Original Article

Clinical, biochemical and utrasonographic presentation of Cirrhosis of liver in a tertiary care hospital

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Abstract

Objective: This study was designed to see the presentation and frequency of viral aetiology in chronic liver disease (CLD) in hospitalised patients.

Materials & Methods: Retrospective study included all hospitalised patients with CLD and decompensated cirrhosis. Data were retrieved from registrar and analysed.

Results: Total 185 cases of Chronic liver disease with or without decompensation were included. Age of varied from 15 years to 87 years with mean 55.43 and SD 13.13. Among them 107 (57.8%) and 78 (42.2%) were male and female respectively. About three-fourth of patients were above 45 years age group. Common presentations were ascites (118, 65%), abdominal pain (87, 47.0%), oedema (39, 21.1%) and encephalopathy (23, 12.4%). In this series 86 (46.5%), 08 (4.3%) and one (0.5%) had hepatitis B, hepatitis C infection and Wilson's disease respectively. In this series 45 (24.3%) patients had gall stone disease.

Conclusion: Common reasons for hospitalisation were ascites, abdominal pain, oedema and encephalopathy. Hepatitis B Virus infection was the common aetiology of CLD and cirrhosis.

Keywords: Chronic liver disease, Viral aetiology of cirrhosis, Gallstone disease.

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Introduction:

Chronic liver disease (CLD) is a disease causing high morbidity and mortality and leading to more than one million deaths per year.[1] Cirrhosis, the final common end stage condition of CLD irrespective of aetiology, is defined as loss of normal architecture, diffuse fibrosis and regenerative nodule formation.[2,3]

Prevalence of cirrhosis in the USA is 0.15% to 0.27%.[4] But worldwide prevalence is unknown. Cirrhosis of liver is the 11th leading cause of death in the world.[5] CLD related mortality in the world is increasing specially in low and low-middle income countries of Asia and Africa.[6] Alcohol and viral hepatitis are commonest causes worldwide.[7,8]

Aetiology of CLD and cirrhosis of liver in developed countries are alcohol abuse, HCV infection and non-alcoholic hepatitis while in developing countries hepatitis B (HBV) and hepatitis C (HCV) virus infection dominate the cause 4. Other causes of cirrhosis of liver are autoimmune hepatitis,[9] non-alcoholic liver disease and inherent metabolic disease.[10] Transition from hepatitis to cirrhosis occur in about 10-20% patients in 5-30 years[11]. In Bangladesh common causes of CLD are HBV (40.22%) followed by NASH (21.04%) and HCV (14.68%).[11]

Diagnosis of CLD and cirrhosis may be incidental in imaging. But it may be present with non-specific symptoms or with features of complications like ascites, spontaneous bacterial peritonitis, encephalopathy, hepatorenal syndrome, portopulmonary syndrome, variceal bleeding, jaundice and hepatocellular carcinoma.[12-14] Commonest presentations are ascites, encephalopathy, variceal bleeding and HCC.[13-16] Prevalence of gall stone disease in CLD is interestingly higher than general people and recent reports showed the global prevalence is about 29.4%.[17]

With this background this retrospective study was designed to see the presentation and aetiological contribution of viral infection of CLD and cirrhosis in a tertiary care hospital in Sylhet.

Materials & methods:

All patients admitted under department of Gastroenterology, Sylhet Women's Medical College Hospital from May 2022 to March 2025 with diagnosis of CLD were included in this study. Patients' epidemiological data, clinical and laboratory data were retrieved from the records. Approval from institutional review committee was taken.

Cirrhosis of liver was diagnosed from history, clinical signs like jaundice, ascites, oedema, splenomegaly, laboratory finding i.e. abnormality in ALT, AST, bilirubin, albumin, prothrombin time, viral markers and imaging features i.e., coarse, bright liver, shrunken liver, irregularity of margin, space occupying lesion, presence of ascites, and splenomegaly and oesophageal varices at endoscopic examination. Presence of cholelithiasis, evidence of biliary obstruction due to presence of gall stone, microlithiasis, sludge or history of cholecystectomy due to cholelithiasis were taken as evidence of gall stone disease. For aetiology Hepatitis B surface Antigen (HBSAg), Anti-HBc (total) in HBSAg negative patients and antigen against Hepatitis C virus (Anti-HCV) were done. Investigations for Autoimmune hepatitis, metabolic disease were performed in very limited cases.

Statistical analysis was done using SPSS 20 version. Mean, Range, mean and standard deviation were calculated for continuous data and percentage was calculated for categorical data. Chi-square test was done to see relations between variables.

Results:

Total 185 patients were included. Age of them varied from 15 years to 87 years (mean 55.43 and SD ± 13.134). Among them 107 (57.8%) and 78 (42.2%) were male and female respectively. About 75% of patients were above 45 years of age (Table-I). About three fourth of them were from rural area. Of them 75 (40.5%) were house wife and 48 (25.9%) were farmers. In this series 75 (40.5%) and 71(38.4%) were diabetic and hypertensive respectively. Of them 51 (27.6%), 20(2.3%) were smoker and betel leaves chewer respectively. While only one (0.5%) was alcoholic. In the study group 68(36.2%), 58(31.4%) and 35(18.9%) had history of jaundice blood transfusion and surgery respectively.

Table I. Distribution of patients according to demographic features (N=185)

Variables		Number (%)
Sex	Male	107 (57.8)
	female	78 (42.2)
Residence	Rural	135(73.0)
	Urban	50 (27.0)
Age	Up to 25 years	3 (1.6)
	26 to 45 years	44 (23.8)
	46 to 60 years	77 (41.6)
	Above	61 (33.0)
Education	Noinstitutional education	58 (31.4)
	Up to class five	47 (25.4)
	Class six to SSC	45 (24.3)
	Above	35 (18.9)
Occupation	Housewife	75 (40.5)
	Farmer	48 (25.9)
	Abroad	12 (6.5)
	Business	14 (7.6)
	Unemployed	8 (4.3)
	Day labourer	6 (3.2)
	Service	4 (2.2)
	others	18 (9.73)
Diabetes	Yes	75 (40.5)
Hypertension	Yes	71 (38.4)
Smoker	Yes	51 (27.6)
Tobacco chewer	Yes	55 (29.7)
Betel leaves and nut	Yes	130(70.3)
Alcohol	Yes	1 (0.5)
History of jaundice	Yes	68 (36.8)
History of blood transfusion	Yes	58 (31.4)
History of surgery	Yes	35 (18.9)

Most common presenting symptoms were abdominal distension (118;63.8%), abdominal pain (87;47%) and swelling of legs (39; 21.1%) (Table II).

Table II. Distribution of patients according to presenting symptom

Variables	Number (%)
Haematemesis	7 (3.8)
Melaena	9 4.9
Encephalopathy	23 (12.4)
Oedema	39 (21.1)
Fever	20 (10.8)
Vomiting	18 (9.7)
Abdominal distension	118 (63.8)
Weakness	17 (9.2)
Respiratory distress	13 (7.0)
Cons tipation	18 (9.7)
Pain abdomen	87 (47.0)
Low urine output	18 (9.7)
Jaundice	21 (11.4)

Of them 86(46.5%) had HBV surface antigen positive and 8 eight (4.3%) had antigen to Hepatitis C virus positive (Table 3). One patient aged 15 years was diagnosed as Wilson's disease. Biochemical examination revealed hypoalbuminaemia in 163 (88.1%). Mean corpuscular volume (MCV) was above 96 fl/lit was in 18 (9.7%) patients. Prothrombin time was up to 15 seconds ((control 12 seconds) were in 42 (22.7%). And ALT levels were within normal limit in 94 (50.8%) patients (Table III).

Table III. Biochemical, haematological and virological features.

Variables		Number (%)
S. albumin	Up to 2 gm/dl	20 (10.8)
	2.1 to 3.5 gm/dl	143 (77.3)
	3.51 and above	22 (11.9)
Prothrombin time	Up to 15.00 sec	42 (22.7)
	15.01 to 18.00 sec	48 (25.9
	Above 18.0 sec	95 (51.4)
Mean corpuscular volume	Up to 75 fl/l	23 (12.4)
	75.1 to 96 fl/l	144 (77.8)
	Above 96 fl/l	18 (9.7)
ALT level	Up to 40 iu/ dl	84 (50.8)
	41 to 80 iu / dl	52 (28.1)
	Above 80 iu/ dl	39 (21.1)
Viral marker	HBsAg positive	86 (46.5)
	HCV positive	8 (4.3)

Sonography revealed typical cirrhotic change in liver in 151(81.6%), heterogeneous echotexture in 13(7.0%) and fatty liver disease in 10(5.4%). Remaining patient with sonologically normal liver had positive viral markers and altered biochemical tests. In this series 20(10.8%) patients had space occupying lesion in liver, 150(81.1%) had ascites and 45(24.3%) had gall stone disease (11 patients underwent laparoscopic cholecystectomy). Three (1.6%) patients of this series had portal vein thrombus (Table IV).

Table IV. Findings at ultrasonographic imaging

Variables	Number (%)
Cirrhotic liver	151 (81.6)
Fatty liver disease	10 (5.4)
Normal	7 (3.8)
Hepatomegaly	4 (2.2)
Irregular heterogenous liver	13 (7.0)
Space occupying lesion	20 (10.8)
Ascites	150 (81.08)
Portal vein thrombus	3 (1.6)
Gall stone disease	45 (24.3)

Table V. Relation of HBV infection with age groups and sex.

Variables		HBV		P value
		Negative N(%)	Positive N(%)	
Age group	Up to 25 y (3)	1(33.3)	2(66.66)	0.005
	26 – 45 y (44)	16(36.36)	28(63.63)	
	46 - 60 y (77)	39.(50.65)	38(49.35)	
	Above 60 (61)	43(70.49)	18(29.51)	
Sex	Female(78)	53(67.95)	25(32.05)	0.001
	Male (107)	46(42.99)	61(5701)	

(Chi-square test was done).

Discussion

The age of patients of CLD & cirrhosis in our series was 15 to 87 years (mean 55.43) with higher incidence above 45 years (74%) which is higher than one report from our country and reports from central India and Eastern coastal India.[18-20] But it is similar to report from Northern India and Eastern India report from Pakistan.[21-23] Another report from central India found patients of CLD and cirrhosis were mostly above 40 years age group with median age 58.5.[24] This difference may be due to difference in population, study design and sample size. In our series males are predominantly affected which is consistent with previous reports from our country, India and Pakistan.[18-24]

In our series most of cases were from rural community which is consistent with report from Ethiopia and contradict with report from Pakistan.[23,25] Incidence of CLD and cirrhosis of liver varies from region to region. Cirrhosis was more common among patients of lower education level and poor economic status in our country from Nepal, India, Pakistan, Ethiopia and Europe.[19-23, 25, 26] Most common presentation of patients in our series was ascites with or without oedema followed by oedema and encephalopathy which is consistent with one report from our country from Nepal.[27-29]

Predominant etiology of CLD and cirrhosis in our series was HBV infection in nearly 46% patients which is consistent with report from our country[27, 28, 30] HCV infection was about 4% only. But report from Pakistan showed higher incidence of HCV infection.[23] But alcoholism is the most common cause in India and Nepal and Srilanka.[29,32,33] In our series further investigations for detection of other causes in majority of cases were not done.

Conclusion:

CLD is a common disease with morbidity and mortality leading to hospitalization. Most common cause of hospitalisaton are ascites, oedema, abdominal pain and encephalopathy. most of patients presented at age 45 years and above. Majority of patients were from rural community with lower economic background. Most common aetiology was HBV infection.

Conflict of Interest:

There is no conflict of interest of any authors in this study.

Acknowledgement:

We are grateful to the hospital authority and staffs of the department of Gastroenterology, Sylhet Women's Medical College Hospital for their kind co-operation.

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