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CLINICAL PROFILE AND DRUG THERAPY OF VARIOUS LIVER DISEASES PROSPECTIVE OBSERVATIONAL STUDY

Dr. G. Baby Sreshta[1*], K. Chandu priya[2], B. Jaya sree[2], G. Soumya[2], C. Likhith[2]

[1*]Assistant Professor, Department of Pharmacy Practice, Sri Padmavathi School of Pharmacy, Tirupati, Andhra Pradesh, India
[2]Pharm D interns, Department of Pharmacy Practice, Sri Padmavathi School of Pharmacy, Tirupati, Andhra Pradesh, India

***Corresponding Author:** Dr. G. Baby Sreshta
*Assistant Professor, Department of Pharmacy Practice, Sri Padmavathi School of Pharmacy, Tirupati, Andhra Pradesh, India Email: shreshtaguri37@gmail.com

Abstract
Liver disease is the tenth most common cause of death in India as per the WHO. The liver affects everyone in five Indians. Clinical profile plays a vital role in assessing the health conditions of a patient, based on the severity of the disease appropriate drug therapy will be recommended. The study's main objective was to determine the clinical profile and drug therapy of various liver diseases. It was a prospective observational study carried out in the medical ward of a tertiary care hospital in south India over a period of 6 months. A total of 150 patients were included in the study, out of that 142 patients were males and 8 were females. The study demonstrated the social habits, clinical profile, complications associated with liver disease, and the drug therapy prescribed for the patients. To get more insightful information further multi-centred studies are required to be conducted to draw the best results on prescribing patterns of liver disease in the Indian population.

Key words: Clinical profile, Complications, Drug therapy, Social habits

Introduction

The second largest organ in the body is the liver. It plays a crucial role in digestion, metabolism, immunity, and storage of vitamins and minerals. In India, there are over 10 lakh newly diagnosed liver disease patients each year. The major causes of this condition include chronic hepatitis B and C, alcohol use, steatohepatitis linked to obesity, and metabolic syndrome. Males are more likely to develop it than females, and typically, males are exposed to greater risk factors, such as smoking and drinking. There are various types of liver diseases like Non- alcoholic fatty liver, Hepatitis, DCLD, Jaundice, Alcoholic liver disease, CLD, Drug-induced liver disease, etc.

The stages of liver damage include Inflammation, Scarring, Cirrhosis, and End-stage liver disease. Mostly cirrhosis patients are at risk of developing many potential complications. The main complications of cirrhosis are portal hypertension, ascites, hepatic encephalopathy, splenomegaly, GI bleeding, and anemia. The main objective of the study is to assess the clinical profile and drug therapy in hepatic patients for better therapeutic outcomes.

Methodology

A Prospective Observational Study was carried out in the General medicine inpatient ward from September 2023 to February 2024 at Sri Venkateswara Ramnarain Ruia Government General Hospital (SVRRGGH), a tertiary care teaching hospital in Southern India. Patients of either gender or age > 18 years were diagnosed with any liver disease with or without comorbidities. The study was approved by the Institutional Ethics Committee. A self–designed data collection form was used to collect the required data such as past medical history, diagnosis, demographics, clinical profile, and present medication prescribed for each patient. The data is collected from the patient and caretaker or family members. According to study criteria, 150 cases were collected from the General medicine ward.

Statistical Analysis

Microsoft Excel is used to analyse the collected data and the information was presented as tabular forms in Windows version 11.

Results

During the six month study period, a total of 150 patients were assessed in the general medical ward.

Table 1: Demographic details of the study population	
Gender	
Males	142(95%)
Females	8(5%)
Age Range (Yrs)	
21-30	9(6%)
31-40	31(20.6%)
41-50	68(45%)
51-60	23(15.3%)
61-70	16(10.6%)
71-80	2(1.3%)
81-90	1(0.66%)
Social habits	
Alcohol	89(59%)
Alcohol and Smoking	28(19%)
Smoking	9(6%)
Tobacco chewing	6(4%)
None	18(12%)
Type of Liver disease	
DCLD	98(65%)
CLD	21(14%)
ALD	16(11%)
Acute hepatitis	9(6%)
Others	6(4%)
Complications(n=206) * A single patient may have more than one complication	
Portal hypertension	98(47%)
Ascites	34(16.5%)
Splenomegaly	28(13.5%)
Hepatic encephalopathy	16(8%)
G.I bleeding	14(7%)
Anemia	12(6%)
Others	4(2%)

Table 2: Distribution of patients based on Clinical profile

Table 2a: Bilirubin levels

Total no. of patients(n)	Test done(n)	Bilirubin levels	
		abnormal	normal
150	139	111(80%)	28(20%)

Table 2b: Liver enzymes

AST/SGOT	ALT/SGPT	ALP
no. of patients (n=95)	no. of patients (n=95)	no. of patients (n=82)
abnormal	abnormal	abnormal
52(55%)	42(44%)	40(49%)

Table 2c: Coagulation profile

PT			INR			APTT		
no. of patients (n=55)			no. of patients (n=53)			no. of patients (n=28)		
high	low	normal	high	low	normal	high	low	normal
43(78%)	3(5.5%)	9(16.5%)	26(49%)	6(11.5%)	21(39.5%)	12(43%)	1(3.5%)	15(53.5%)

Table 2d: Total protein

total protein	no. of patients(n=76)	percentage (%)
high	3	4
low	38	50
normal	35	46

Table 2e: Heamoglobin levels

haemoglobin	**no. of patients(n=129)**	**percentage (%)**
high	1	0.7
low	114	88.3
normal	14	11

Table 2f: Serum albumin levels

serum. albumin	no. of patients(n=94)	percentage (%)
low	78	83
normal	16	17

Table 2g: Prevalence of hepatitis B virus

HBsAg	no. of patients(n)	percentage (%)
positive	15	10
negative	135	90
total	150	100

Table 2g: USG abdomen report

USG (abdomen)	no. of patients (n=176*)	percentage (%)
mild to moderate ascites	66	38
splenomegaly	24	14
altered liver echotexture	32	18
hepatomegaly	20	11
RPD changes	18	10
others	16	9

*A single patient may have more than one abnormality in the USG (abdomen) report

Table 3: Distribution of drugs in the study population

CLASS OF DRUGS	NO. OF PATIENTS(n=150)
antibiotics	142
G.I agents	136
vitamin supplement	119
diuretics	114
hepatoprotectants	110
anti-portal HTN agents (propranolol)	40
antifibrinolytics (tranexamic acid)	27
serum. protein supplement (human. albumin)	64

Table 3a: Antibiotics		
antibiotics	no. of drugs (n=216)	percentage (%)
cefotaxime	90	41.5
rifaximin	70	32.5
ceftriaxone	27	12.5
metronidazole	19	9
others	10	4.5

*A single patient may prescribe more than one antibiotic

Table 3b: Hepatoprotectants		
hepatoprotectants	no. of drugs(n=119)	percentage (%)
Ursodeoxycholic acid	49	41%
L-Ornithine-L-Aspartate and Pancreatin	20	17%
Ursodeoxycholic acid + L-Ornithine-L-Aspartate and Pancreatin	50	42%

Table 3c: Diuretics		
diuretics	no. of drugs (n=117)	percentage (%)
furosemide	12	10.26
spironolactone	11	9.4
furosemide and spironolactone	94	80.34

Table 3c: G.I agents		
G.I agents	no. of drugs(n=251)	percentage (%)
pantoprazole	120	48%
lactulose	69	27.5%
ondansetron	26	10%
octreotide	21	8.5%
others	15	6%

*A single patient may prescribe more than one G.I agent.

Table 3c: G.I agents		
vitamine supplement	no. of drugs(n=261)	percentage (%)
vitamin-E	68	26
vitamin-K	66	25.5
thiamine	54	20.5
vitamin A & D3	34	13
iron and folic acid	21	8
others	18	7

*A single patient may prescribe more than one vitamin supplement

Discussion

The assessment of drugs and clinical profiles among people with diverse liver diseases was the primary goal of the current study. In the study population, the most prominent liver ailments, their implications, and the drugs used to treat them were studied. 150 subjects with various types of liver disease were included in the study.

In our study 142 (95%) of the 150 patients were male, and the remaining were female. It was determined by Babu KLP et al. [1] that the primary cause was their increased exposure to risk factors including alcohol, smoking, etc. 100 patients in their study had a variety of social habits, and 5 patients had a family history; whereas 132 patients in our study had a variety of social habits, and 18 patients had a family history. The major social habit that increases the risk of liver disease is alcohol consumption. The study reports by Ray G et al. [4] and Babu KLP et al.[1] were comparable to these results.

In our study, the age group of 41–50 years (45%) made up the greatest proportion of the population, followed by 31–40 years of age (20.6%). Although the majority were under 30- 39 years of age (36%) and 50-59 years of age (24.6%), these results were in line with Babu KLP et al. [1]

Our study indicates that DCLD, followed by CLD, is the most prevalent liver disease in the study population. Of the total, 98 participants had DCLD, and 21 had CLD. According to Babu KLP et al. [1] the majority of patients had alcoholic liver disease.

Portal hypertension, ascites, splenomegaly, hepatic encephalopathy, and G.I. bleeding are the most common complications among the study population. These results are consistent with the studies of Ray G. et al. [4] Cheemerla H et al. [9] and Asrani SK et al. [8]. In our study the patients, 98 (47%) experienced portal HTN, 34 (16.5%) had ascites, 28 (13.5%) had splenomegaly, and 14 (7%), had G.I. bleeding.

It was evident from our study's clinical profile that most patients had abnormally elevated bilirubin levels. Most patients had high AST levels, although a majority of them showed normal ALT and alkaline phosphate levels. The majority of patients had elevated prothrombin times and INRs, although their APTTs were typically normal. In 83% of patients, the serum albumin level was low. In 50% of patients, total protein was low, while in 46% of patients, it was normal. In 114 patients (88.3%), the haemoglobin level was extremely low. These findings aligned with the research reports of Thapa BR et al. [14] and Newsome PN et al.

[15] 10% of patients had positive HBsAg results, while 90% had negative results. According to Cheemerla H et al. [9] viral hepatitis is the most common cause of chronic liver disease.

According to Newsome PN et al. [15] Abdominal USG scan is one of the common screening tests for liver etiology. In our investigation, the most common abnormalities we found were altered echotexture, mild to moderate ascites, hepatomegaly, and splenomegaly.

According to the results of the current study, 142 patients received antibiotics, 136 received G.I. agents, 119 received vitamin supplements, 114 received diuretics, 110 received hepatoprotectants, and 64 received serum. protein supplement the research population uses protein supplements often. which was confirmed by Babu KLP et al. [1] study.

Cefotaxime (41.5%) was the most commonly given antibiotic, followed by Rifaximin (32.5%) and Ceftriaxone (12.5%). Propranolol, the only medication used in our study under Anti-portal HTN medications, was given to 40 patients.

For most patients, hepatoprotectants were prescribed in combination rather than as monotherapy. Hepatoprotectants were being used in combination therapy by about 50 patients. the majority of patients are prescribed diuretics in combination rather than as a single medication.

Among G.I agents Pantoprazole followed by Lactulose and Ondansetron was prescribed in the majority of the study population. In the vitamin supplements, most of the patients were prescribed specifically with vitamin E, vitamin K, and thiamine. In the current study, tranexamic acid was recommended under the category of antifibrinolytics. Human albumin was prescribed to patients with low serum albumin in their body.

Conclusion

The present study aimed to assess the clinical profile and drug therapy of various liver diseases. The prevalence of liver diseases has been increasing in the world due to various causes and it is one of the serious public health issues in the world leading to social and economic burdens to the society. The study analyzed the demographic and specified drugs prescribed to these patients based on their clinical conditions. According to the findings, DCLD was the most frequent liver disease, and patients with this condition also had the majority of complications like Portal HTN, ascites, splenomegaly, and hepatic encephalopathy. The male patients were more affected by liver disease than the females. The assessment of the clinical profile showed that most of the patients had abnormal bilirubin levels, prolonged PT and INR ranges, low levels of serum albumin and haemoglobin levels, and the USG abdomen showed abnormal liver structure and function. The most commonly used class of drugs include antibiotics followed by G.I agents and vitamin supplements. Management of the patients was completely based on symptoms and severity of the disease. The study suggests that there is a need for early detection, routine check-ups, and diagnosis of liver disease to improve the quality of life. This study was conducted on a few numbers of patients to assess their clinical profiles and drug usage patterns. To get more insightful information further multi-centred studies are required to be conducted to draw the best results on prescribing patterns of liver disease in the Indian population.

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