study by Mauricio Montemezzo *et al*. [8] showed that out of 139 patients, of whom 83 (59.7%) were male, with a mean age of 59.7 years. Study by Nimer Assy *et al*. [9] showed that mean age was $53+7$ and mean BMI was $31+3$, SBP was $133+15$ and DBP

Study by Mauricio Montemezzo *et al*. [8] showed that mean total bilirubin was $0.67+0.32$, triglyceride was $189+129.1$, HDL was $37.8+11.69$. Study by Nimer Assy *et al*. [9] showed that mean triglyceride was $226+62$, mean HDL was $40+13$. Choi DH *et al*. [10] also had similar results, mean total cholesterol was $195.6+39.1$, mean HDL was $38.4+12.1$, mean triglyceride was $177.4+94.4$, mean HbA1c was

6.3+1.2 and mean FBS was 115.3+37.3, total bilirubin was 1.1+0.6.

On USG finding majority 58% had grade 1, 35% had grade 2 and 7% had grade 3. Study by Fiorentino TV *et al*. [11] showed that Ultrasonography-defined NAFLD is independently associated with an increased risk of having CVD in individuals with different glucose tolerance. Study by Mauricio Montemezzo *et al*. [8] showed that the intensity of NAFLD detected by ultrasonography is strongly associated with the severity of coronary artery obstruction on angiography.

CONCLUSION

Infections are a major problem in patients with liver cirrhosis which causes multiple disturbances in the defense mechanisms and thus increases bacterial translocation. With early diagnosis of infection and the appropriate antibiotic treatment, the mortality rate from bacterial infections in cirrhotic patients can decrease over the years. As bacteremia leads to further complications and bad prognosis of disease, so clinical profile of cirrhosis of liver with special reference to bacteriological profile of patients should be a part of management of cirrhotic patients.

REFERENCE

- Schuppan, D., Afdhal, N.H. (2008). Liver cirrhosis. *Lancet*, 371(9615):838-851. doi:10.1016/S0140-6736(08)60383-9
- Digestive diseases in the United States. (1994). Epidemiology and Impact. NIDDK; Bethesda, MD. NIH Publication No. 94-1447.
- National Center for Health Statistics. (2005). US Department of Health and Human Services, Centers for Disease Control and Prevention; Hyattsville, MD. (Series 13).
- Conn, H.O. (1975). Cirrhosis. In: Diseases of the liver 4th edition. Edited by Schiff L. Philadelphia: J.B. Lippincott Company, 833.
- Millward-Sadler, G.H., Hahn, E.G., Wright, R. (1985). Cirrhosis: An appraisal. In: Liver and biliary disease. Pathophysiology, diagnosis, management. 2nd edition. Edited by Wright R, Millward-Sadler GH, Alverti KGMM, Karran S. London, Bailliére Tindall W.B. Saunders Company, 821.
- Iredale, J.P., Guha, I.N. (2007). The evolution of cirrhosis. In: Textbook of hepatology from basic science to clinical practice. 3rd edition. Edited by Rodés J, Benhamou J-P, Blei A, Reichen J, Rizzetto M. Oxford, Blackwell Publishing, 583-589.
- Wynn, T. (2008). Cellular and molecular mechanisms of fibrosis. *J Pathol*; 214:199-210.
- Montemezzo, M., Alturki, A., Stahlshmidt, F., Olandoski, M., Rodrigo Tafarel, J., & Precoma, D. B. (2020). Nonalcoholic fatty liver disease and coronary artery disease: big brothers in patients with acute coronary syndrome. *The Scientific World Journal*, 2020.
- Assy, N., Djibre, A., Farah, R., Grosovski, M., & Marmor, A. (2010). Presence of coronary plaques in patients with nonalcoholic fatty liver disease. *Radiology*, 254(2), 393-400.
- Choi, D. H., Lee, S. J., Kang, C. D., Park, M. O., Choi, D. W., Kim, T. S., ... & Lee, J. W. (2013). Nonalcoholic fatty liver disease is associated with coronary artery disease in Koreans. *World Journal of Gastroenterology: WJG*, 19(38), 6453.
- Fiorentino, T. V., Succurro, E., Sciacqua, A., Andreozzi, F., Perticone, F., & Sesti, G. (2020). Non-alcoholic fatty liver disease is associated with cardiovascular disease in subjects with different glucose tolerance. *Diabetes/metabolism research and reviews*, 36(8), e3333.