

## Etiological Distribution for Chronic Liver Disease at Tertiary Care Hospital of Southern Rajasthan

Jahnvi shirmal<sup>1</sup>, Manvendra Singh Rao<sup>1</sup>, Dr. Jishi Joshi Joseph<sup>2</sup>, Dr. Pankaj Gupta<sup>3</sup>

<sup>1</sup> Pharm D Intern, Dept. of Pharmacy Practice, Geetanjali Institute of Pharmacy, Geetanjali University, Udaipur, Rajasthan.

<sup>2</sup> Assistant Professor, Dept. of Pharmacy Practice, Geetanjali Institute of Pharmacy, Geetanjali University, Udaipur, Rajasthan.

<sup>3</sup> M.D, D.N.B, (HOD) Gastroenterologist, Geetanjali Medical College and Hospital, Udaipur, Rajasthan.

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### ABSTRACT:

**Introduction:** Chronic liver disease is defined as those who exhibit symptoms of liver disease for longer than six months. It happens when the liver develops irreversible structural abnormalities as a result of persistent hepatocyte injury. This Investigate the Etiological distribution For Chronic Liver Disease At Tertiary Care Hospital of Southern Rajasthan.

**Materials and Methods:** It is a Six-Month Observational Study was conducted at Gastroenterology In-Patient Department of Geetanjali Medical Collage and Hospital, Udaipur. Study Enrolled 120 In-Patient meeting Inclusion and Exclusion Criteria, with data collected on Baseline Demographic Details, Chief Complaint, Etiology, and CTP Score.

**Result:** Among the studied population, most common age of patients with CLD 31-40 (30 patients, or 25%), followed by 41-50 (27 patients, or 22%) and 51-60 (21 patients, or 18%). 18 patients (15%), 14 patients (12%), and 10 patients (8%), respectively, were in the 61-70 range. The average age of all research participants was 47.75±14.85 years. In the present study we have found Out of 120 CLD cases, 88 (72%) were males and 32(27%) were females. according to the Aetiology, was ALD (60, 50.00%), followed by cryptogenic (21, 17.50%), viral infection (8, 6.67%), and NAFLD (31, 31%). In this Study, Abdominal pain (88, 36%), Abdominal distention (36, 15%), generalized weakness (31, 13%), vomiting and blacks tool (24, 10%), jaundice (16, 7%), decreased urine (15, 6%), and fever (12, 5%) were the most common symptoms among the CLD patients. The least common symptoms were abdominal fullness (4 patients, 2%), pedal edema,

and sensorium alteration (11 patients, 4%). Most patients presented with pain in abdomen. Study conducted by sammer k Mehta where he concluded most patient presented with complaint generalized weakness. The largest proportion of patients with CLD are in Class C (72, 60%), followed by Class B(36, 30%) and Class A (12, 10%).

**Conclusion:** The findings concluded that the most patient were males (88) followed by females (32). alcohol is main causes of liver diseases followed by other factors like viral infections, NAFLD etc. age group 30- 41 are mostly affected by CLD seen during study also we have found use of alcohol increased in youngster too .

**Keywords:** Alcoholic Fatty Liver Disease, Alcoholic Liver Disease, Chronic Liver Disease, Child-Turcotte-Pugh, Non-Alcoholic Fatty Liver Disease.

### I. INTRODUCTION

The liver, the body's primary metabolic organ, weighs about 1.4 kg in females and 1.6 kg in males, and is located in the right upper quadrant beneath the diaphragm. It is divided into two lobes—right (larger) and left—which are composed of millions of hepatocytes arranged in lobules. About 80% of its blood supply, rich in nutrients from the small intestine, comes via the hepatic portal vein, while the hepatic artery provides the remaining 20% oxygenated blood. Most hepatocyte injuries resolve spontaneously, but severe cases can lead to acute liver failure, often requiring transplantation. Chronic liver disease (CLD) refers to hepatic injury persisting for more than six months, causing irreversible structural changes. CLD is one of the leading causes of liver-related deaths worldwide, responsible for around 1.2

million deaths each year. Of these, approximately 4,000 are due to cirrhosis-related complications and 400,000 from viral hepatitis or hepatocellular carcinoma. Globally, cirrhosis ranks 11th among all causes of death. In 2017, an estimated 1.6 billion people had chronic liver disease (CLD), most commonly due to NAFLD (60%), hepatitis B (29%), hepatitis C (9%), and alcohol-related liver disease (9%), with men affected more often than women.

The prevalence of CLD has increased 1.5–2 times in recent years. In many cases, it develops secondary to portal hypertension. On a microscopic level, cirrhosis involves gradual replacement of healthy liver tissue with fibrous tissue. Most patients remain asymptomatic in the compensated stage and are often diagnosed incidentally. Once decompensation occurs, mortality rises sharply, with one-year fatality rates exceeding 80% in severe cases unless a liver transplant is performed.

Major causes of liver disease include excessive alcohol intake, viral hepatitis (A–E), non-alcoholic fatty liver disease, drug-induced liver injury, genetic disorders (hemochromatosis, Wilson's disease,  $\alpha$ -1 antitrypsin deficiency), and autoimmune conditions (autoimmune hepatitis, primary biliary cholangitis, primary sclerosing cholangitis). Disease progression may follow a spectrum from steatosis and hepatitis to fibrosis and cirrhosis, which is a leading global cause of death. Cirrhosis can lead to complications such as portal hypertension, ascites, hepatic encephalopathy, hepatorenal syndrome, and hepatocellular carcinoma.

Assessment of liver function relies on serum albumin, prothrombin time, bilirubin, and liver enzymes (ALT, AST, ALP, GGT), while disease severity can be graded using the Child–Pugh score or MELD score.

The Child–Turcotte–Pugh (CTP) score, introduced in 1964, helps predict mortality in CLD using five parameters: ascites, hepatic encephalopathy, serum bilirubin, serum albumin, and INR. Patients are classified into Class A (5–6 points), Class B (7–9 points), or Class C (10–15 points). Combining CTP scoring with endoscopic findings helps assess disease severity.

Common clinical features include jaundice, pale stools, dark urine, spider naevi, pruritus, splenomegaly, varices, gynecomastia, and fluid retention. Early detection and management are essential to prevent progression to end-stage liver disease.

## AIM & OBJECTIVE:

**Aim:** The Main Aim Is to study the Etiological Distribution for CLD.

**Objective:** Estimate various causes of liver disease. Estimate Severity of liver disease with help CTP Score. Evaluate mortality risk of CLD.

## II. METHODOLOGY

This observational study was conducted over six months in the Gastroenterology Department of Geetanjali Medical Collage & Hospital, Udaipur, Involving Adult Male and Female Patient with CLD. The institutional Ethics Committee sanctioned the research (Ref. No.: GU/HREC/EC/2024/2621) on September 9<sup>th</sup> 2024. Participants received a complete briefing on the study's purpose, procedures, and after providing the written informed consent, they included in the research.

A specially designed data collection form was used to collect socio- demographic details, medical and medication history, mineral or drug intake, and concomitant consumption details. Eligible patients, identified through In-Patient department based on defined inclusion and exclusion criteria.

**Inclusion criteria:** Patient with Confirmed Case of CLD Patients above 18 Years.

**Exclusion criteria:** Patients with in complete data AND Not Willing to Give Consent.

Informed Consent was obtained from all participants after explaining the study's purpose, procedures, and potential risks.

## III. RESULTS

### • Age:

In the current study, the age group of 41–50 represents the largest proportion of CLD patients (30 patients, or 25%), followed by 41 to 50 (27 patients, or 22%) and 51 to 60 (21 patients, or 18%). 18 patients (15%), 14 patients (12%), and 10 patients (8%), respectively, were in the 61–70 range. The average age of all research participants was  $47.75 \pm 14.85$  years.

### • Gender:

Out of 120 CLD cases, 88 (72%) were males and 32 (27%) were females.

### • Aetiology:

The Primary cause of CLD, according to the Aetiology, was ALD (60, 50.00%), followed by

cryptogenic (21, 17.50%), viral infection (8, 6.67%), and NAFLD (31, 31%).

- **Symptoms:**

In this Study, Abdominal pain (88, 36%), abdominal distention (36, 15%), generalized weakness (31, 13%), vomiting and black stool (24, 10%), jaundice (16, 7%), decreased urine (15, 6%), and fever (12, 5%) were the most common symptoms among the CLD patients. The least common symptoms were abdominal fullness (4 patients, 2%), pedal edema, and sensorium alteration (11 patients, 4%).

- **CTP Score:**

The largest proportion of patients in this study with CLD are in Class C (72, 60%), followed by Class B (36, 30%) and Class A (12, 10%).

- **Alcohol:**

In the present study we found out patient with CLD had alcohol history in 82 patient found.

- **Relation between alcohol and liver severity:**

In this study, we have found Chi-square statistic = 14.63 P-value = 0.00067 Since,  $P < 0.05$  there is an statically major link within alcohol consumption & liver disease severity. Alcohol is likely linked to the increased severity seen in class c cases. Total death form CLD we have found that 30 patient died due to severity and class C shows most death during study followed by class B and A.

- **Relation between CTP Score and death:**

It shows Chi square statistic= 2.07, P-value = 0.355 Since,  $P > 0.05$  there is no significant association within the CTP class and death outcome.

#### IV. DISCUSSION

This observational study, conducted in a tertiary care hospital from September 2024 to February 2025, analyzed 120 patients to determine the aetiology of chronic liver disease (CLD). The predominant age group affected was 31-40 years (25%), followed by 41-50 years (22%) and 51-60 years (18%), with an average age of  $47.75 \pm 14.85$  years. Most patients were male (72%). Alcohol-related liver disease (ALD) emerged as the primary cause (50%), followed by non-alcoholic fatty liver disease (NAFLD, 31%), and cryptogenic origins (17.5%). Symptoms included abdominal pain (36%) and weakness (13%), with a significant link between alcohol consumption and liver disease

severity found ( $p=0.00067$ ). The majority of patients classified as CTP class C (60%), with a total of 30 deaths observed, predominantly in this class. Statistical analysis indicated no significant association between CTP class and death outcome ( $p=0.355$ ).

#### V. CONCLUSION

This Observational Study Concluded that most patient were males (88) followed by females (32) .alcohol is main causes of liver diseases followed by other factors like viral infections, NAFLD etc. age group 30- 41 are mostly affected by CLD seen during study also we have found use of alcohol increased in youngster too . CTP score gives us an idea of severity of liver diseases. It helped many patients to detect early and get medical help before end stage liver disease. Alcohol use has been increased in this year's where percentage of female who consume alcohol increased too. Which lead to liver disease and most people were not aware of effects cause by prominent alcohol use lack of knowledge of alcohol percentage while drinking is one of a reason for liver disease. Mortality rate has been increased due to alcohol consumptions it effected quality of life in most patients and family.

#### VI. ACKNOWLEDGEMENT

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#### CONFLICT OF INTEREST:

The authors declare that there is no conflict of interest regarding the publication of this manuscript.

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**LIST OF TABLES:**

Age	Number of patient	Percentage
20-30	14	12%
31-40	31	25%
41-50	27	22%
51-60	21	18%
61-70	18	15%
71-80	10	8%

**Table 1: Age Distribution of CLD Patients**

Gender	Total patient
F	32
M	88
GrandTotal	120

**Table 2: Gender-wise Distribution of Patients**

CTP class	Patients	Percentage
Class C	72	60%
Class B	36	30%
Class C	12	10%

**Table 3: Distribution of Patients by CTP Class**

Alcohol	Patient
Yes	82
No	38
Total	120

**Table 4: Distribution of Patients by Alcohol Consumption Status**

Symptoms	Sum of patients	Percentage
Pain in abdomen	88	35%
Abdominal distention	36	15%
Generalized weakness	31	13%
Vomiting and black stool	24	10%
Jaundice	16	7%
Reduced urine	15	6%
Fever	12	5%
Pedal edema	11	4%
Alteration in sensorium	11	4%
Abdominal fullness	4	2%

**Table 5: Distribution of Patients by Presenting Symptoms**

Alcohol	CTPScore			Total
	Class A	Class B	Class C	
Yes	2	24	56	82
No	9	11	18	38

Table 6: CTP Class Distribution by Alcohol Consumption

	Class A	Class B	Class C	Total
Death	1	9	20	30
Survival	11	27	52	90
Total	12	36	72	120

Table 7: Patient Outcomes by CTP Class

LIST OF FIGURES:

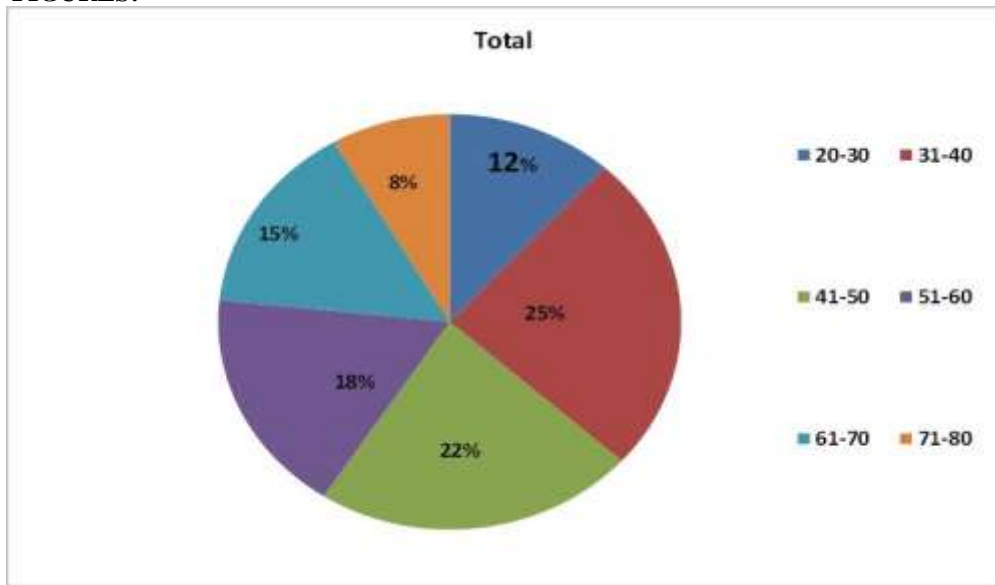


Figure 1: Age-wise Distribution of Patients (in Percentages)

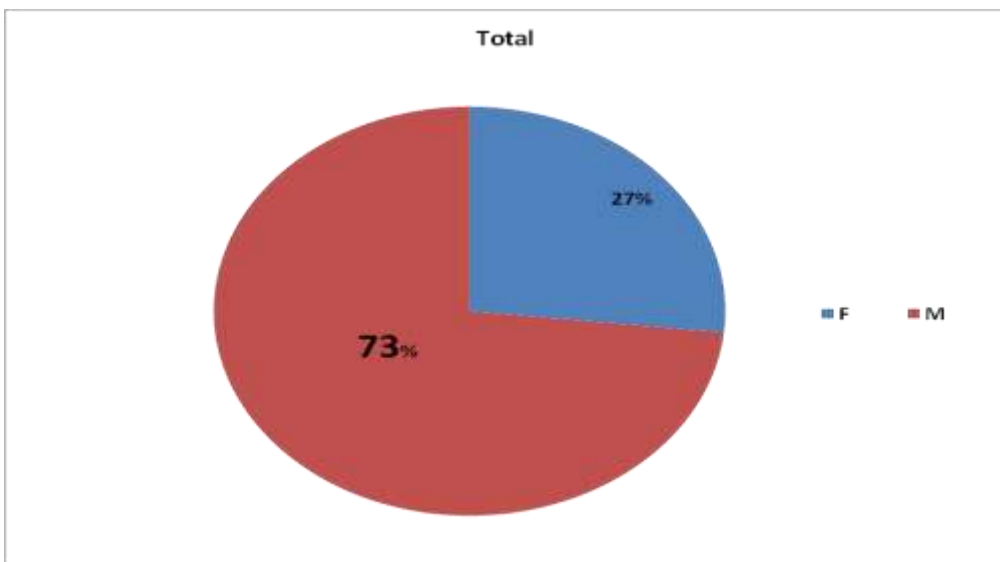


Figure 2: Gender-wise Distribution of Patients (in Percentages)

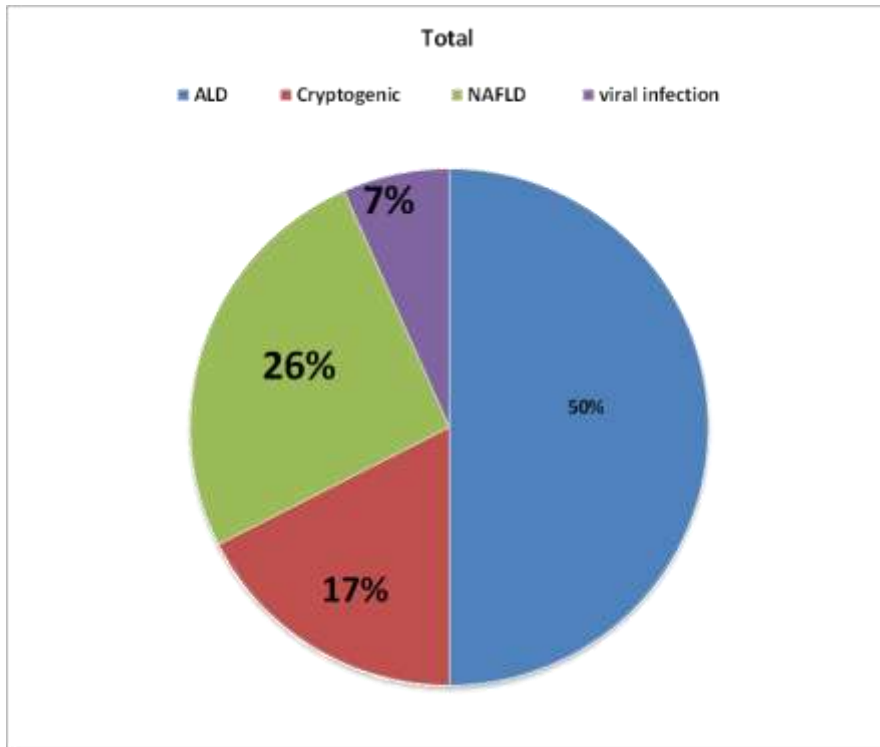


Figure 3: Distribution of Patients by Underlying Liver Disease Etiology

CTP Class Distribution of Patients with CLD

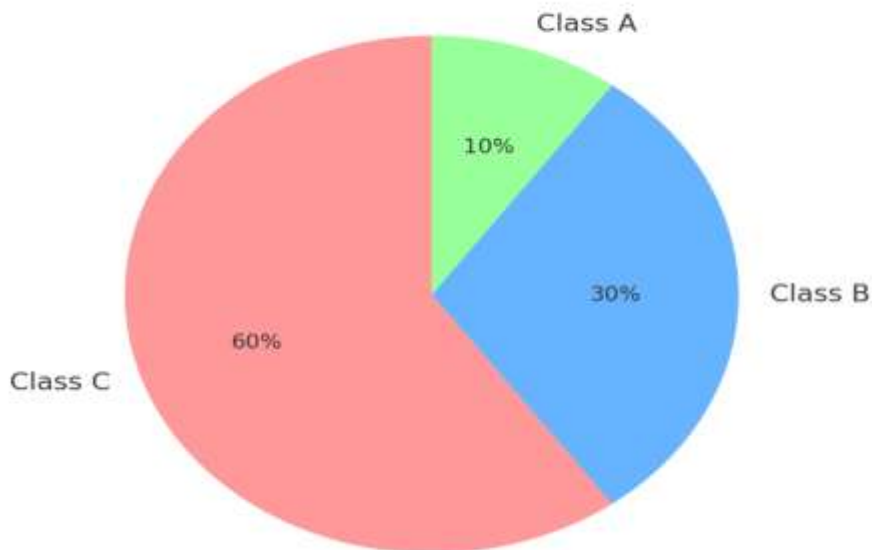


Figure 4: CTP Class Distribution of Patients with CLD

### Alcohol History among Patients with CLD

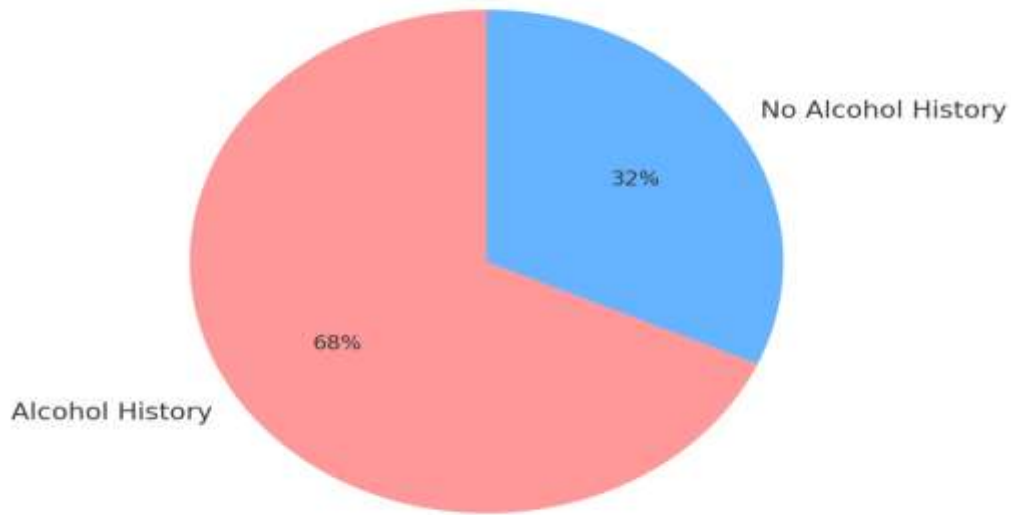


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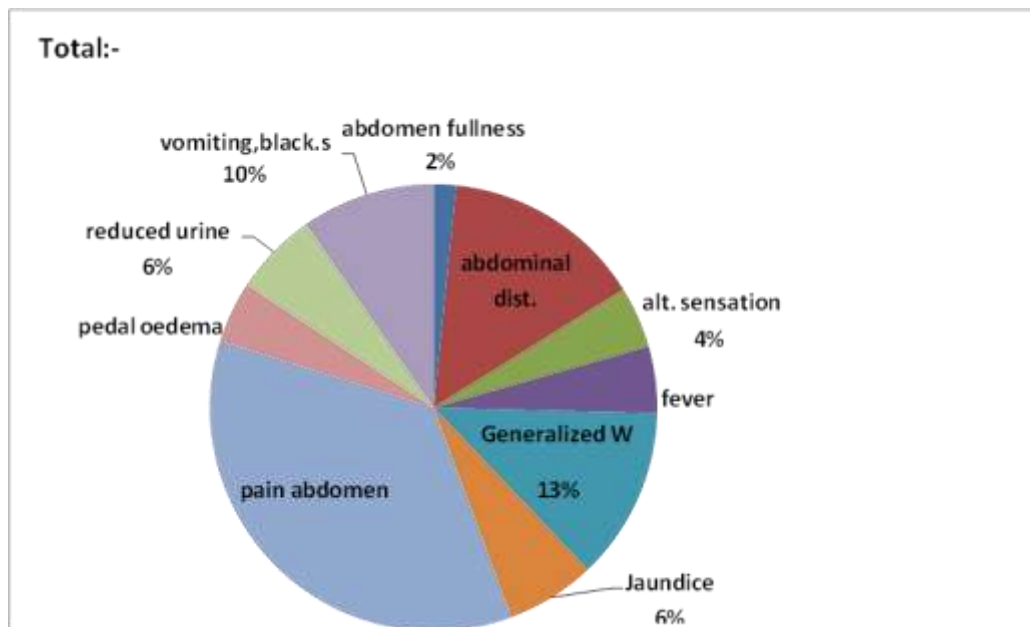


Figure 6: Distribution of Patients by Presenting Symptoms