



## CLINICAL PROFILE OF LIVER CIRRHOSIS AT A RURAL TERTIARY CARE CENTRE IN NORTH INDIA

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**ABSTRACT** **Background and Aim:** According to the epidemiology of liver cirrhosis, alcohol-related cirrhosis is on the rise in nations like India, despite the fact that hepatitis B and C are still prevalent in developing nations. It's critical to examine how rising alcohol use patterns in North India are affecting the clinical features of liver cirrhosis. Thus, our goal was to investigate 50 North Indian individuals with cirrhosis of the liver. **Methods:** For a duration of 12 months, 50 patients with liver cirrhosis evidence as determined by imaging, tests, and history were included in this descriptive hospital-based study. **Results:** 72% of the patients in our study were between the ages of 40 and 60, with a mean age of  $50.4 \pm 10.1$ . In our study, over 58% of patients had CTP Class C illness, indicating advanced disease. 88% of the individuals in our study had anemia. Thrombocytopenia was seen in 74%. Additionally, 40% of patients had renal impairment. **Conclusion:** The most productive age group frequently has cirrhosis along with co-morbid conditions such renal failure, thrombocytopenia, and anemia.

**KEYWORDS :** Liver cirrhosis, Clinical profile, CTP**INTRODUCTION**

The final stage of chronic liver disease, known as cirrhosis, is marked by nodule formation and fibrosis of the liver as a result of a long-term damage that changes the liver's typical lobular arrangement. The liver can be damaged by a variety of assaults, such as toxins, viral infections, autoimmune diseases, or genetic disorders. The liver grows scar tissue, or fibrosis, after every insult, yet it retains its ability to function. The majority of the liver tissue fibroses during a protracted damage, resulting in function loss and the onset of cirrhosis.

Hepatic encephalopathy (HE), ascites, spontaneous bacterial peritonitis (SBP), hepatorenal syndrome (HRS), variceal hemorrhage, hepatopulmonary syndrome (HPS), and hepatocellular carcinoma (HCC) are among the problems that can arise from cirrhosis. In the West, alcohol and NASH are the most common etiologies. Viral hepatitis B and C is still prevalent in developing nations, although autoimmune-related cirrhosis and alcohol consumption may be on the rise.<sup>2</sup>

Estimating the impact of changes in alcohol consumption trends over the past few decades in our region on the profile of liver cirrhosis is crucial. Different age and ethnic groupings, as well as geographic, socioeconomic, and etiological factors, can all affect the profile of cirrhosis. Patients are more likely to use hospital services when they reach the level of cirrhosis, which is an advanced stage of the disease. The present study was aimed to evaluate the clinical profile of liver cirrhosis at a rural tertiary care centre in North India

**Methods**

50 patients with liver cirrhosis evidence, as determined by imaging, tests, and history, were included in this 12-month descriptive hospital-based study at Dr. Rajendra Prasad Government Medical College, Kangra at Tanda. Patients who were not cirrhotic or who declined to participate in the study were not included.

**Methodology**

Every consecutive liver cirrhosis patient who volunteered to take part underwent a focused history and examination. A thorough history and demographic profile were obtained. A thorough comprehensive analysis was carried out. To ascertain the disease prognosis, etiology, and complications at the time of presentation, a thorough examination of the patients was conducted. On a questionnaire created especially for this purpose, data was entered. The variables were noted and examined.

**Statistical Analysis**

Data were recorded into Microsoft® Excel workbook 2007 and exported into SPSS v21.0 (IBM, USA) for statistical analysis. Categorical data were presented as frequency and percentages. Quantitative data were presented as mean and standard deviation.

**RESULTS****General Characteristics**

In our study, we observed that 7 patients (14%) were in the age group of less than 40 years, 18 patients (36%) were in the age group of 40-50 years, 18 patients (36%) were in the age group of 51-60 years and 7 patients (14%) were more than 60. The mean age was  $50.4 \pm 10.1$  years. The most common symptom was abdominal distension (50%) followed by upper GI bleed (30%), altered sensorium (20%), and jaundice (10%). Majority of the patients (58%) in our study were in CTP class C, followed by 16 patients (32%) in CTP class B, and 5 patients (10%) in CTP class A (Table 1).

**Table 1: General Characteristics**

|                      | Frequency | Percentage |
|----------------------|-----------|------------|
| Age Group (Years)    |           |            |
| <40                  | 7         | 14.0       |
| 40-50                | 18        | 36.0       |
| 51-60                | 18        | 36.0       |
| >60                  | 7         | 14.0       |
| Symptoms             |           |            |
| Upper GI bleed       | 15        | 30.0       |
| Abdominal distension | 25        | 50.0       |
| Altered sensorium    | 10        | 20.0       |
| Jaundice             | 5         | 10.0       |
| CTP score            |           |            |
| A                    | 5         | 10.0       |
| B                    | 16        | 32.0       |
| C                    | 29        | 58.0       |

**Hematological Profile**

In our study, we observed that 44 patients (88%) had anemia. The mean value of hemoglobin was  $9.3 \pm 3.1$  g/dl. We also observed that 9 patients (18%) had low TLC, 30 patients (60%) had normal TLC and 11 patients (22%) had higher TLC. Mean value of TLC was  $8970.7 \pm 5489.7$ /microliter. We also observed that 37 patients (74%) had thrombocytopenia and 13 patients (26%) had normal platelets. Mean platelet count was  $104810.0 \pm 53868.5$ /microliter. We also observed that 4 patients (8%) had low MCV, 20 patients (40%) had normal MCV, and 26 patients (52%) had macrocytosis. The mean value of MCV was  $96.8 \pm 11.3$ fL. (Table 2)

**Table 2: Hematological Profile**

|                   | Frequency | Percentage |
|-------------------|-----------|------------|
| Hemoglobin (g/dl) |           |            |
| Anemia            | 44        | 88.0       |
| Normal            | 6         | 12.0       |
| TLC (/microliter) |           |            |
| Low               | 9         | 18.0       |
| Normal            | 30        | 60.0       |
| Higher            | 11        | 22.0       |

| Platelet (/microliter) |    |      |
|------------------------|----|------|
| Low                    | 37 | 74.0 |
| Normal                 | 13 | 26.0 |
| MCV (fL)               |    |      |
| Low                    | 4  | 8.0  |
| Normal                 | 20 | 40.0 |
| Higher                 | 26 | 52.0 |

#### Liver Function Profile

In our study, we observed that out of 50 patients, 6 patients (12%) had normal bilirubin and 44 patients (88%) had higher bilirubin. Mean value of bilirubin was  $5.3 \pm 6.4$  mg/dl. We also observed that out of 50 patients, 10 patients (20%) had normal SGOT and 40 patients (80%) had higher SGOT. Mean value of SGOT was  $149.1 \pm 161.0$  IU/L. Out of 50 patients, 10 patients (20%) had normal SGPT and 40 patients (80%) had higher SGPT. Mean value of SGPT was  $70.8 \pm 79.6$  IU/L. We also observed that out of 50 patients, 14 patients (28%) had low total protein, 34 patients (68%) had normal total protein and 2 patients (4%) had higher total protein. Mean value of total protein was  $7.7 \pm 9.2$  g/dl. Out of 50 patients, 41 patients (82%) had low albumin, 6 patients (12%) had normal albumin and 3 patients (6%) had higher albumin. Mean value albumin was  $3.5 \pm 4.7$  g/dl (Table 3).

**Table 3: Liver Function Profile**

|                      | Frequency | Percentage |
|----------------------|-----------|------------|
| Bilirubin (mg/dl)    |           |            |
| Low                  | 0         | 0          |
| Normal               | 6         | 12.0       |
| Higher               | 44        | 88.0       |
| SGOT (IU/L)          |           |            |
| Low                  | 0         | 0          |
| Normal               | 10        | 20.0       |
| Higher               | 40        | 80.0       |
| SGPT (IU/L)          |           |            |
| Low                  | 0         | 0          |
| Normal               | 10        | 20.0       |
| Higher               | 40        | 80.0       |
| Total protein (g/dl) |           |            |
| Low                  | 14        | 28.0       |
| Normal               | 34        | 68.0       |
| Higher               | 2         | 4.0        |
| Total albumin (g/dl) |           |            |
| Low                  | 41        | 82.0       |
| Normal               | 6         | 12.0       |
| Higher               | 3         | 9.0        |

#### Renal Function Profile

We observed that 30 patients (60%) had normal urea, 20 patients (40%) had raised urea. Mean value of urea was  $53.3 \pm 32.9$  mg/dl. We also observed that out of 50 patients, 30 patients (60%) had low creatinine and 20 patients (40%) had higher creatinine. Mean value of creatinine was  $1.52 \pm 1.32$  mg/dl (Table 4).

**Table 4: Renal Function Profile**

|                    | Frequency | Percentage |
|--------------------|-----------|------------|
| Urea (mg/dl)       |           |            |
| Low                | 0         | 0          |
| Normal             | 30        | 60.0       |
| Higher             | 20        | 20.0       |
| Creatinine (mg/dl) |           |            |
| Low                | 0         | 0          |
| Normal             | 30        | 60.0       |
| Higher             | 20        | 40.0       |

#### Coagulogram

We observed that out of 50 patients, 4 patients (8%) had normal PT and 46 patients (92%) had higher PT. Mean value of PT was  $22.1 \pm 12.2$  secs. We also observed that out of 50 patients, 1 patient (2%) had low INR, 4 patients (8%) had normal INR and 45 patients (90%) had higher INR. Mean value of INR was  $2.1 \pm 1.8$  (Table 5).

**Table 5: Coagulogram**

|           | Frequency | Percentage |
|-----------|-----------|------------|
| PT (secs) |           |            |
| Low       | 0         | 0          |
| Normal    | 4         | 8.0        |

|        |    |      |
|--------|----|------|
| Higher | 46 | 92.0 |
| INR    |    |      |
| Low    | 1  | 2.0  |
| Normal | 4  | 8.0  |
| Higher | 45 | 90.0 |

#### DISCUSSION

The clinical profile among the cirrhosis patients is largely unknown in this part of North India. In our study, 72% patients aged between 40-60 years with a mean age was  $50.4 \pm 10.1$  years. Paul et al found a similar mean age of  $45.1 \pm 13.1$  years.<sup>3</sup> Another study done among multiracial Asian population by Qua et al among 460 patients showed a mean age of 58.8 yrs range (15-87 years).<sup>4</sup>

Around 58% patients had CTP score C disease suggesting advanced disease in our study. Similar findings were seen by Hajiani et al, CTP score C cirrhosis (51%) patients.<sup>5</sup> Khan et al too showed that majority were CTP score A category (83.3%).<sup>6</sup>

In our study, 88% patients were anemic. In the study by Frijio Jose et al, 33 (86.8%) patients had anemia and the normocytic normochromic type of anemia was the most common (39.4%) type seen.<sup>7</sup> In this study, 74% had thrombocytopenia. Thrombocytopenia is a common hematologic complication seen in patients with chronic liver disease (CLD). The pathophysiology of thrombocytopenia in CLD is multifactorial, primarily stemming from platelet sequestration and decreased platelet production.

In our study, 40% patients also had kidney dysfunction. Renal dysfunction is a common and serious problem in patients with advanced liver disease. In particular, alterations in renal physiology in acute liver failure or cirrhosis with ascites can predispose patients to a specific functional form of renal failure known as HRS. In a study by Das et al, 10% patients CLD developed acute kidney injury, 20% had HRS.<sup>8</sup>

#### CONCLUSION

Liver cirrhosis, which affects people between the ages of 40 and 60, is a serious health issue in our area. A limitation of the research was the short follow-up period for patients and the lack of recording of the effects of different treatment approaches.

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