

**A STUDY ON DRUG PRESCRIBING PATTERN AMONG HEPATITIS CASES IN A  
TERTIARY CARE HOSPITAL, MANDYA.**

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**ABSTRACT**

**Background:** Prescribing pattern studies draws a logical conclusion to monitor, evaluate practitioners prescription habits to make patient care rational and cost effective. Hepatitis is defined as inflammation of the liver due to virus, heavy alcohol use, autoimmune and drugs. WHO estimates that there are about 2.3 billion people of the world are infected with one or more of the hepatitis viruses. Each year, over 1.5 million people die from HBV and HCV related chronic liver diseases. The aim of our study is to describe the prescribing pattern among hepatitis cases in a tertiary care hospital, Mandya. **Objective:** To describe the drugs prescribed to hepatitis patients and types of hepatitis cases in general medicine department. **Methodology:** This was a record based retrospective study on drug prescribing pattern among hepatitis cases in general medicine department. **Results:** In the study among 180 cases, hepatitis was most common in males (77.33%). Majority of patients were found in the age group of 31-40 years (29.44%). Most of the cases were found to be alcoholic hepatitis (48.33%). Hepatoprotectants (15.66%) and Antibiotics (13.81%) were the class of drugs prescribed in maximum. **Conclusion:** This study concludes that, majority of hepatitis cases are in middle aged group and mostly are men. Different types of hepatitis were observed in which alcoholic hepatitis was most commonly reported. Our study analysed the prescribing pattern of drugs used in hepatitis and found that hepatoprotectants are most prescribed drugs. Management of the patients was completely based on symptoms and severity of the disease.

**KEYWORDS:** Hepatitis, Prescribing pattern, Hepatoprotectants.

**INTRODUCTION**

Hepatitis is the damage of liver due to inflammation of liver cells. The condition can be self-limiting or can progress to fibrosis, cirrhosis or hepatocellular carcinoma. Hepatitis may occur with limited or no symptoms, but frequently leads to jaundice, poor appetite and malaise. Hepatitis is acute when it is less than six months and chronic when it persists longer. It is commonly caused by viral infection (Hepatitis A, B, C, D and E viruses) and the other possible causes include autoimmune, medications, toxins and alcohol. The different types of hepatitis include viral, alcoholic, autoimmune and drug induced hepatitis.<sup>[1]</sup>

About 2.3 billion people around the world are infected with one or more of the hepatitis viruses.<sup>[2]</sup> The World Health Organization (WHO) estimates that more than 2

billion people have been infected with HBV.<sup>[3]</sup> About 90% to 100% of heavy drinkers have steatosis, 10% to 35% have alcoholic hepatitis and 8% to 20% have alcoholic cirrhosis.<sup>[4]</sup>

There is no specific management for hepatitis A. Supportive care includes adequate hydration, nutritional support, antiemetics and antipyretics. Acute hepatitis B infections can be managed supportively. patients with severe acute cases, have been successfully treated with antiviral therapy.<sup>[5]</sup> Chronic HCV, HDV and HEV is treated with interferon (INF) and antiviral therapy. Prophylaxis for viral hepatitis includes active and passive immunoprophylaxis.<sup>[6][7]</sup> Abstinence from alcohol is the most important factor in predicting the outcome of acute episodes of AH. Alcoholic hepatitis can be treated with intravenous amino acid infusion and multivitamins.<sup>[8]</sup>

Corticosteroids alone or in combination with immunosuppressants is the mainstay therapy of autoimmune hepatitis.<sup>[9]</sup> The management of Drug Induced Hepatitis is based upon proper diagnosis, recognition of the offending agent, and its withdrawal.<sup>[10]</sup>

### OBJECTIVES

- To describe the drugs prescribed to hepatitis patients in general medicine department of MIMS Teaching Hospital, Mandya.
- To describe the types of hepatitis cases.

### MATERIAL AND METHODS

**Study Design:** This was a medical record based retrospective study conducted in the medical record department of MIMS.

**Study Population:** Among 180 patient case record files of general medicine department from medical record department.

**Study Period:** This study was conducted for a period of 6 months. 4 months of data collection, 2 months for data analysis and write up.

**Sample size:** 180 case sheets.

**Study Approval:** Ethical clearance was obtained from the Institutional Ethics Committee of Mandya Institute of Medical Sciences, Mandya.

**Inclusion Criteria:** The patients included in the study were men and women of age 18 and above with hepatitis.

**Exclusion Criteria:** Records with incomplete data.

**Method of Data Collection:** Data was collected from case sheets of all hepatitis patients who were admitted to general medicine department of MIMS teaching hospital, Mandya in a preformed and pretested proforma.

**Analysis:** For the analysis of result simple percentage calculation was used to arrive at a conclusion of a study. The data were subjected to descriptive statistical analysis using Microsoft excel. Microsoft word and excel are used to generate graphs and tables.

### RESULT AND DISCUSSION

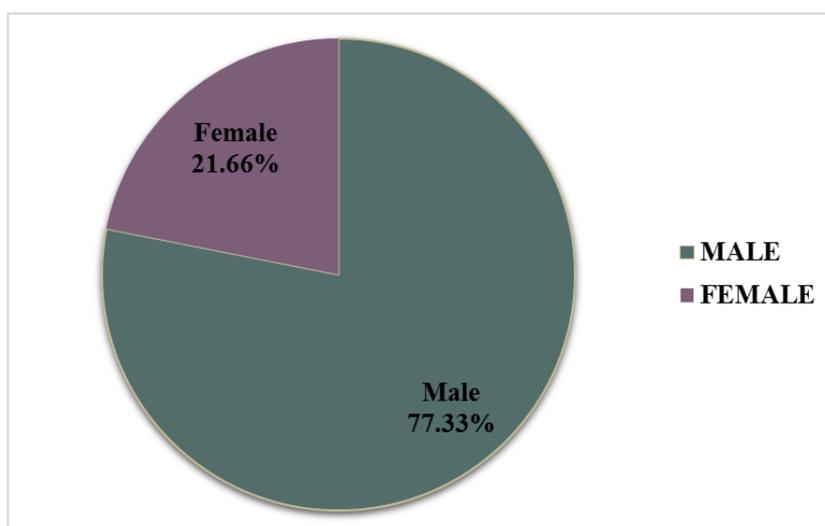
The retrospective study was conducted in Medical Record Department at MIMS tertiary care hospital, Mandya. A total of 180 patients case records in MIMS were enrolled in the study based on inclusion criteria. The demographic details such as age, sex and treatment details from the patient's case records were recorded in a suitably designed patient profile form.

#### Distribution of Patient Based On Gender

In the study among 180 cases, hepatitis was most common in male patients 141(77.33%) compared to female 39 (21.66%).

**Table 1: Distribution of patients based on Gender.**

Gender	Number of Patients	Percentage (%)
MALE	141	77.33
FEMALE	39	21.66



**Figure 1: Distribution of patients based on Gender.**

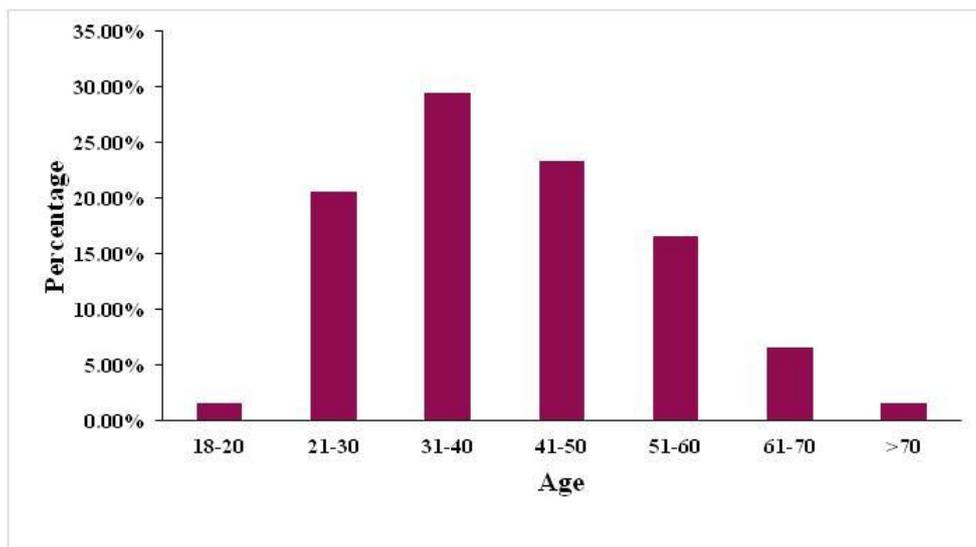
#### Distribution of Patients Based On Age

Among 180 cases involved in the study, the maximum number of patients were found in the age group of 31-40 years (29.44%) followed by 41-50 years (23.33%), 21-

30 years (20.55%), 51-60 years (16.66%), 61-70 years (6.66%), and minimum number of patients were found in the age group of 18-20 years (1.66%) and above 70 (1.66%).

**Table 2: Distribution of patient based on Age.**

Age group	Number of Patients	Percentage (%)
18-20	03	1.66
21-30	37	20.55
31-40	53	29.44
41-50	42	23.33
51-60	30	16.66
61-70	12	6.66
>70	03	1.66



**Figure 2: Distribution of patients based on Age.**

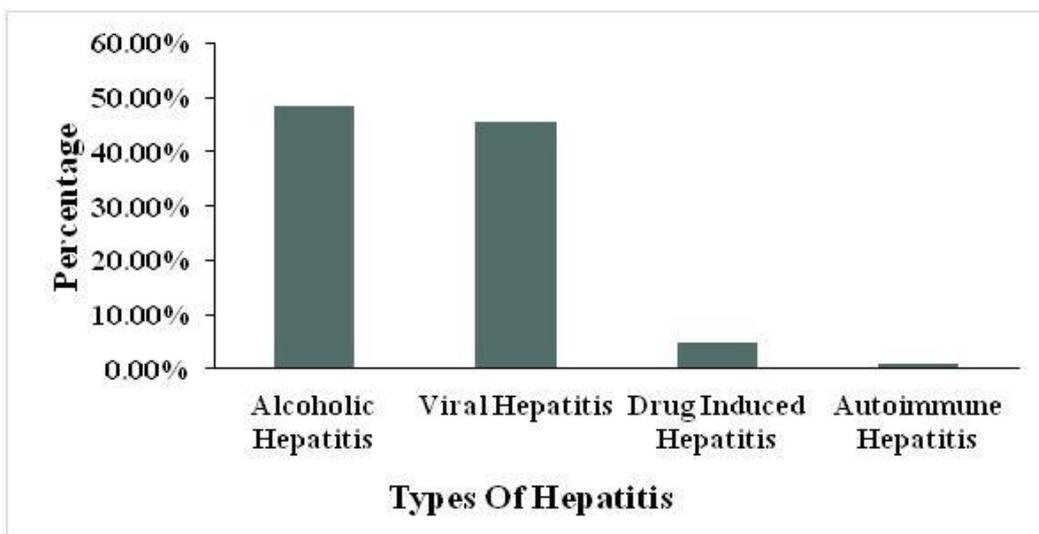
**Distribution of Patients Based on Types of Hepatitis**

Different types of hepatitis were observed during the study. This distribution of patients shows the proportion

of hepatitis among the study population. Most common cases reported were alcoholic hepatitis (48.33%) and viral hepatitis (45.55%).

**Table 3: Distribution of patients based on types of hepatitis.**

Types	No. of patients	Percentage (%)
Alcoholic Hepatitis	87	48.33
Viral Hepatitis	82	45.55
Drug Induced Hepatitis	9	5.00
Auto Immune Hepatitis	2	1.11



**Figure 3: Distribution of patients based on disease condition.**

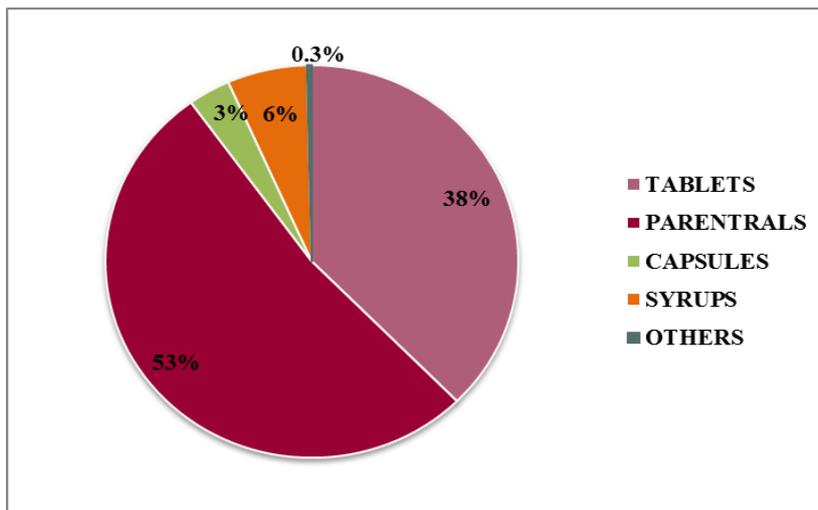
**Different Dosage Forms Prescribed**

The dosage form of drugs prescribed in maximum were found to be parenterals (52.42%) and tablets (37.59%).

This was followed by syrups (6.26%) and capsules (3.23%) respectively.

**Table 4: Different dosage forms prescribed.**

Dosage Forms	Number of Drugs	Percentage (%)
Tablets	588	37.59
Parenterals	820	52.42
Capsules	52	3.32
Syrups	98	6.26
Others	6	0.38



**Figure 4: Percentage of drugs prescribed by different dosage forms.**

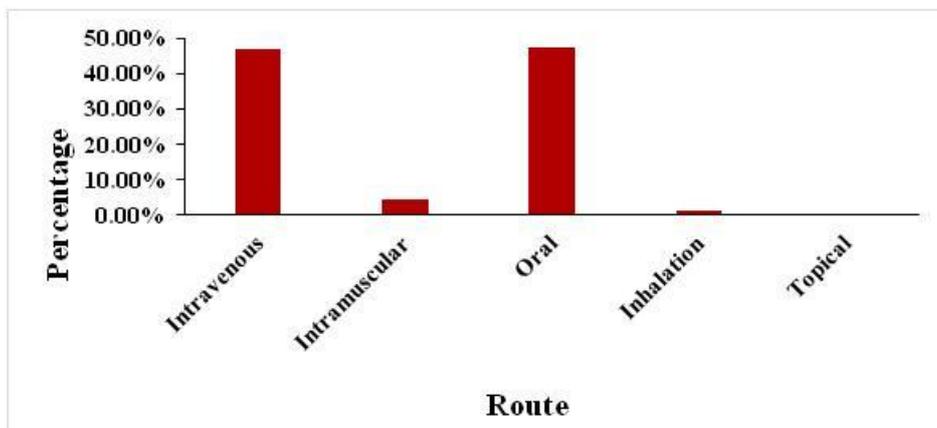
**Route of Administration**

Majority of prescribed drugs were administered orally (47.50%), followed by intravenous (46.99%),

intramuscular (4.28%), inhalation (1.15%) and topical (0.06%) routes of administration.

**Table 5: Distribution of drugs prescribed by various routes.**

Drug	Number of Drugs	Percentage (%)
Intravenous	735	46.99
Intramuscular	67	4.28
Oral	743	47.50
Topical	1	0.06
Inhalation	18	1.15
Total	1564	100



**Figure 5: Distribution of drugs prescribed by various routes.**

**Distribution based on class of drugs prescribed**

Out of 1564 drugs prescribed, majority of drugs were prescribed by their generic name 1251(80%) and the

remaining were prescribed by their brand names 313(20%).

**Table 6: Distribution of drugs prescribed by generic name and brand name.**

	NO. OF DRUGS	PERCENTAGE (%)
Generic Name	1251	80
Brand Name	313	20
Total	1564	100

**Figure 6: Distribution of drugs by generic and brand name.****Distribution Based On Drugs Prescribed For Hepatitis**

Among 180 patient case records, majority of patients were administered with hepatoprotectants (15.66%) and

least number of patients were administered with antivirals (2.87%).

**Table 7: Distribution Based on Drugs Prescribed.**

CLASS OF DRUGS	NO. OF DRUGS	PERCENTAGE (%)
Antibiotics	216	13.81
Hepatoprtectants	245	15.66
Antivirals	45	2.87
Nutritional Supplements	212	13.55
Analgesics	112	7.16
Antacids	212	13.55
Antihypertensives	72	4.6
Ivf	115	7.35
Others	335	21.41
<b>Total</b>	<b>1564</b>	<b>100</b>

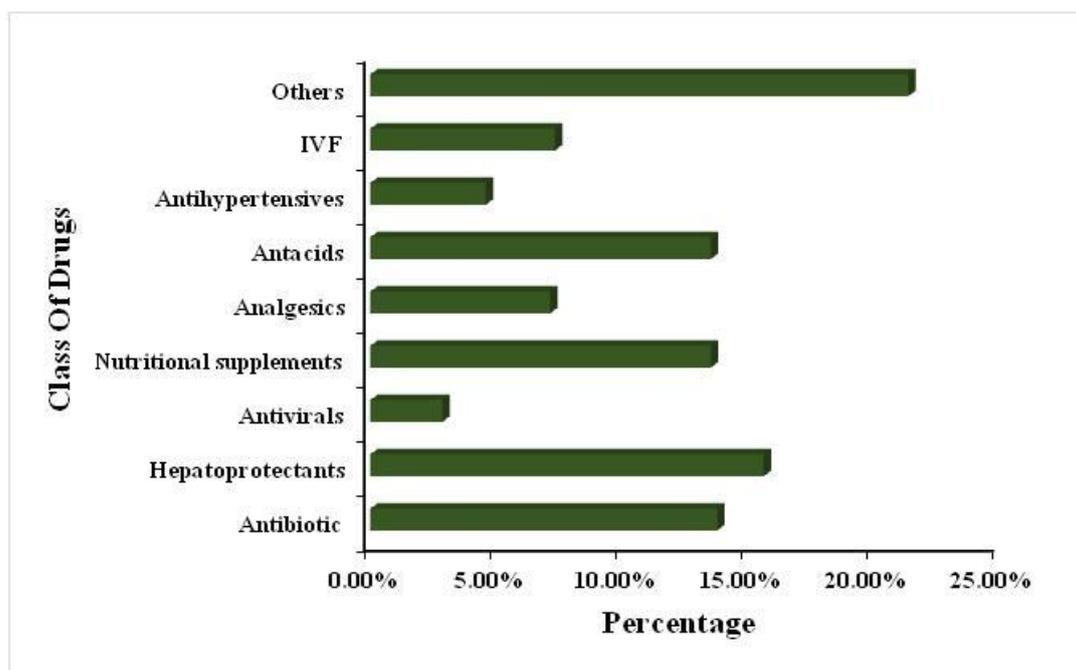


Figure 7: Distribution Based on Drugs Prescribed.

#### Antibiotics Prescribed For Hepatitis Patients

A total of 216 antibiotics were prescribed in 180 patient case records. Majority of patients were prescribed

Ceftriaxone (36.5%) followed by Cefotaxime (17.12%), Metronidazole (13.42%) and Doxycycline (12.5%).

Table 8: Antibiotics Prescribed for Hepatitis Patients.

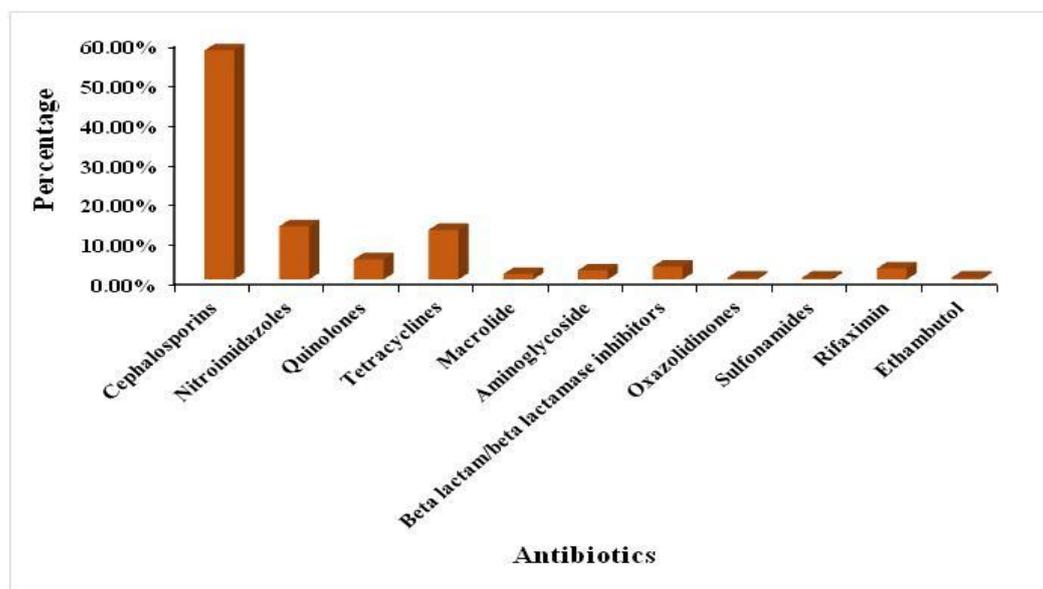
DRUGS	NO. OF DRUGS	PERCENTAGE (%)
Ceftriaxone	79	36.5
Cefotaxime	37	17.12
Metronidazole	29	13.42
Cefixime	7	3.24
Cefpodoxime	1	0.46
Doxycycline	27	12.5
Ofloxacin	1	0.46
Ciprofloxacin	10	4.6
Azhitromycin	3	1.38
Amoxiclav	1	0.46
Linezolid	1	0.46
Gentamycin	1	0.46
Cotra Ds	1	0.46
Rifaximin	6	2.77
Amikacin	4	1.85
Cefoperazone	1	0.46
Pipzo	6	2.77
Ethambutol	1	0.46
<b>Total</b>	<b>216</b>	<b>100</b>

#### Different Class of Antibiotics Prescribed For Hepatitis

Among different classes of antibiotics cephalosporins (57.87%) were mostly prescribed, followed by nitroimidazole (13.42%) and tetracycline (12.5%).

**Table 9: Different Class of Antibiotics Prescribed for Hepatitis.**

CLASS OF ANTIBIOTIC	DRUGS	NO. OF DRUGS	PERCENTAGE (%)
Cephalosporins	Ceftriaxone	125	57.87
	Cefotaxime		
	Cefixime		
	Cefpodoxime		
	Cefoperazone		
Quinolones	Ofloxacin	11	5.09
	Ciprofloxacin		
Aminoglycosides	Gentamycin	5	2.31
	Amikacin		
Beta lactam/ beta lactamase inhibitor	Amoxiclav	7	3.24
	Pipzo		
Nitroimidazole	Metronidazole	29	13.42
Tetracycline	Doxycycline	27	12.5
Macrolides	Azithromycin	3	1.38
Oxazolidinones	Linezolid	1	0.46
Sulfonamides	Cotra ds	1	0.46
Miscellaneous	Rifaximin	6	2.77
	Ethambutol	1	0.46

**Figure 8: Different Class of Antibiotics Prescribed for Hepatitis.**

**Hepatoprotectants Prescribed For Hepatitis Patients**  
Among 245 hepatoprotectants, majority of patients were prescribed with Udiliv (23.67%) followed by Liveril

forte (17.95%) and Liv 52(17.95%) and the least prescribed was Analiv (0.4%).

**Table 10: Hepatoprotectants Prescribed for Hepatitis Patients.**

DRUGS	NO. OF DRUGS	PERCENTAGE (%)
Liveril Forte	44	17.95
Udiliv	58	23.67
Livopill	42	17.14
Silybon	29	11.83
Udibon	4	1.63
Actibile	5	2.04
Liv 52	44	17.95
Analiv	1	0.40
Everliv	18	7.34
<b>Total</b>	<b>245</b>	<b>100</b>

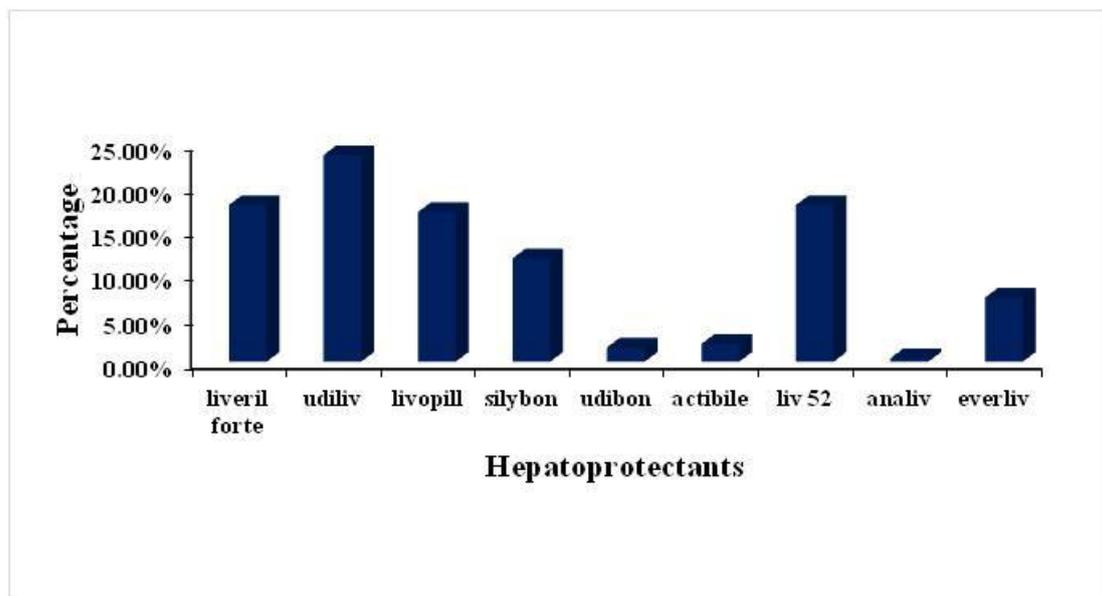


Figure 9: Hepatoprotectants Prescribed For Hepatitis Patients.

**Antivirals prescribed for viral hepatitis patients**

Out of 45 antivirals, maximum were prescribed with Nitazoxanide (46.66%) followed by Oseltamivir (37.77%) and Tenofovir (15.55%).

Table 11: Antivirals Prescribed for Hepatitis Patients.

Drugs	No. Of drugs	Percentage (%)
Nitazoxanide	21	46.66
Tenofovir	7	15.55
Oseltamivir	17	37.77

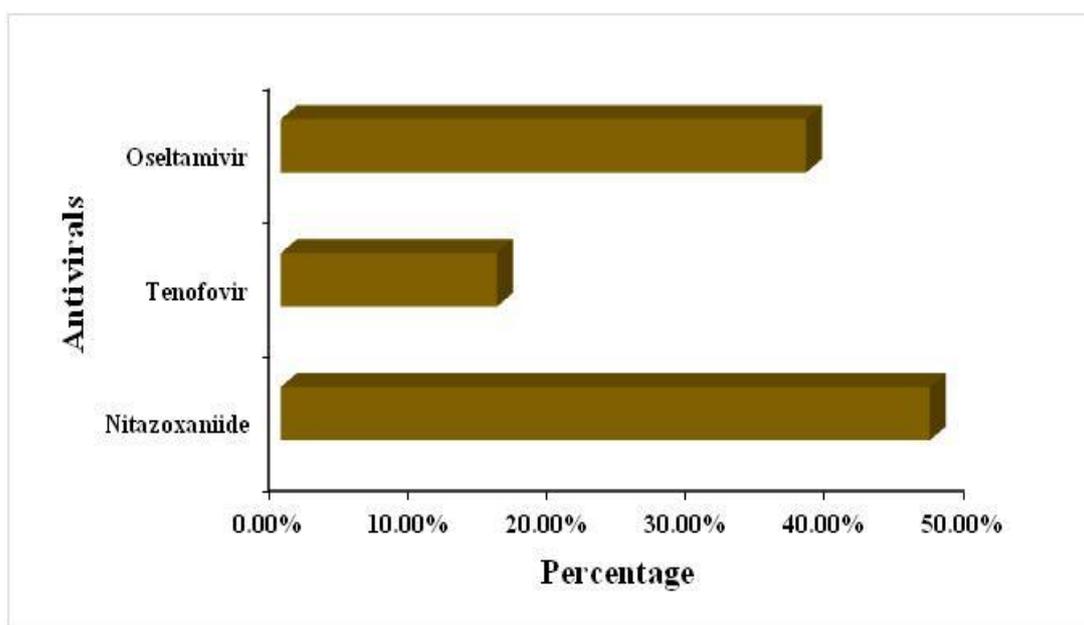


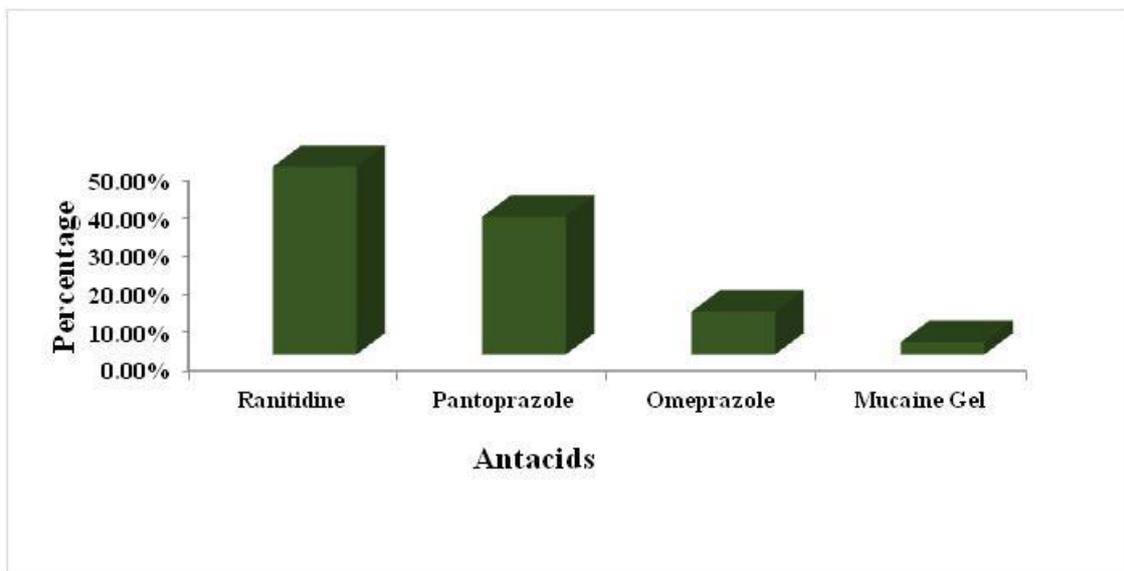
Figure 10: Antivirals prescribed for hepatitis patients.

**Antacids Prescribed for Hepatitis Patients**

Out of 212 antacids, maximum were prescribed with Ranitidine (49.5%) followed by Pantoprazole (36.32%), Omeprazole (11.32%) and Mucaine gel (3.30%).

**Table 12: Antacids Prescribed for Hepatitis Patients.**

Drugs	No. Of Drugs	Percentage (%)
Ranitidine	104	49.5
Pantoprazole	77	36.32
Omeprazole	24	11.32
Mucaine Gel	7	3.30
<b>Total</b>	<b>212</b>	<b>100</b>



**Figure 11: Antacids Prescribed for Hepatitis Patients.**

**Nutritional Supplements for Hepatitis Patients**

Among 212 nutritional supplements, majority of patients were prescribed with B Complex (18.86%) followed by

MVI (16.98%), Vitamin K (15.56%), Thiamine (11.32%), Optineuron (10.37%) and Dextrose (8.01%).

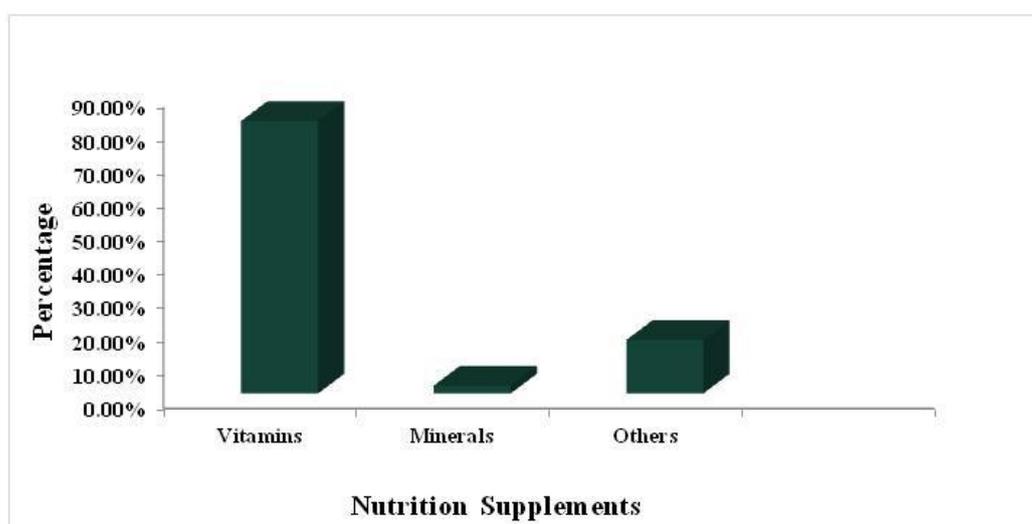
**Table 13: Nutritional Supplements for Hepatitis Patients.**

Drugs	No. of drugs	Percentage (%)
Calcium	2	0.94
B Complex	40	18.86
Zinc	1	0.47
Vitamin C	1	0.47
Nuhenz	1	0.47
Benfica Forte	1	0.47
Felicita	1	0.47
Combisafe	1	0.47
Vitcofol	6	2.83
Iron Sucrose	3	1.41
Multi Vitamin Injection	36	16.98
Vitamin K	33	15.56
Amino Acid	6	2.83
Optineuron	22	10.37
Lola	1	0.47
Hermin	9	4.24
Baraplex Forte	7	3.30
Thiamine	24	11.32
Dextrose	17	8.01
<b>Total</b>	<b>212</b>	<b>100</b>

Vitamin supplements accounts for 81.60% of all nutritional supplements. The least prescribed were minerals (2.35%).

**Table14: Groups of Nutritional Supplements.**

Nutritional supplements	Drugs	No. of Drugs	Percentage
Vitamins	B complex	173	81.60
	Nuhenz		
	Vitamin c		
	Benfica forte		
	Felicita		
	Combisafe		
	Vitcofol		
	MVI		
	Vitamin k		
	Optinueron		
	Baraplex forte		
Thiamine			
Minerals	Calcium	5	2.35
	Zinc		
	Iron sucrose		
Others	Amino acid	34	16.03
	LOLA		
	Hermin		
	Dextrose		

**Figure 12: Groups of Nutritional Supplements.****Analgesics For Hepatitis Patients**

Among 112 analgesics, Paracetamol (75.89%) followed by Diclofenac (13.39%) and Tramadol (3.57%) were found to be the drugs prescribed in maximum.

**Table 15: Analgesics for Hepatitis Patients.**

Drugs	No. of Drugs	Percentage (%)
Diclofenac	15	13.39
Mefenamic Acid	1	0.89
Meftal Spas	1	0.89
Acuvin	1	0.89
Tramadol	4	3.57
Aspirin	3	2.67
Aceclofenac-Sp	1	0.89
Paracetamol	85	75.89
Ultram	1	0.89
<b>Total</b>	<b>112</b>	<b>100</b>

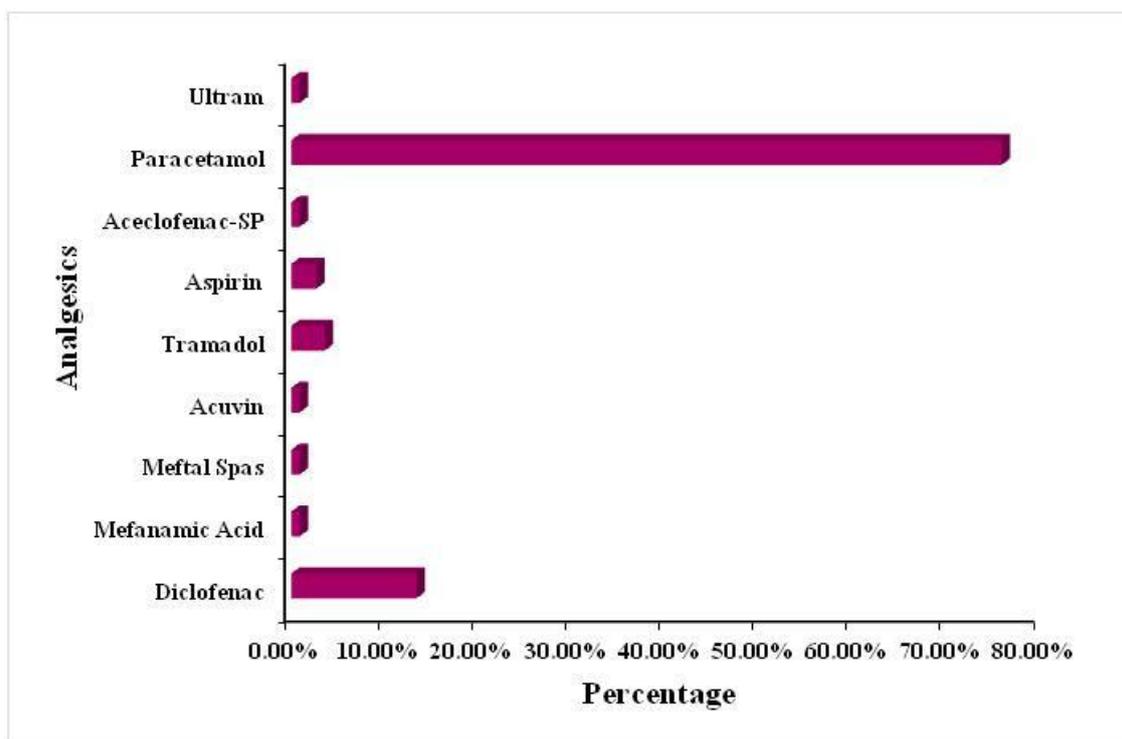


Figure 13: Analgesics for Hepatitis Patients.

## CONCLUSION

A study on drug prescribing pattern among hepatitis cases in tertiary care hospital in Mandya was a retrospective study. A well designed patient data collection form was used for collecting the details which comprised of patient demographic details, diagnosis and treatment.

From this study it is concluded that the majority of hepatitis cases are in middle aged group and mostly are men. Different types of hepatitis were observed in which most common cases reported were alcoholic hepatitis and viral hepatitis. Our study analysed the prescribing pattern of drug used in hepatitis and found that hepatoprotective agents are most prescribed drug followed by antibiotics, nutritional supplements and antacids. Ceftriaxone was the most commonly prescribed antibiotics. Management of the patients was completely based on symptoms and severity of the disease. Our study suggests that there is a considerable scope for improving prescribing pattern among the health care system and minimizing the use of antibiotics in order to reduce the risk of antibiotic resistance of microbes. The development of the formulary will have a major impact on prescribers and healthcare professionals & for clinical practice.

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