DRUG UTILIZATION PATTERN AMONG PATIENTS WITH HEPATIC IMPAIRMENT: A RETROSPECTIVE RECORD BASED STUDY IN A TERTIARY CARE HOSPITAL IN MANDYA

[1]Ashna Alex, [1]Anne Mary Antony, [1]Ashwin, [2] Dr. Arpitha T K

[1] Pharm D, [2]Assitant Professor

[2]Department of pharmacy practice, Bharathinagara, Mandya, Karnataka,571422.

Abstract

Liver diseases rank as the 10th leading cause of death in India, with over 2 lakh individuals losing their lives to liver disease each year. About two million deaths occur annually worldwide as a result of liver diseases. Aim: To describe the drug utilization pattern and clinical use of drug prescribed among hepatic impairment patients and to describe the disease distribution and factors associated with liver disease among these patients. **Methodology**: This was a retrospective record-based study on prescribing pattern and drug utilization pattern on Hepatic impaired patients admitted at general medicine department of MIMS, Mandya. The required data were collected from 160 cases based on inclusion criteria. A well-designed data collection form was used for collecting the details. The obtained information were documented and subjected to suitable statistical method. **Result**: Out of 160 patients involved in the study, the incidence of liver disease was higher in males (83%) as compared to females (17%). Alcohol was found to be the major risk factor. Majority of patients were belonged to the age group of 38-47 years. Among 160 patients, 67% of patients were identified with DCLD followed by ALD (30%). Hepatoprotective drugs (229) were most prescribed class of drugs followed by antibiotics (208) and vitamins (207). **Conclusion**: Our study concluded that DCLD was found to be the most prevalent hepatic condition. Hepatoprotective drugs were the most common class prescribed and most of the drugs prescribed by their generic name. There is considerable scope for improving liver impairment by creating awareness regarding various causes of liver disease by proper patient counselling, minimizing the use of hepatotoxic medicines, evaluation of patient's medication adherence

KEY WORDS: hepatic impairment, decompensated chronic liver disease, hepatoprotective drugs, alcoholic hepatitis, prevalence.

INTRODUCTION

The liver is a vital organ in the human body, performing a variety of functions essential for metabolism, immunity, digestion, detoxification, and vitamin storage, among others. Liver impairment can be acute or chronic involves destruction and regeneration of the hepatic cells leading to different liver, spanning from asymptomatic states to severe end-stage conditions, including Hepatitis, Alcoholic liver disease (ALD), Non-alcoholic fatty liver disease (NAFLD), Hepatocellular carcinoma, Drug-induced liver injury, Hepatic encephalopathy, Cirrhosis. It is caused by the various infections, drugs, autoimmune conditions, toxins.

Liver diseases rank as the 10th leading cause of death in India, with over 2 lakh individuals losing their lives to liver disease each year. About two million deaths occur annually worldwide as a result of liver diseases, in which one million attributed to cirrhosis, viral hepatitis, and hepatocellular carcinoma combined. Assessing the quality of care through periodic review of prescribing pattern should become a part of everyday clinical practice. Moreover, drug utilization research studies conducted in the inpatients settings is a useful tool for obtaining valuable information about the drugs prescribing trends, quality of drugs use, efficacy of drug use and cost-effectiveness of hospital formularies

Materials and Methods:

A retrospective record based was conducted. Before the commencement of the study, approval from Institutional Ethical Committee for the research was obtained. All the hepatic impairment patients attending the general medicine inpatient department from a tertiary care teaching hospital Mandya institute of medical science (MIMS) during the study period of 6 months, were chosen for the study. Sample size of 160 were enrolled in the study.

STUDY CRITERIA

a) Inclusion criteria**:**
   In this study, the patients are included based on the criteria including,
   1. Patients of both sex male and female
   2. Patients of age above 18 years diagnosed with hepatic disease

b) Exclusion criteria:
   Patients who are pregnant, lactating patients and patients without complete documents.

METHODS OF DATA COLLECTIONS

All the data relevant to the patients were collected from patient's record. The patients record includes: social demographic details like Name, Age, Sex. It also contains diagnosis, treatment and management of disease.

ANALYSIS

For the analysis of result, simple percentage calculation, mean and standard deviation were used to arrive at a conclusion of our study. Microsoft word and Microsoft Excel were used to generate graphs and tables wherever required.

RESULTS

A total of 160 patients were enrolled in this study based on study criteria. Among those 160 patients, 132(83%) patients were male and 28 (17%) patients were female. Adults between age group 38-47 years (31.25%) were more prone to liver disease. Different types of liver disease were observed during the study, of that most common cases reported were DCLD (60%) followed by ALD (19%), Alcoholic hepatitis (18%), viral hepatitis (3%). A total of 1303 drugs prescribed for these diseases. The most frequently prescribed class of drugs were hepatoprotective drugs (229) followed by Antibiotics (208), Vitamins (207), diuretics (125), gastro protectives (123), laxative (65), beta blockers (42), iron supplements (41), electrolytes (38), antiemetics (37), Intravenous fluids (24), antidiabetic drugs (22), NSAIDs (22), Corticosteroids (18), blood transfusion (18), nebulization (12), antiplatelets (8), probiotics (7), statins (6), antifibrinolytics (5), ACE inhibitors (4), Benzodiazepines (4), amino acids (4), ARBs (2), oxygen supplementation (2) and 30 other drugs.

Total of 229 hepatoprotective drugs prescribed in which 135 drugs were Ursodeoxycholic acid (59%) and 94 drugs were Liveril forte (41%). Among 208 antibiotics rifaximin (33.20%) was most commonly prescribed followed by cefotaxime (25%), ceftriaxone (18.17%).

Figure 1: Distribution of patients based on gender

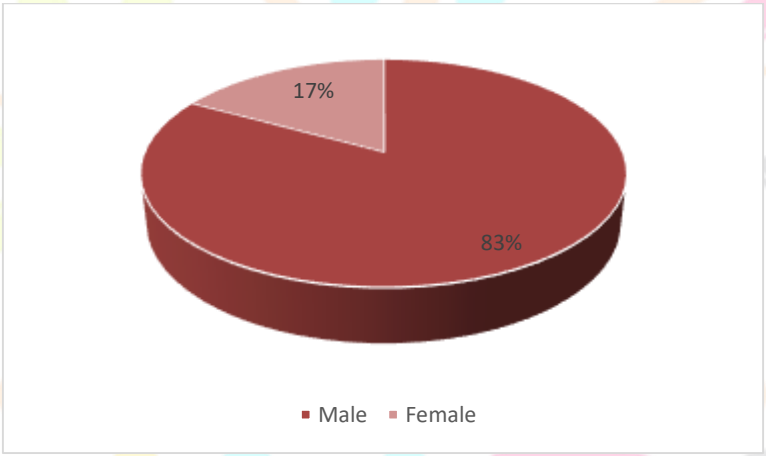

Figure 1 shows the patient distribution according to gender. 83% were males and 17% were females

Figure 2: Distribution of patients based on social history

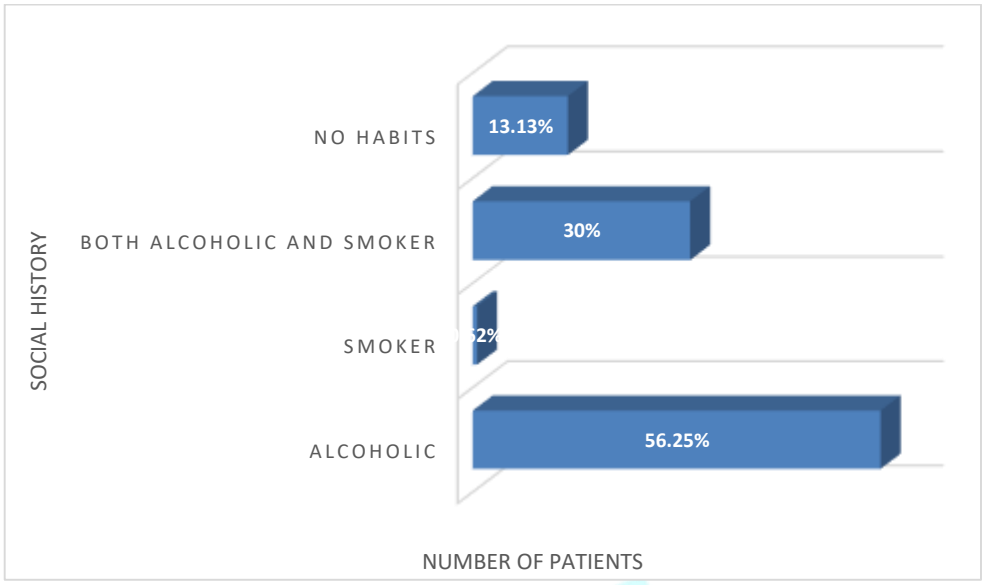

Figure 2 shows that 56.25% were alcoholic followed by 30% were both alcoholic and smoker. 0.62% were only smokers and 13.13% have no habits

Table 1: Disease distribution among study population

DISEASE	NUMBER OF PATIENTS	PERCENTAGE
Alcoholic hepatitis	28	18%
Viral Hepatitis	5	3%
ALD	30	19%
DCLD	97	60%
TOTAL	160	100%

Table 1 shows 60% were affected with Decompensated chronic liver disease, and 19% with Alcoholic Liver Disease. Alcoholic hepatitis is 18% and Viral hepatitis is 3%.

Figure 3: Different classes of drug prescribed

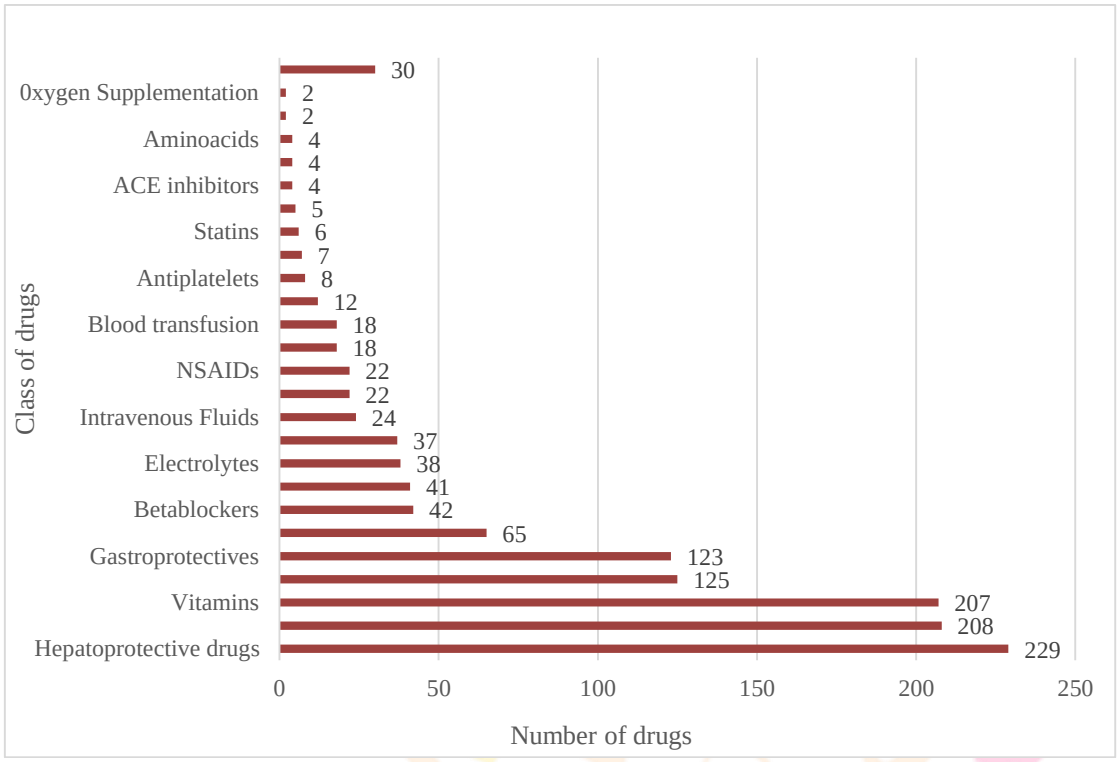

Figure 3 shows a total of 1303 drugs which administered to 160 patients in the study, and out of those, the most frequently prescribed class of drugs were hepatoprotectives (229), followed by Antibiotics (208), Vitamins (207), diuretics (125), gastro protectives (123), laxative (65), beta blockers (42), iron supplements (41), electrolytes (38), antiemetics (37), Intravenous fluids (24), antidiabetic drugs (22), NSAIDs (22), Corticosteroids(18), blood transfusion (18), nebulization (12), antiplatelets (8), probiotics (7), statins (6), antifibrinolytics (5), ACE inhibitors (4), Benzodiazepines (4), amino acids (4), ARBs (2), O2 supplementation (2) and 30 other drugs

Figure 4: Different antibiotics prescribed

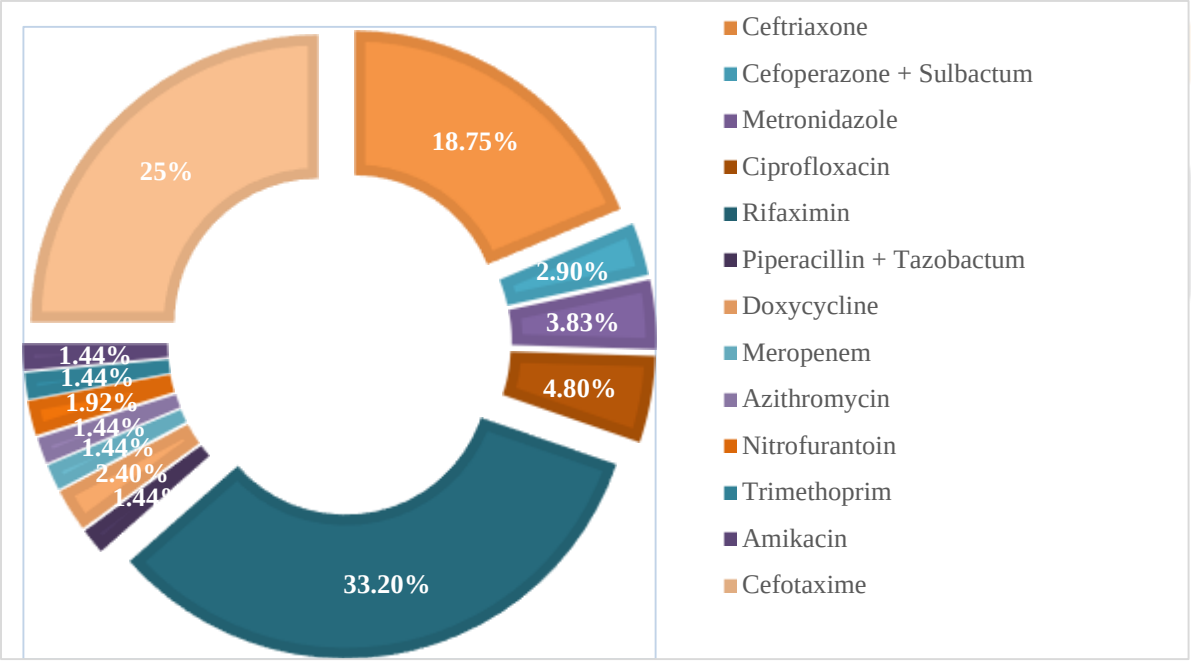

Figure 4 indicates a total 208 antibiotics, out of that rifaximin (33.20%) were most commonly prescribed followed by cefotaxime (25%) and ceftriaxone (18.75%).

Figure 5: Different antihypertensive drugs prescribed

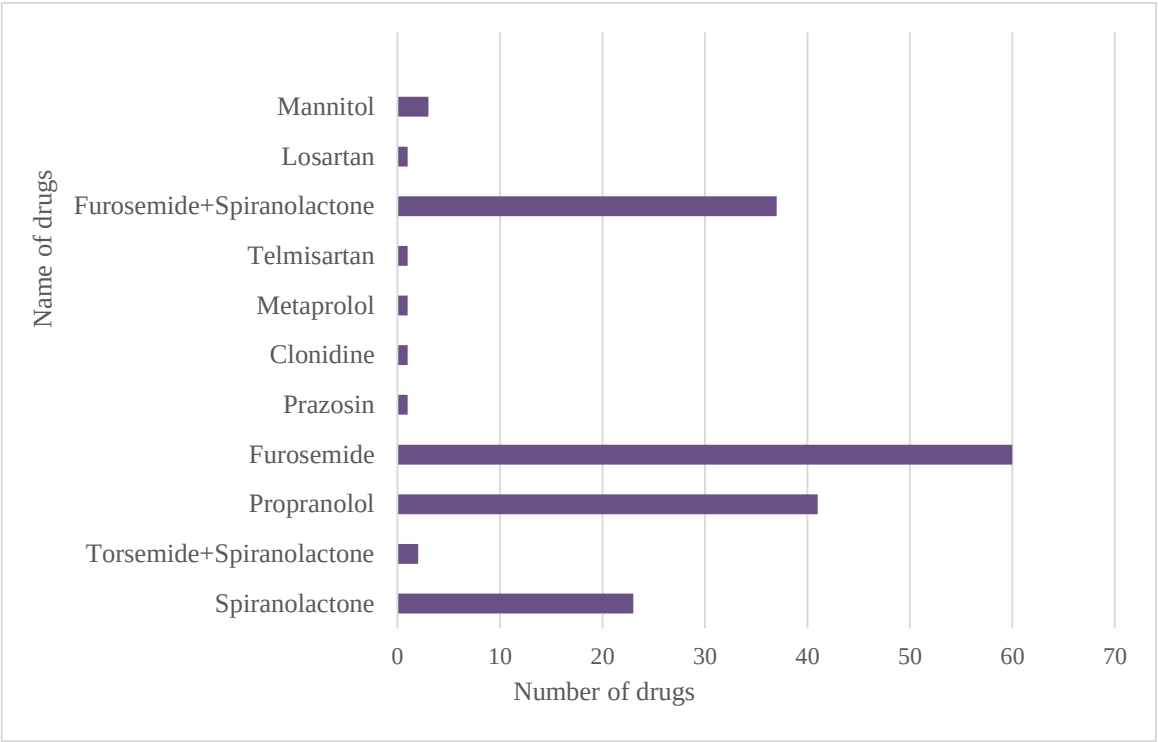

Figure 5 shows that antihypertensives like furosemide (60) is most commonly prescribed followed by propranolol (41), furosemide + spironolactone (37), spironolactone (23), Mannitol (3), torsemide + spironolactone (2), Prazosin (1), Clonidine (1), Metaprolol (1), Telmisartan (1), Losartan (1)

Table 2: Different vitamins prescribed

NAME OF VITAMINS	NUMBER OF VITAMINS	PERCENTAGE
Vitamin B12	14	6.70%
Vitamin B1	59	28.50%
Vitamin B9+Vitamin B6+ Vitamin B12	11	5.35%
Multivitamins	20	9.70%
Vitamin K	65	31.40%
Vitamin B Complex	38	18.35%
Total	207	100%

Table 2 shows Vitamin K (31.40%) is the most prescribed followed by Vitamin B1(28.50%) and Vitamin B complex (18.35%).

Table 3: Different diuretics prescribed

NAME OF DRUGS	NUMBER OF DRUG	PERCENTAGE
Torsemide + Spironolactone	2	1.6%
Furosemide	60	48%
Spironolactone	23	1.6%
Furosemide+ Spironolactone	37	29.6%
Mannitol	3	2.4%
Total	125	100%

Table 3

shows that the most prescribed diuretic is furosemide (60) which accounts for 48% and least prescribed is the combination of torsemide +spironolactone (2) which is about 1.6%.

DISSCUSSION

A retrospective study was conducted that mainly focused on the drug utilization pattern of drugs given to hepatic impairment patients admitted in in-patient department of general medicine, MIMS Mandya. A total of 160 patients were enrolled in the study. The required patient's details were recorded in a suitably designed patient profile form.

Our study reveals that the predominance of liver disease was found to be more in males than females and the predominant age group was 38-47 years. DCLD was found to be the most prevalent hepatic condition. Hepatoprotective drugs were the most common class prescribed and most of the drugs prescribed by their generic name. So, clinical pharmacist should create awareness regarding various causes of liver disease by proper patient counselling, minimizing the use of hepatotoxic medicines, evaluation of patient's medication adherence. Before prescribing to the patients, evaluation of medication with the suitable criteria or rational use of the drug must be strictly followed. Evaluation of the prescribing pattern of drugs can improve quality of prescription therefore they need to be done periodically.

The findings in our study highlights the need for careful monitoring and tailored pharmacotherapy in hepatic impairment patients to minimize the risk of adverse drug reactions and optimize therapeutic outcomes. This study provides valuable insights that can inform better clinical practices and enhance patient safety

ACKNOWLEDGEMENT

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CONFLICT OF INTEREST

Nil

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