IOSR Journal Of Pharmacywww.iosrphr.org
(e)-ISSN: 2250-3013, (p)-ISSN: 2319-4219
Volume 7, Issue 9 Version. II (September 2017), PP. 01-05

Drug Utilization Evalauation of Antibiotics in Dh Uttarakashi

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Abstract: (150-200 words)
Drug Use Evaluation (DUE) is recognized as an effective tool for detecting and improving drug use and to strengthen clinical pharmacy and patient care It is vital for almost all drugs most importantly for antibiotics for being the highly used drug in hospitals and community The objective of this study was to do drug utilization evaluation of antibiotics in dh uttarakashi. It was a hospital based retrospective study was conducted for a period of one month December 2016 A total of 15 patient records were collected randomly evaluated for prescribing pattern using WHO drug indicators. Results showed male dominance (33 %) were in the age group 61-80 years. abdominal pain was the most prevalent disease accounting for 27 % cases. Ceftriaxone was highly used antibiotic The average number of drugs per prescription in our study was 4.73. Percentage of drug by generic name was 28.86%. Injection was given in every prescription hence value of encounter with injection is 100 %. In our study EDL percentage was 28.16. Rational drug use by promoting more generic prescribing can be promoted.

Date of Submission: 17-09-2017 Date of acceptance: 25-09-2017

I. INTRODUCTION

Drug utilization has been defined as the marketing, distribution, prescription and use of drugs in a society with special emphasis on the resulting medical and social consequences (Sharma *et al.,* 2010). Drug utilization is important for every drug but especially for antibiotics as they are widely used drugs in health care and their excessive and inappropriate use in hospitals, health care facilities and community contributes to the development of bacterial resistance (Srikala *et al.,* 2010). The prevalence of antibiotic use is very high in India and ranges from 24 to 67% (Kumar*et al.,*2013). Being the country with highest burden of infectious disease India has highest rate of antibiotic prescribing leading to their irrational and indiscriminate use which has resulted in rapid increase in rate of antibiotic resistance (Sharma *et al.,* 2016). Economically, antibiotics contribute significantly to the drug cost and are claimed worldwide to account for 15 to 30 percent of the total health budget (Shankar et al., 2005). Developing countries have limited funds available for health care and drugs and it becomes very important to prescribe drugs rationally so that the available funds can be utilized optimally (Shankar *et al.,*2005). Drug utilization study is a component of medical audit that does monitoring and evaluation of the drug prescribing patterns and suggests necessary modifications in prescribing practices to achieve rational therapeutic practice as well as cost effective health care (John *et al.,* 2011) hence this study was undertaken to perform drug utilization evaluation and access prescribing trends of antibiotics in district hospital Uttarkashi.

II. MATERIALS AND METHODS

Study site- District Hospital Uttarakashi (DH Uttarkashi)
Study Type- Retrospective
Study Period- 1 month
Study Criteria- This study criterion was the in-patients of DH Uttarakashi
Source of Data- Patient file, patient case records available at Medical record department
Material Used-Data collection form
The study was approved by the institutional ethics committee.
Mode of Analysis - The data was subjected to descriptive analysis by microsoft excel. Antibiotics were classified in groups as per ATC classification. Utilization of drugs was analyzed and presented as percentage.

III. RESULTS

A total of 15 records were evaluated among which 8 were male and 7 were female. The male to female ratio was 1.14.

Table 1

Gender	Number	Percentage
Male	8	53
female	7	47

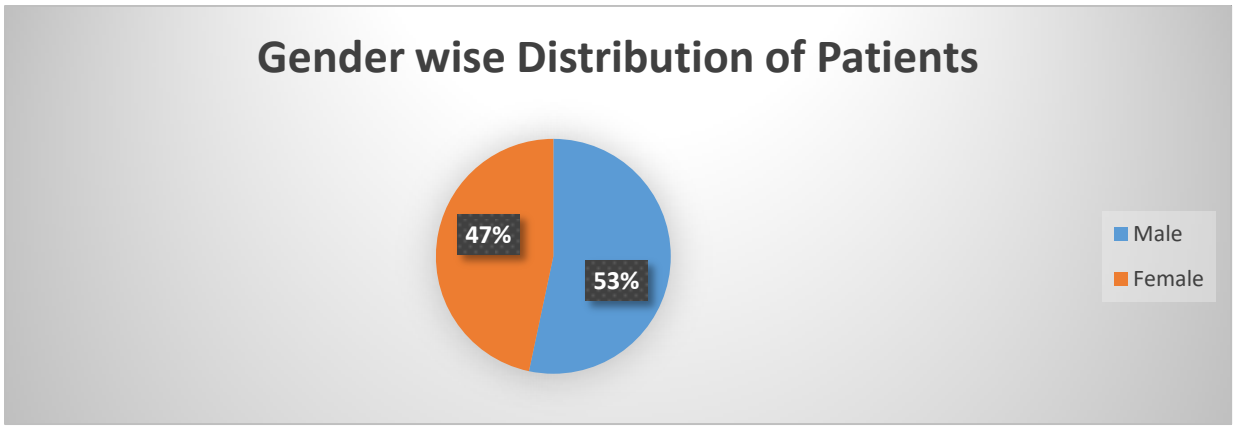

Fig 1

Out of 15 patients, 6 patients (33 %) were in the age group 61-80 years.

Table 2

Age Group	Number	Percentage
0-20	4	27
21-40	2	13
41-60	4	27
61-80	5	33

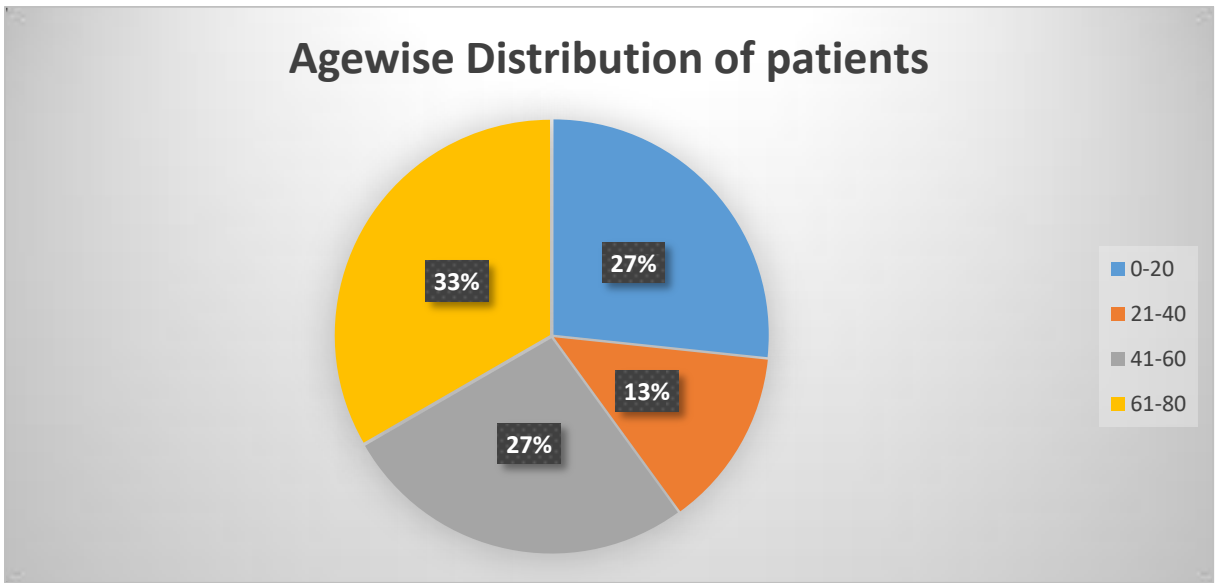

Fig 2

A wide spectrum of clinical diagnosis was observed abdominal pain was the most prevalent disease accounting for 27 % cases. Second was pain found in 20% . Third and fourth prevalent disease diagnosed was COPD and Injury comprising 13 % each.

Table 3

Disease	Number of patients	Percentage
Anemia	1	6
COPD	2	13
Abdominal pain	4	27
Pain	3	20
Body Injury	2	13
Renal Colic	1	7
Hernia	1	7
Eye	1	7

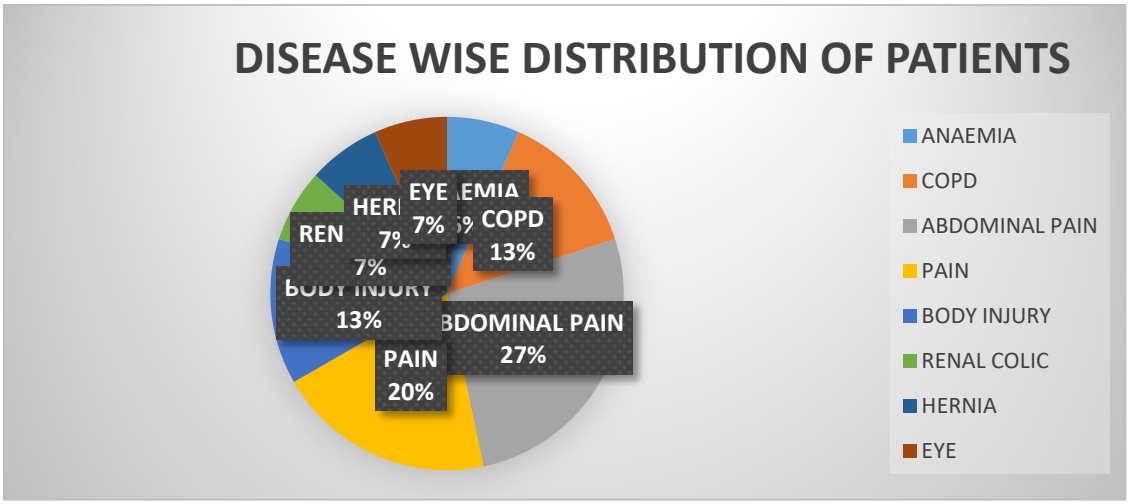

Fig 3

It was observed that, Cephalosporin (Ceftriaxzone) was the most frequently prescribed antibiotic in 9 cases (47%), followed by metrogyl (27.6%) and amikacin (15%)

Table 4

Antibiotic	ATC CODE	Number of patients	Percentage
Ceftriaxone	J01DD04	9	47
Metrogyl	J01XD01	7	37
Amikacin	J01GB06	3	16

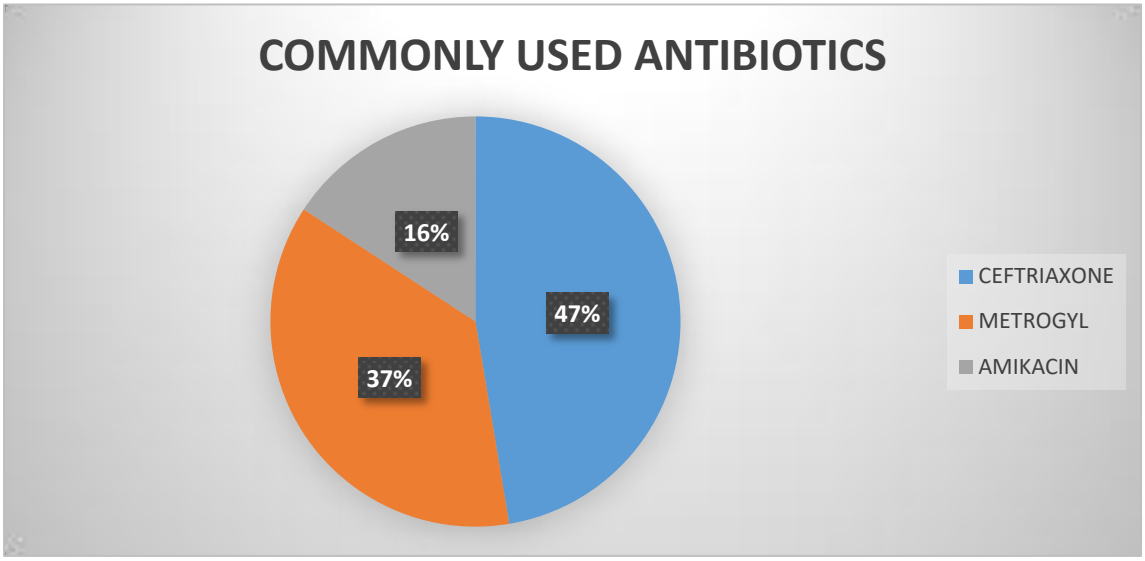

FIG 4

Among other drugs ranitidine was prescribed in 9 cases and diclofenac was prescribed in 8 cases and acetazolamide was prescribed in 1 case of eye ailment.

Table 5

Drug class	Group	Agent	Patients	Percentage
Eyes	B blocker	Acetazolamide	1	6
Antacid	H1 Blocker	Ranitidine	9	50
Pain	NSAID	Diclofenac	8	54

Fig 5

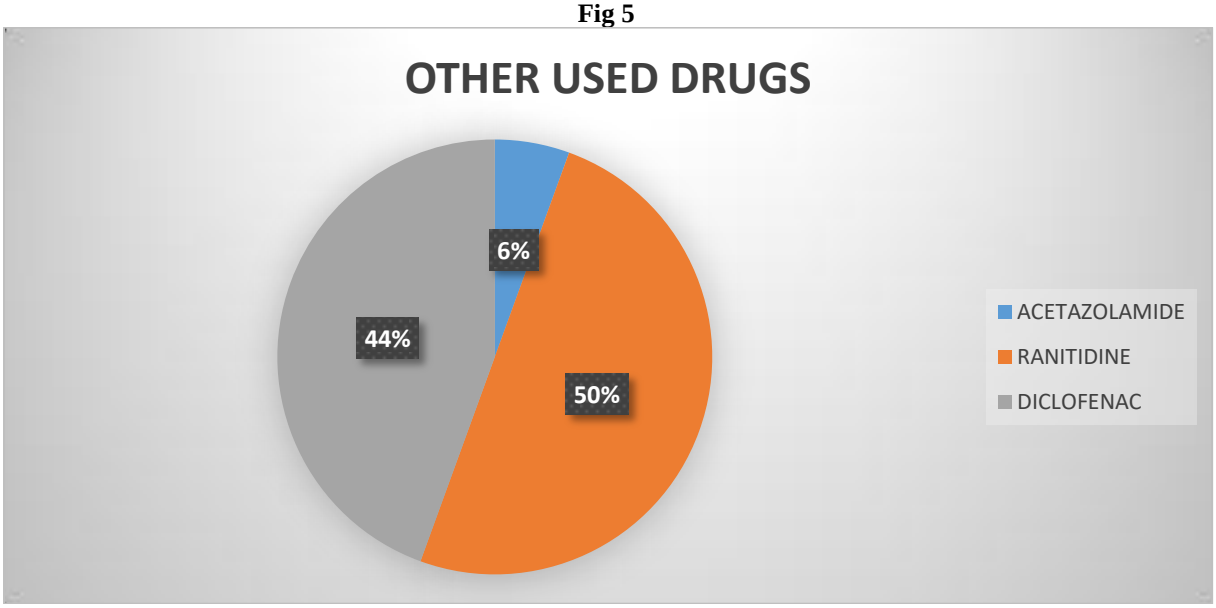

Table 6

WHO INDICATORS

WHO PRESCRIBING INDICATORS	**VALUE OBTAINED**
Average no of drug per prescription	4.73%
Percentage of drug by generic name	28.86%
Percentage of encounters with an antibiotic Prescribed	1.46%
Percentage of encounters with an injection Prescribed	100%
Percentage of encounters with EDL Prescribed	28.16%

IV. DISCUSSION

Drug utilization evaluation (DUE) is the mainstay for the rational use of drugs. It helps policy makers for designing guidelines. In our study male preponderance was seen with male to female ratio of 1.14. Majority of patients were of the age group of 60 -80 and other 40-60 years which is almost similar to a study by Khade *et al*., 2013 who stated that majority of cases in his study were between the age group of 21 and 50 years and one of the plausible reason for this is that it is the productive age group that is actively involved in socioeconomic activities. In our study reason for hospitalization was mostly was pain, injury, and infections which correlates with study by (Gopal *et al*., 2014) where 63 antibiotics were prescribed for cough and cold, fever alone, fever with cough and cold, respiratory tract infections (RTI), urinary tract infections, abdominal infections, soft tissue infections and with other conditions (Eye and Ear discharge, Acid Peptic Disease, Chest Pain, Body Pains and Headache). In addition, study by Revathysaravanan showed that patients visited mostly for infectious diseases (Revathysaravanan *et al*., 2012). In our study ceftriaxone was highly prescribed. A similar report prospective observational study done in a tertiary care level hospital in Erode, Tamilnadu showed that of 95.85% of hospitalized patients received third generation cephalosporin (Revathysaravanan *et al*., 2012). Apart from this other drugs used in our study were ranitidine and diclofenac. The average number of drugs per prescription in our study was 4.73 which shows poly pharmacy supported by study done by Neha et al having average number of drugs per prescription value 5.25 (Neha *et al*., 2014).

Percentage of drug by generic name was 28.86% in the study which is higher than value of 18.01% as reported earlier (Neha *et al*., 2014). Injection was given in every prescription hence value of encounter with injection is 100 %. In our study EDL percentage was 28.16.

V. CONCLUSION

Use of antibiotics usually broad spectrum cephalosporin was high in the study. High average number of drug per prescription along with high use of injection was noted. Generic prescribing is less this shows that all these parameters should be checked and improved to provide quality and rational treatment to the patient.

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Kanishk Kala. "Drug Utilization Evalauation of Antibiotics in Dh Uttarakashi." IOSR Journal of Pharmacy (IOSR-PHR, vol. 7, no. 9, 2017, pp. 01–05.