

## Research Article



## Assessment of Clinical Profile and Prescription Pattern of Drugs in Alcoholic Liver Disease and Hepatitis in a Tertiary Care Hospital

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### ABSTRACT

Alcoholic Liver Disease is a serious consequence of drinking alcohol. Hepatitis is the inflammation of liver mainly caused by virus. Since diagnosis of the liver disorders is so difficult, identification of its demographics is of great importance in present health scenario to understand more about the diseases. The objective of the study is to assess the clinical profile of patients with alcoholic liver disease and hepatitis, to assess the prescription pattern of drugs in alcoholic liver disease and hepatitis, to assess the duration of hospital stay of the patient. This was a prospective observational study carried out for a period of six months in medicine and pediatric in-patient department of Basaveshwara Medical College Hospital & Research Centre, Chitradurga. Out of 86 patients, 52 patients were diagnosed with alcoholic liver disease and 34 with hepatitis. Among all, 66 were males and 20 were found to be females. In case of alcoholic liver disease majority of patients were from urban area and in case of hepatitis majority were from rural area. Duration of hospital stay was found to be more in alcoholic liver disease than hepatitis. The most common symptom found in alcoholic liver disease was abdominal pain and in hepatitis was fever. Antibiotics were the most commonly prescribed drug in both the disease. The study concludes that age, gender, urbanization etc contribute to the development of liver disorders. Early diagnosis and treatment of alcoholic liver disease and hepatitis is necessary to prevent the development of further complications.

**Keywords:** Alcoholic liver disease, Hepatitis, Demographics.

### INTRODUCTION

Liver is a vital organ of digestive system and is responsible for carrying out variety of functions like protein synthesis, metabolism, storage of carbohydrates and amino acids, production of hormones necessary for digestion, synthesizing thrombopoietin and albumin etc.<sup>1</sup> Alcoholic liver disease (ALD), hepatitis B virus infection, hepatitis C virus infection, non alcoholic fatty liver disease, cirrhosis, hepatocellular carcinoma (HCC) etc are the major illness which leads to morbidity and mortality across the world.<sup>2</sup>

In India, ALD is a major health care problem and is associated with increased amount of alcohol consumption.<sup>3</sup> ALD is diagnosed based on taking history of alcohol intake, physical signs of the patient and laboratory data which support the presence of disease.<sup>4</sup> Viral hepatitis is mainly caused by viruses such as hepatitis A, B, C, delta and E. Regardless of the virus responsible for the patient's illness the clinical, biochemical, immune serological, and histological, features of hepatitis follow similar patterns<sup>5</sup>. Both viral hepatitis and ALD results in cirrhosis of the liver and other complications like portal hypertension, variceal bleeding, hepatic encephalopathy, as cites, spontaneous bacterial peritonitis, etc.<sup>6</sup> Despite liver transplantation being the only option for certain patients having cirrhosis associated with this diseases, early diagnosis, and treatment of its complications, will result in improving the quality of life of patients.<sup>7</sup> This study aims at identifying

the symptoms, nature and treatment of ALD and hepatitis.

### METHODOLOGY

This prospective observational study was conducted at General Medicine and Pediatric in-patient department of Basaveshwara Medical College Hospital & Research Centre, Chitradurga Karnataka over a period of six months (November 2015 to April 2016). The study was approved by the Institutional Ethical Committee of SJM College of Pharmacy, Chitradurga.

The patients who had visited the in-patient department of the study sites during six months of the study period were eligible for the enrolment. Patients who satisfied the following inclusion criteria were enrolled. All the patients who were presented to the medicine and paediatric in-patient departments of the hospital were reviewed daily to identify the patients diagnosed with alcoholic liver disease and hepatitis. Patients who had psychiatric problem and pregnant women who had liver diseases were excluded from the study.

Patients demographic details, location, social history, clinical data such as symptoms, diagnosis, laboratory profile, radiographic details, duration of hospital stay etc and therapeutic data such as name of the drug, dose, route, frequency, duration of therapy and other relevant details were documented in a suitably designed individual case record form by reviewing their prescriptions, medical records and by interviewing the patients and/or care takers.



**Statistical analysis**

The data were entered in Microsoft excel version 13 and analyzed by using IBM SPSS version 16. Categorical data were analyzed by frequency and percentage calculation method and quantitative data were analyzed by measure of Central tendency.

**RESULTS**

A total of 86 patients were included in the study, out of which 52 were identified with ALD and 34 were identified with hepatitis. Majority of ALD patients were under the age group 41-50 years (28.8%) and in case of hepatitis majority (26.5%) were under the age group 1-10 years. The mean age in ALD and hepatitis was found to be 50.73 ±14.02 and 24 ± 16.6 respectively.

Among ALD patients 51 (98.1%) were males and only one (1.9 %) was female. But among hepatitis patients 19 (55.9

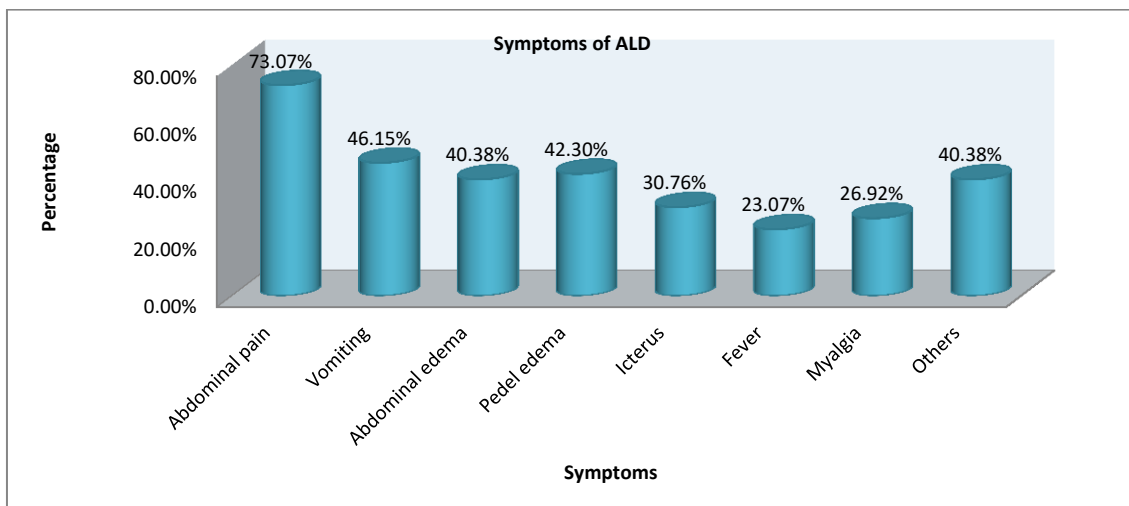
%) were females and 15 (44.1 %) were males. In case of ALD majority of the patients were from urban area (55.8 %) and in case of hepatitis majority were from rural area(55.9%).

In this study, the most of the ALD (48.1%) and hepatitis (61.8%) patients were found to have the duration of hospital stay in the range of 6-8 days. This is followed by 9-11 days in ALD (36.5%) and 3-5 days in hepatitis (35.3%). In average ALD patients stay more at the hospital.

**Symptoms**

**Symptoms associated with ALD**

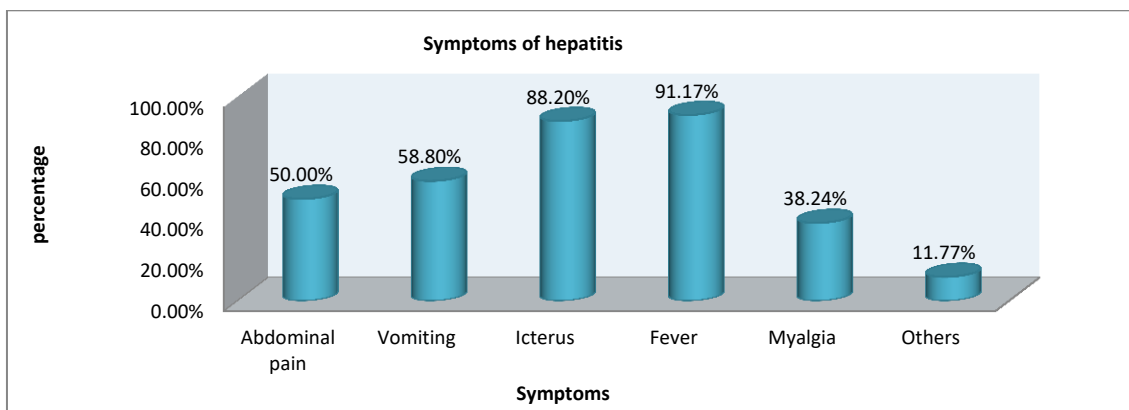
The study shows that abdominal pain (73.07 %), followed by vomiting (46.15 %) and pedal edema (42.30 %) were the most common symptoms. Only 12 (23.07%) patients were found to have fever.



**Figure 1:** Distribution of ALD patients according to the symptoms

**Symptoms associated with hepatitis**

Among 34 hepatitis patients fever (91.17 %) followed by icterus (88.20 %) was the most commonly found symptom. Other symptoms least found include loss of appetite and paleness of the skin (11.77%).



**Figure 2:** Distribution of hepatitis patients according to symptoms

**Laboratory profile**

Serum glutamic oxaloacetic transaminase (SGOT), serum glutamic pyruvic transaminase (SGPT), alkaline phosphatase (ALP), total bilirubin, direct bilirubin and

serum albumin as well as total protein were found to be elevated in both the diseases. SGOT and SGPT levels were significantly high in hepatitis while ALP level was high in ALD. Serum albumin level was found to be less in ALD than in hepatitis.



**Complications**

**Complications associated with ALD**

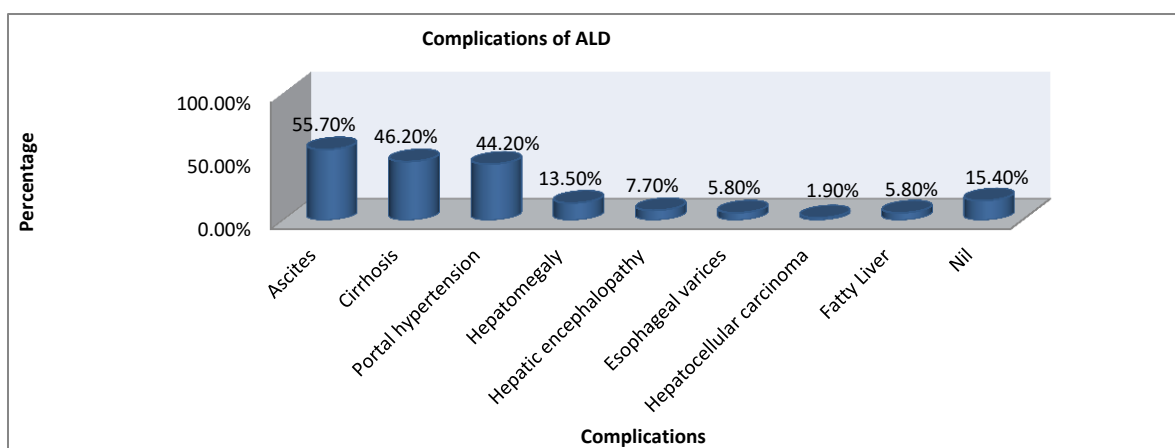
The most common complication found in ALD was ascites (55.7%) followed by cirrhosis (46.2%). The least found complication was hepatocellular carcinoma (HCC). Only one patient was observed with HCC. Eight (15.4 %) patients were observed with no complications.

**Table 1:** Descriptive statistics of laboratory profile in ALD

	N	Mean	Std. Deviation
SGOT	51	134.67	83.24870
SGPT	51	118.41	79.76169
ALP	41	161.76	63.52904
Total bilirubin	51	3.7725	2.42976
Direct bilirubin	51	1.7792	1.32917
Serum albumin	35	2.8189	.68550
Total protein	37	5.9108	1.22191

**Table 2:** Descriptive statistics of laboratory profile in hepatitis

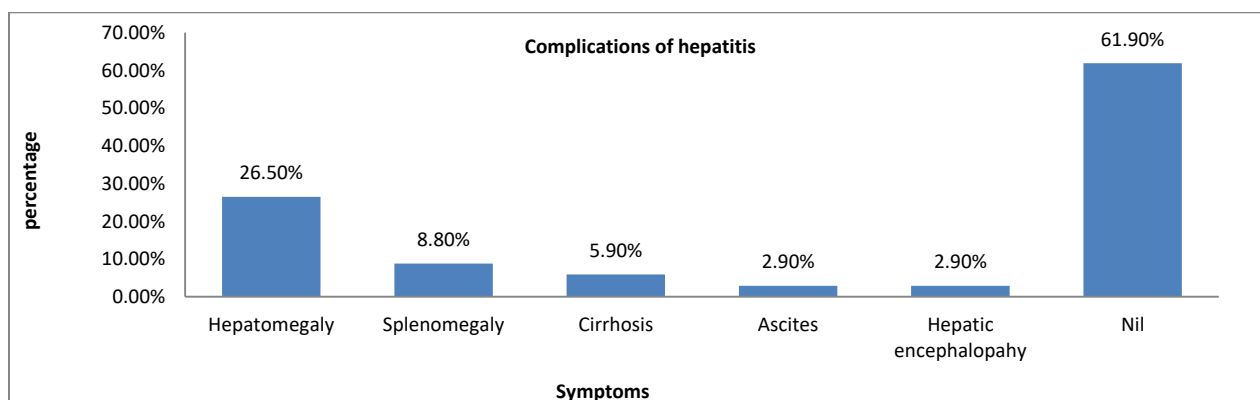
	N	Mean	Std. Deviation
SGOT	32	249.72	223.91909
SGPT	32	161.59	169.59532
ALP	22	140.91	57.66563
Total bilirubin	34	4.9888	2.58061
Direct bilirubin	34	2.0521	1.11718
Serum albumin	15	3.12	0.65
Total protein	19	5.9	0.74



**Figure 3:** Complications associated with ALD

**3.3b Complications associated with hepatitis**

In hepatitis most of the patients (61.9%) were found to have no complications and among the complications hepatomegaly was the most common (26.5%). Least found were as cites and hepatic encephalopathy (2.9% each).

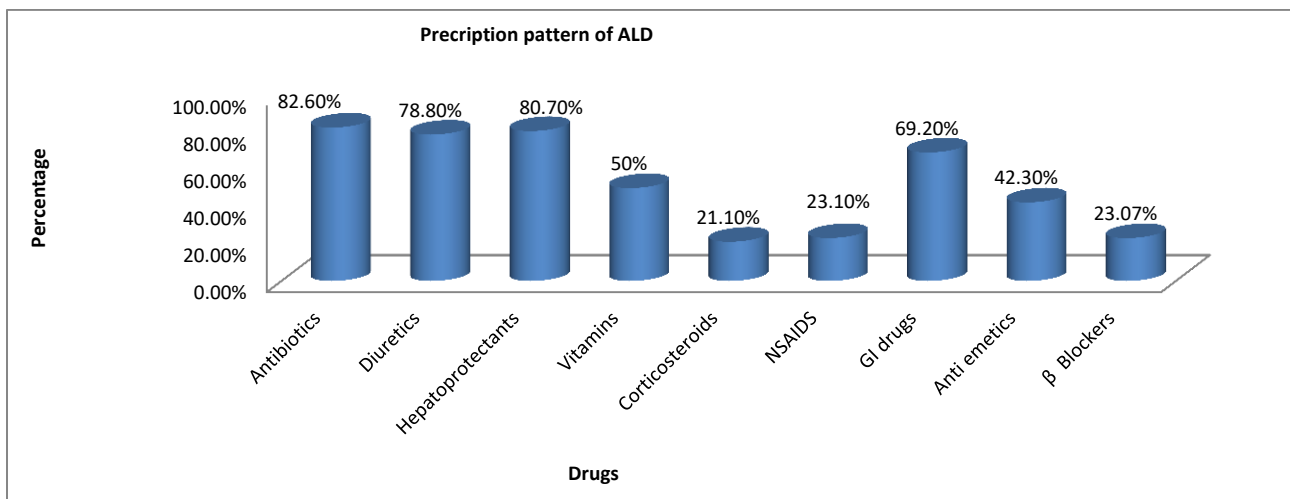


**Figure 4:** Complications associated with hepatitis

**Prescription pattern**

**Prescription pattern of drugs in ALD**

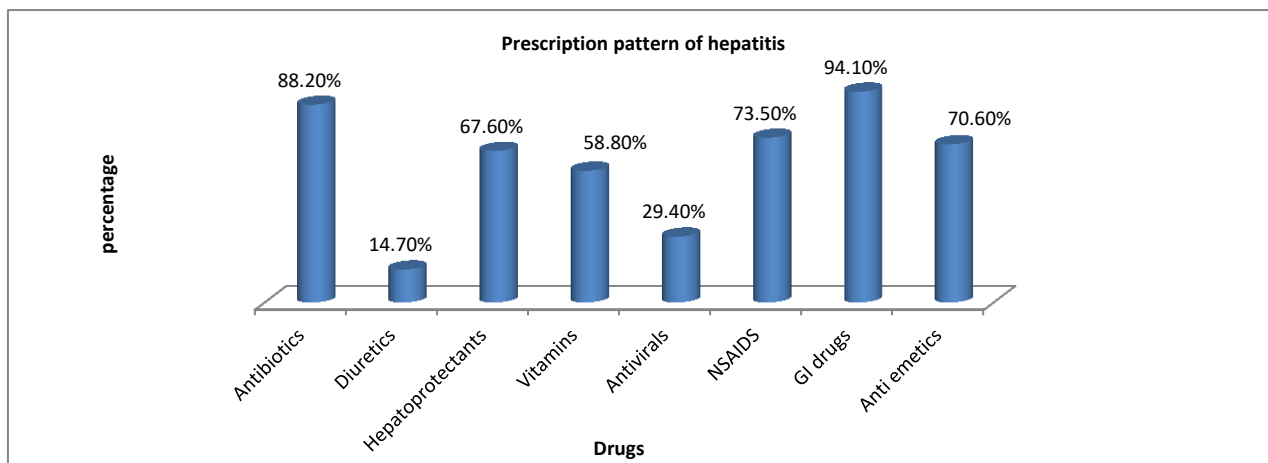
The most commonly prescribed drugs in ALD patients were antibiotics (82.6%) followed by hepato protectants (80.7%) and diuretics (78.8%). The least prescribed was corticosteroids (21.1%).



**Figure 5:** Prescription pattern of drugs in ALD

**Prescription pattern of drugs in hepatitis**

In the present study, Gastro intestinal (GI) drugs were prescribed more (94.1%), followed by antibiotics (88.2%) and NSAIDS (73.5%). The least prescribed drug was diuretics (14.7%).



**Figure 6:** Prescription pattern of drugs in hepatitis

Among all most prescribed antibiotics were cephalosporins (59.2%) followed by penicillins (17.3%). Meropenem (1.9%) was the least prescribed antibiotic.

The most prescribed anti-viral agent (55 %) was entecavir for hepatitis B patients. One patient with hepatitis B was not on any of the antiviral agent.

**DISCUSSION**

**Suthar H et al** conducted a clinical survey on clinical profile of cases of alcoholic liver disease. Their study result shows that 60% of the patients have chief complaint of abdominal distension and malena. Jaundice(60%) and ascites (60%) were also the commonly found symptoms.<sup>3</sup>Inthis study the most commonly found symptoms in ALD were abdominal pain and jaundice and

in case of hepatitis the majority of the patients develop fever (91.17%) and icterus (88.20%).

In this study the parameters that found to increase include SGOT, SGPT, ALP, total bilirubin and direct bilirubin. ALP levels were found to be increased in alcoholics when compared to hepatitis whereas; SGOT, SGPT, total bilirubin and direct bilirubin were high in hepatitis when compared with ALD. Serum albumin and total protein were reduced in both hepatitis and ALD.

In the study carried out by **Desai NA et al** on investigation of epidemiology and etiology of liver diseases and characterization of its association with various factors, they concluded that gamma glutamyl transferase were observed to be higher in ALD and ALP to be increase in viral manifestations. SGOT and SGPT levels were observed



to be double fold higher in viral manifestations when compared with ALD. In viral infections and alcoholic patient, the bilirubin levels were significantly high.<sup>8</sup>

**Nickovic V et al** reviewed a study on complications of alcoholic liver disease and diagnostic markers. Their review concluded fatty liver, cirrhosis, Portal hypertension, Hepatic encephalopathy, spontaneous bacterial peritonitis, hepatopulmonary syndrome and hepatorenal syndrome as the complications associated with ALD.<sup>9</sup> The present study assessed the complications like ascites, cirrhosis, portal hypertension, hepatomegaly, Hepatic encephalopathy, esophageal varices, Hepatocellular carcinoma as well as fatty liver which is associated with ALD.

In a study conducted by **Lavanya P et al** on an epidemiological study on clinical evaluation and treatment pattern in patients with various liver disease antibiotics were the most commonly prescribed drugs in ALD and hepatitis, among which cephalosporin is the most commonly used. This is then followed by antacids and hepatoprotectants. Metronidazole is the next frequently prescribed antibiotic.<sup>10</sup> Similar way, in this study also antibiotics were the most commonly prescribed drug and that too cephalosporins. Next to it the frequently prescribed drugs include gastrointestinal drugs and hepatoprotectives. Penicillin is the next commonly given antibiotic after cephalosporin.

## CONCLUSION

According to the analyzed results and from view of literature, the conclusions made are;

Males were more prone to ALD which may be due to increased consumption of alcohol by men. Most of the ALD patients were from urban area and the risk of developing this disease increases with age. It is found that the amount and duration of alcohol consumption greatly contribute to the development of complications in those patients. Screening for alcohol abuse in those adult patients presenting to hospital can be used for the early detection of ALD and thus the morbidity and mortality associated with this disease can be prevented.

Females were more prone to get hepatitis and majority of them were from rural area. Unhygienic condition was

found to be the reason for increased prevalence of hepatitis in this area.

Since most of the patients showed similar symptoms like abdominal pain, fever, jaundice, edema, vomiting etc, diagnosis was based on taking history of the patient, liver function tests and ultrasonography. Management of the patients was completely based on symptoms and severity of the disease.

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