

# PRESCRIPTION PATTERN OF PATIENTS ADMITTED IN SURGERY WARD: A CROSS-SECTIONAL STUDY IN A TERTIARY CARE HOSPITAL IN MANDYA

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## ABSTRACT:

**ABSTRACT BACKGROUND:** Surgery, branch of medicine that is concerned with the treatment of injuries, diseases and other disorders by manual and instrumental means. Present study had been conducted to evaluate prescribing patter of surgical drugs. A cross-sectional study was conducted in the surgery department of Mandya Institute of Medical Sciences and Hospital, Mandya, over a period of 6 months. Data of patients admitted in the surgery department were included in the study.

**OBJECTIVE:** To describe the drug prescribing pattern among inpatients admitted in the department of surgery at MIMS hospital, Mandya.

**METHODS AND METHODOLGY:** The study are a prospective cross-sectional study, and the research period was about 6 months. A well designed data collection form was used for collecting the details.

**RESULTS:** Out of 200 enrolled patients. majority were male (147, 73.50%) and in the age group of 19-59 years (144, 72% patients). Hernia (40, 20%) was most reported followed by pancreatitis (24, 12%), diabetic foot (22, 11%) and appendicitis (20, 10%). Antimicrobials (36.50%), Analgesics (23.70%) and gastro protectives (20.89%) were most prescribed drugs. The most extensively prescribed drugs from each of the above groups were Amikacin, Metronidazole, Ranitidine, Ceftriaxone and Tramadol.

**CONCLUSION:** Hernia was the most observed condition in the present study. Male to female ratio was high in this study. Metronidazole as antimicrobial agent, Diclofenac as analgesics, Ranitidine as gastro protective and Ondansetron as antiemetic are most prescribed drug. Use of multiple antibiotics should be avoided whenever possible.

**KEYWORDS:** Antimicrobial agents, Analgesics, Prescription pattern

## INTRODUCTION:

The use of medications is a vital component of patient care and plays a central role in the management of hospitalized individuals. In surgical settings, particularly in pre- and post-operative units, appropriate selection, dosing, and duration of drug therapy significantly influence patient recovery, infection control, and overall clinical outcomes. Rational prescribing ensures optimal therapeutic benefit while minimizing adverse

drug reactions, antimicrobial resistance, and unnecessary financial burden on patients and the healthcare system.

The World Health Organization (WHO) defines rational drug use as a process in which patients receive medications appropriate to their clinical needs, in correct doses, for an adequate duration, and at the lowest possible cost. Despite this framework, several studies have reported irrational prescribing practices in surgical departments worldwide. Common concerns include polypharmacy, inappropriate use of antibiotics, excessive injections, and limited prescribing of generic medicines. Surgical wards in Indian hospitals manage a high volume of elective and emergency cases, often requiring antimicrobials, analgesics, fluids, and medications for co-morbid conditions. Studies from different regions of India have reported a high average number of drugs per prescription, with antibiotics accounting for a substantial proportion. Such complex drug regimens increase the risk of drug-drug interactions and adverse effects, especially in the absence of routine prescription audits.

Irrational antibiotic use remains a major issue in surgical practice. Broad-spectrum antibiotics are frequently prescribed empirically and continued beyond recommended durations, contributing to antimicrobial resistance. Analgesics, particularly NSAIDs and opioids, are widely used for post-operative pain, often without adequate gastroprotective measures in high-risk patients. WHO prescribing indicators serve as valuable tools for evaluating drug utilization patterns and rationality. However, several Indian studies have demonstrated significant deviations from these standards in surgical wards, including high antibiotic use, low generic prescribing, and limited adherence to essential medicine lists.

Tertiary care hospitals, despite being teaching institutions, often lack structured drug utilization review systems and adequate involvement of clinical pharmacists. In regions like Mandya, Karnataka, published data on surgical inpatient prescribing patterns are scarce. Therefore, the present study is justified to assess prescription patterns using WHO indicators, identify gaps in rational drug use, and propose strategies to improve prescribing practices in surgical wards.

## **MATERIALS AND METHODS:**

A cross-sectional study was conducted in the Surgery department. Before the commencement of the study, approval from Institutional Ethical Committee for the research was obtained. Patients who were admitted in the surgery department of Mandya institute of medical science (MIMS) during the study period of 6 months were chosen for the study. Sample size was 200 in this study.

### **Study criteria:**

#### **1. Inclusion criteria:**

- Patients admitted to the general surgery department for elective or emergency surgical procedures.
- Adults aged  $\geq 18$  years.
- Patients who are willing to provide written informed consent.

#### **2. Exclusion criteria:**

- Patients with incomplete prescription data or unclear diagnosis.
- Patients discharged against medical advice before completion of treatment.
- Postoperative ICU patients with altered consciousness.

## **METHODS OF DATA COLLECTION:**

All the data relevant to the patients were collected from the patients record. The patients record include demographic details, current medication, past medical and medication history, and treatment chart.

## **ANALYSIS:**

Data collected will be coded and checked for completeness and uniformity, then data will be entered in MS Excel worksheet was used and the results were presented in tables and graphs or expressed as percentages

according to the type of information collected. For continuous variables, mean and standard deviations will be calculated.

**RESULT AND DISCUSSION:**

A total of 200 patient case sheets were analyzed in the present study. The majority of patients were males (73.5%) and most belonged to the age group of 19–59 years (72%). Hernia was the most commonly reported condition (20%), followed by pancreatitis (12%), diabetic foot (11%), and appendicitis (10%). A total of 852 drugs were prescribed during the hospital stay of all patients. Disease-wise drug distribution showed the highest number of drugs prescribed in pancreatitis, followed by hernia, diabetic foot, and appendicitis. Antimicrobial agents were the most frequently prescribed class of drugs (36.5%), followed by analgesics (23.7%) and gastroprotective agents (20.89%). Cephalosporins were the most commonly prescribed antibiotics (42.96%), followed by nitroimidazoles (40.07%) and aminoglycosides (16.96%). Ranitidine and pantoprazole were the commonly used gastroprotective agents, while diclofenac and tramadol were the most frequently prescribed analgesics.

Table 1: Patient distribution based on gender

Gender	Number of patients	Percentage
Male	147	73.5%
Female	53	26.5%

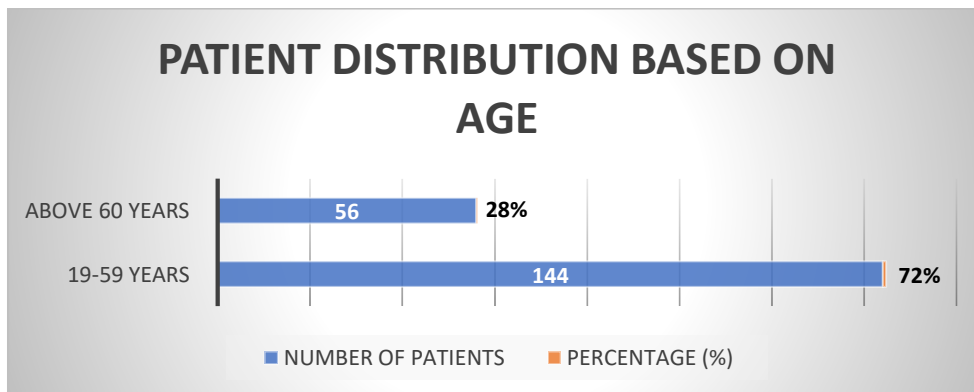


Figure 1: Patient distribution based on age

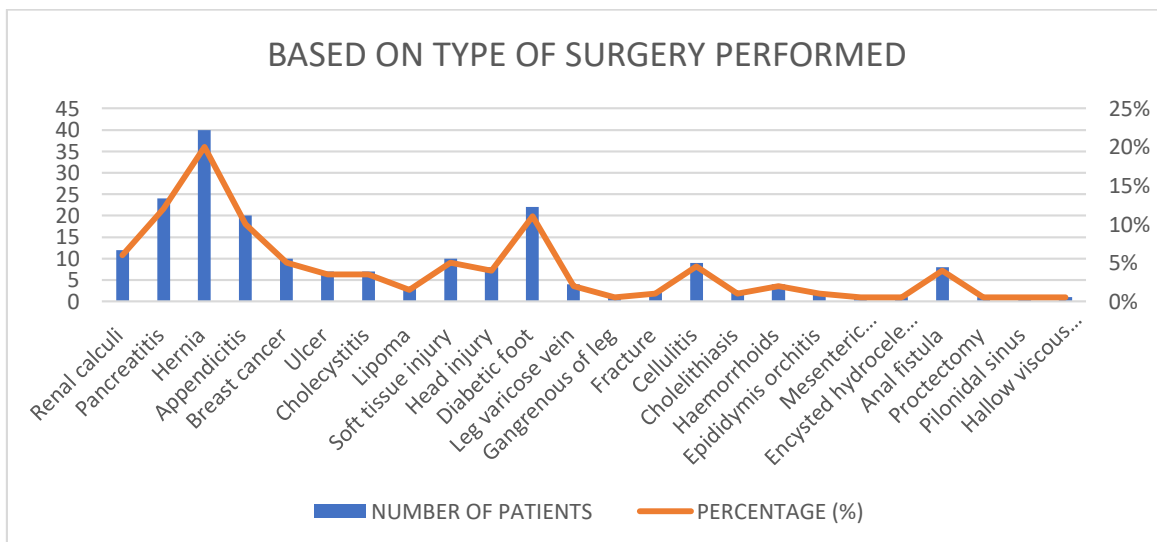


Figure 2: Patient distribution based on type of surgeries performed

Table 2: Categorization of drugs based on surgeries.

DISEASE	NUMBER OF DRUGS	PERCENTAGE (%)
Renal calculi	42	4.92%
Pancreatitis	134	15.72%
Hernia	122	14.31%
Appendicitis	109	12.79%
Breast cancer	23	2.69%
Ulcer	29	3.40%
Cholecystitis	36	4.22%
Lipoma	10	1.17%
Soft tissue injury	36	4.22%
Head injury	30	3.52%
Diabetic foot	117	13.73%
Leg varicose vein	16	1.87%
Gangrenous of leg	5	0.58%
Fracture	10	1.17%
Cellulitis	54	6.33%
Cholelithiasis	10	1.17%
Haemorrhoids	16	1.87%
Epididymis orchitis	6	0.70%
Mesenteric lymphadenitis	10	1.17%

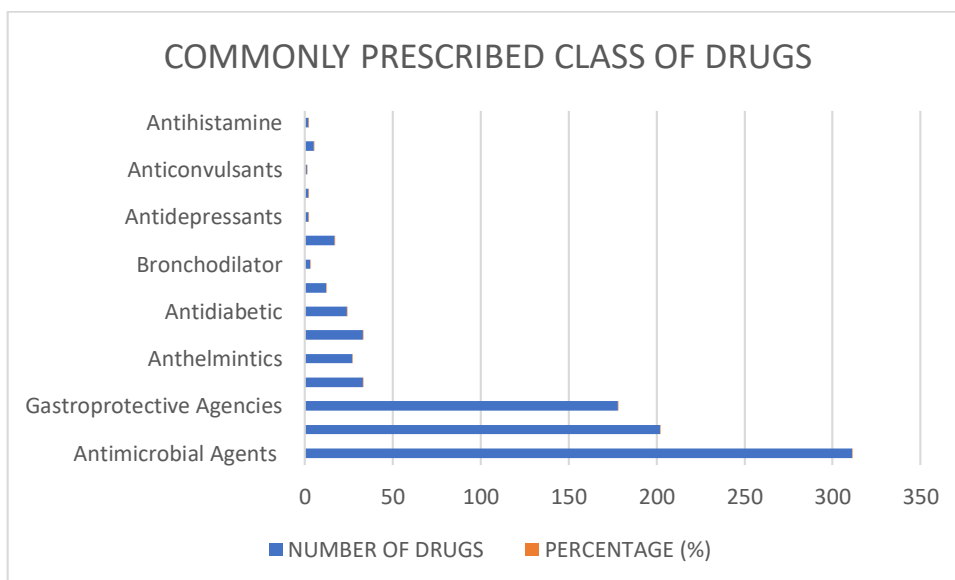


Figure 3: Commonly prescribed class of drugs

Table 3: Prescribing pattern of drugs in Hernia

GROUP OF DRUGS	DRUGS	NUMBER OF DRUGS PRESCRIBED	PERCENTAGE (%)
Antimicrobials (30)	Amikacin	4	13.33%
	Metronidazole	12	40%
	Ceftriaxone	4	13.33%
	Cefotaxime	6	20%
	Kefchek	4	13.33%
Analgesics (8)	Tramadol	4	50%
	Diclofenac	2	4.54%
Gastroprotective (44)	Pantoprazole	2	4.54%
	Ranitidine	42	95.45%
Antiemetics (4)	Ondansetron	4	100%
Anthelmintic	Albendazole	14	100%
Vitamin Supplements (8)	Ferrous sulphate	4	50%
	B complex	4	50%
Antidiabetics (6)	Metformin	2	33.3%
	Glibenclamide	2	33.3%
	Human atrapid	2	33.3%
Bronchodilator (2)	Deriphylline	2	100%
Electrolyte Replenisher (2)	Dextrose normal saline	2	100%
Antidepressant (2)	Diazepam	2	100%
Antihypertensive (2)	Enalapril	2	100%

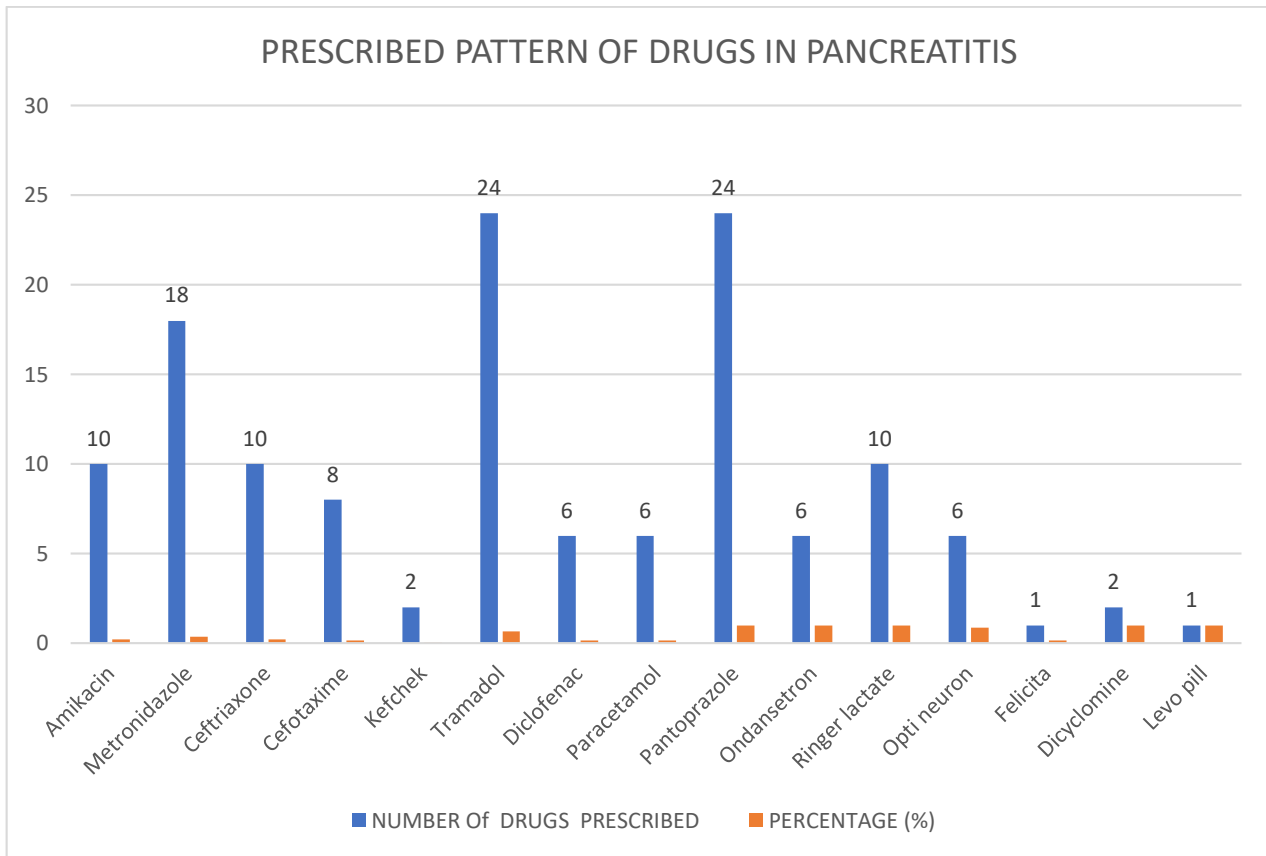


Figure 4: Prescribing pattern of drugs in Pancreatitis

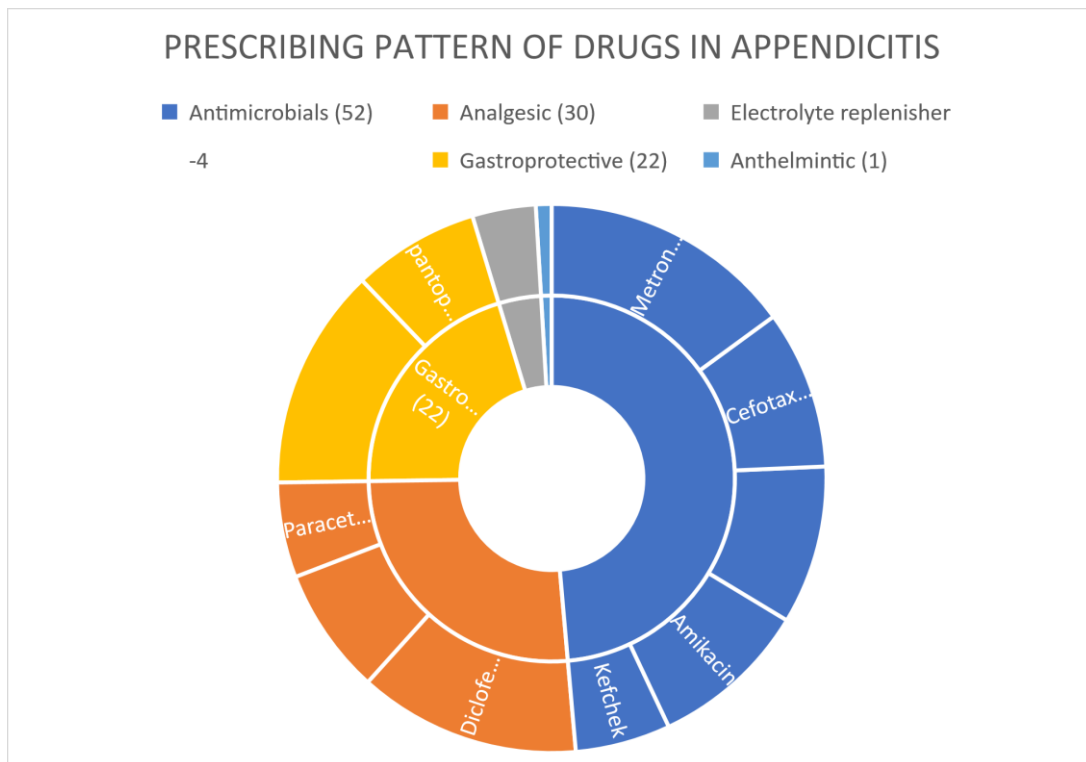


Figure 5: Prescribing pattern of drugs in Appendicitis

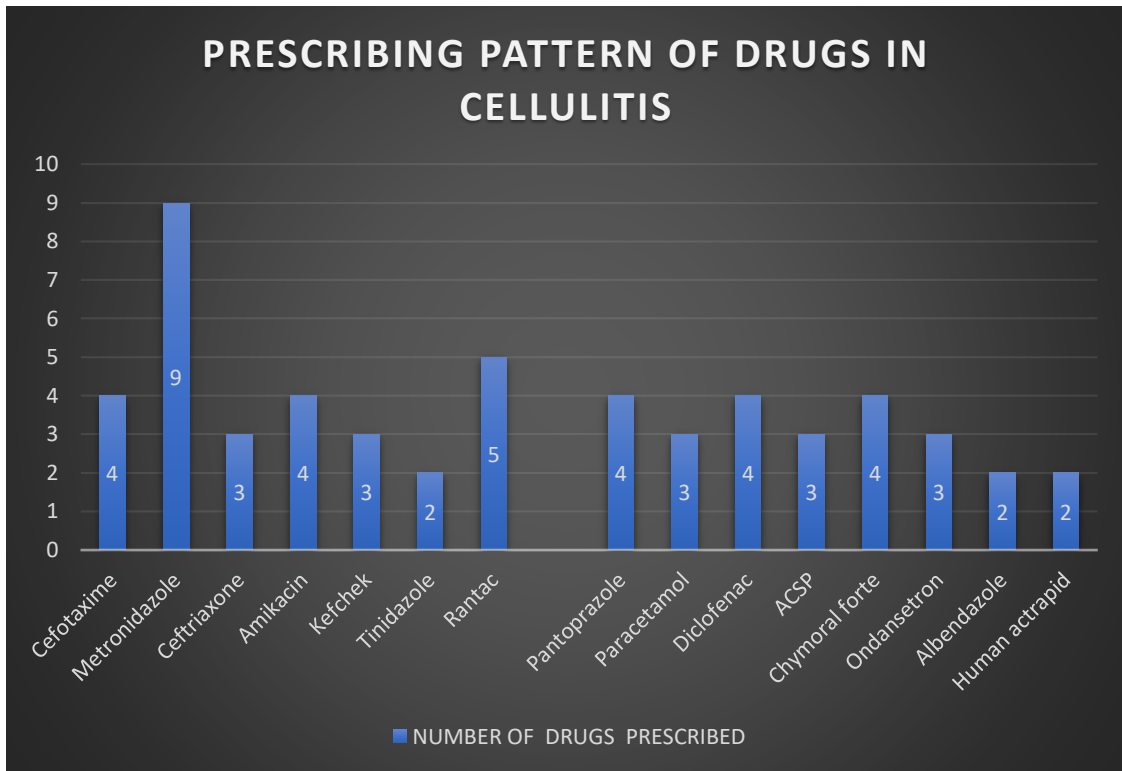


Figure 6: Prescribing pattern of drugs in cellulitis

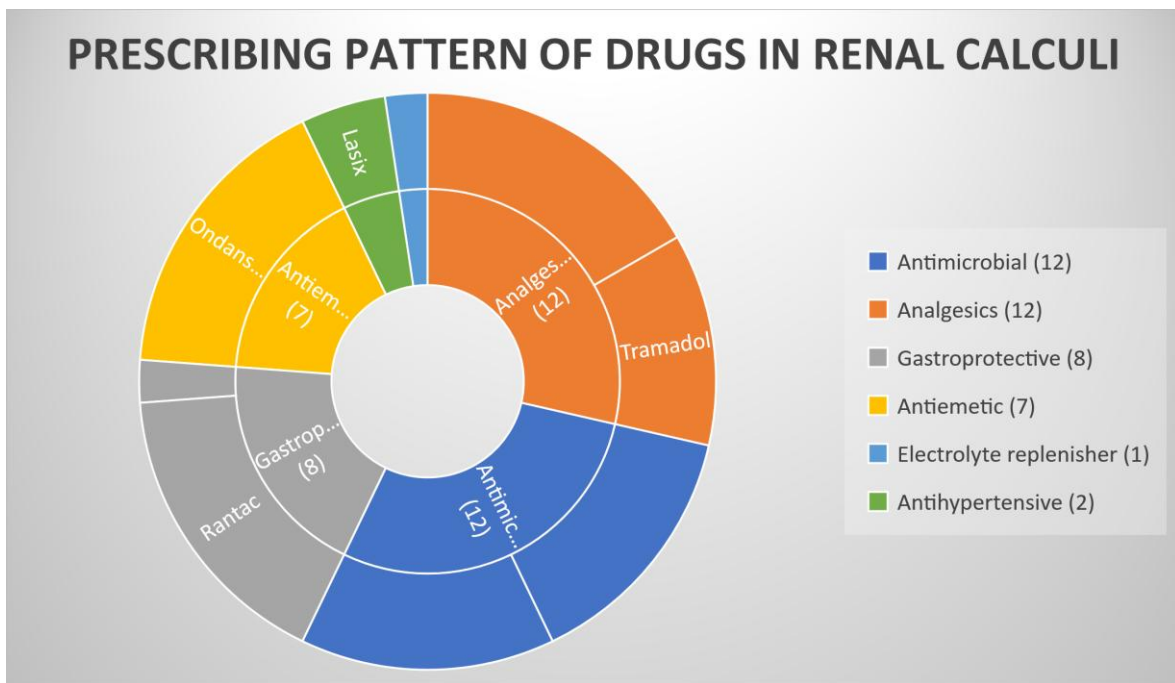


Figure 7: Prescribing pattern of drugs in Renal calculi

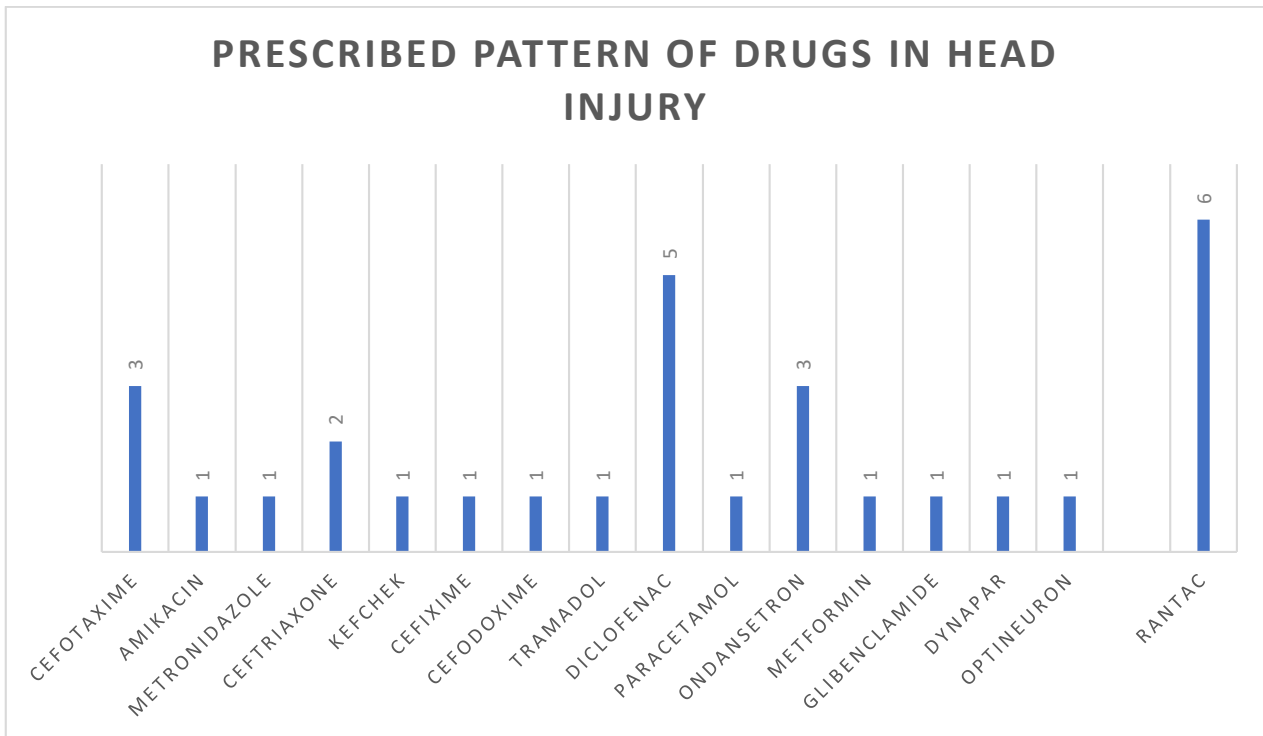


Figure 8: Prescribing pattern of drugs in Head Injury

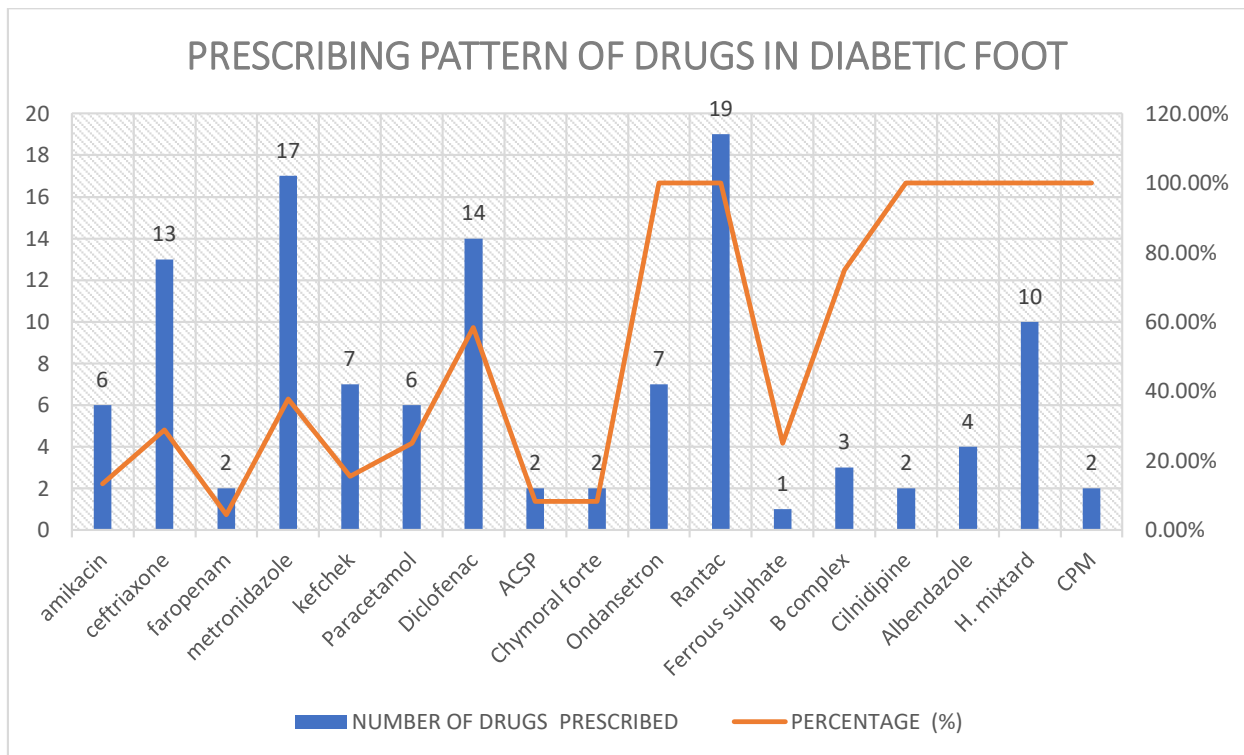


Figure 9: Prescribing pattern of drugs in diabetic foot

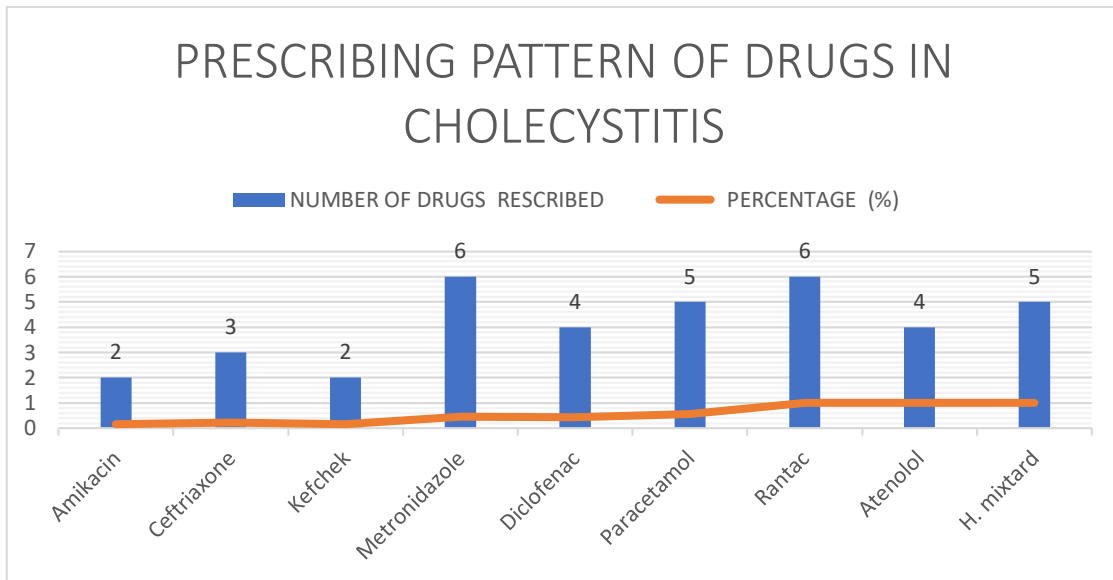


Figure 10: Prescribing pattern of drugs in cholecystitis

Table 4: Prescribing pattern of drugs in lipoma

GROUP OF DRUGS	DRUGS	NUMBER OF DRUGS PRESCRIBED	PERCENTYAGE (%)
Antimicrobials (3)	Amikacin	1	33.3%
	Ceftriaxone	2	66.6%
Analgesics (2)	Diclofenac	2	100%
Gastroprotective (3)	Rantac	3	100%
Vitamin supplements (1)	B complex	1	100%
Anthelmintic (1)	Albendazole	1	100%

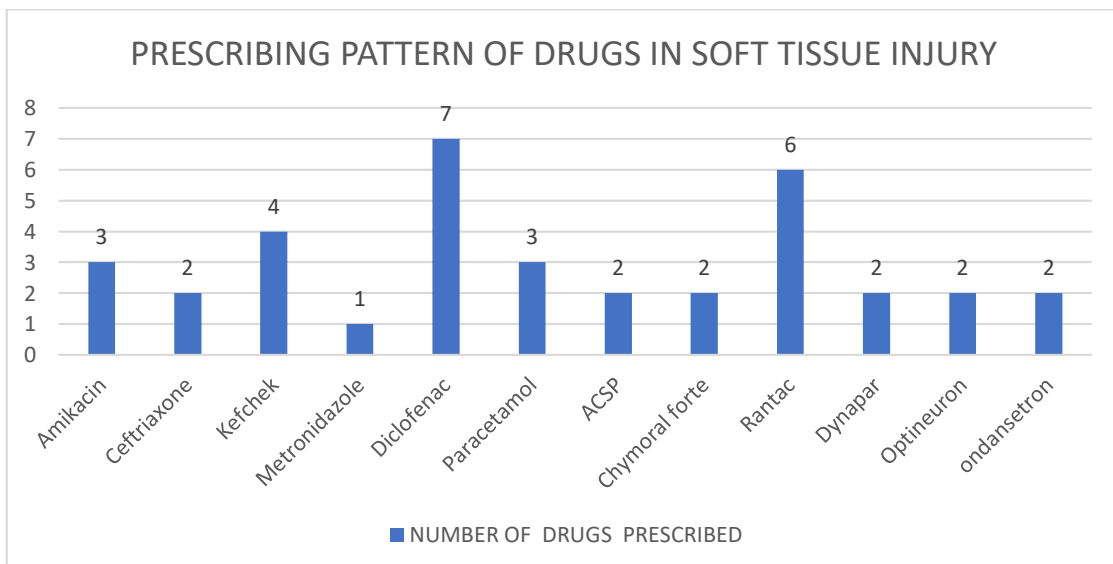


Figure 11: Prescribing pattern of drugs in soft tissue injury

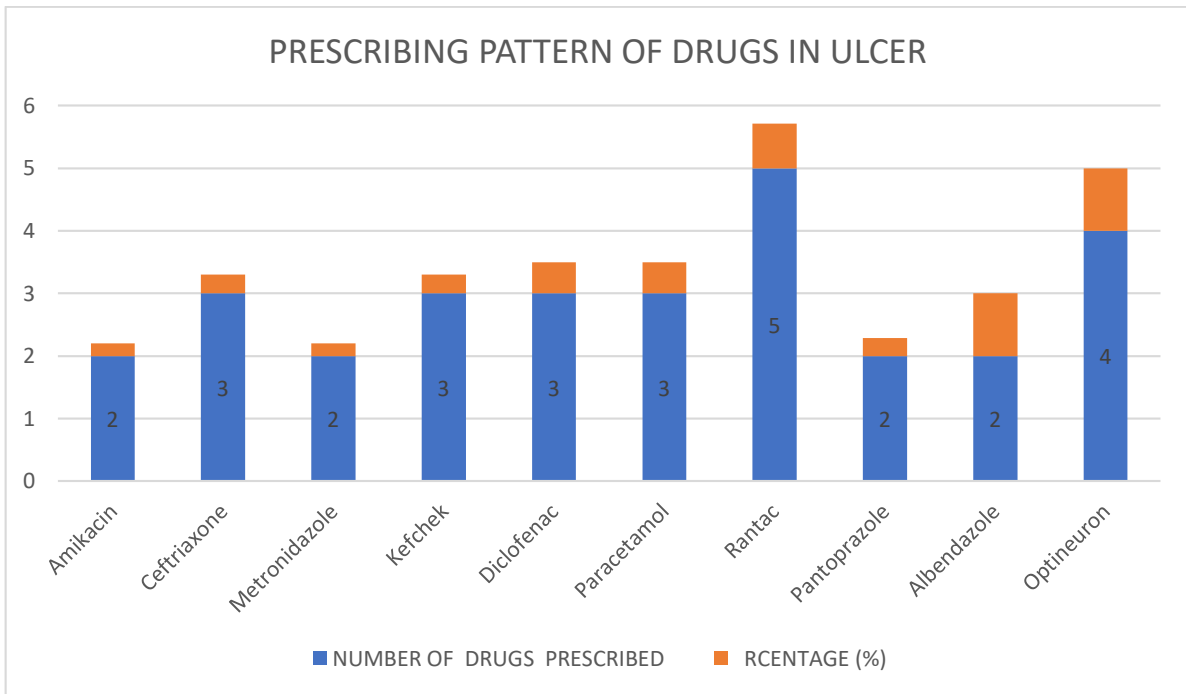


Figure 12: Prescribing pattern of drugs in ulcer

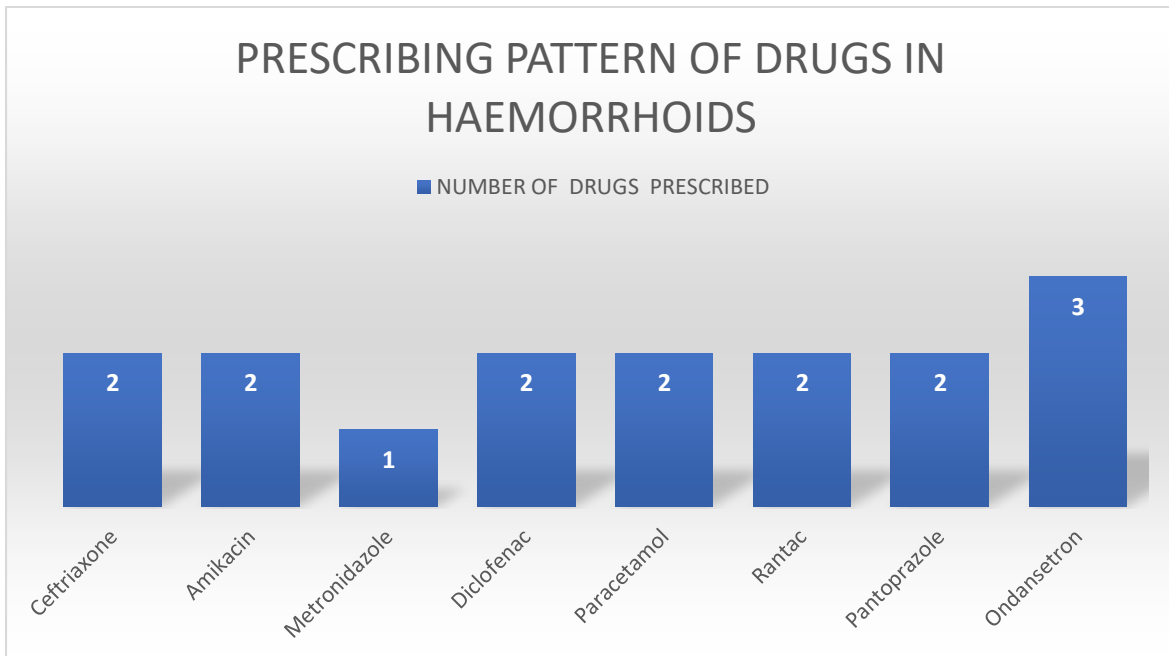


Figure 13: Prescribing pattern of drugs in Haemorrhoids

Table 5: Prescribing pattern of drugs in Mesenteric lymphadenitis

GROUP OF DRUGS	DRUGS	NUMBER OF DRUGS PRESCRIBED
Antimicrobials (5)	Cefotaxime	2
	Metronidazole	3
Analgesics (2)	Diclofenac	2
Gastroprotective (3)	Pantoprazole	3

Table 6: Prescribing pattern of drugs in Epididymis orchitis

GROUP OF DRUGS	DRUGS	NUMBER OF DRUGS PRESCRIBED
Antimicrobials (2)	Metronidazole	2
Analgesics (2)	Diclofenac	2
Gastroprotective (2)	Pantoprazole	2

Table 7: Prescribing pattern of drugs in Pilonidal sinus

GROUP OF DRUGS	DRUGS	NUMBER OF DRUGS PRESCRIBED
Antimicrobials (1)	Metronidazole	1
Analgesics (1)	Diclofenac	1
Gastroprotective (1)	Ranitidine	1
Anthelmintics (1)	Albendazole	1

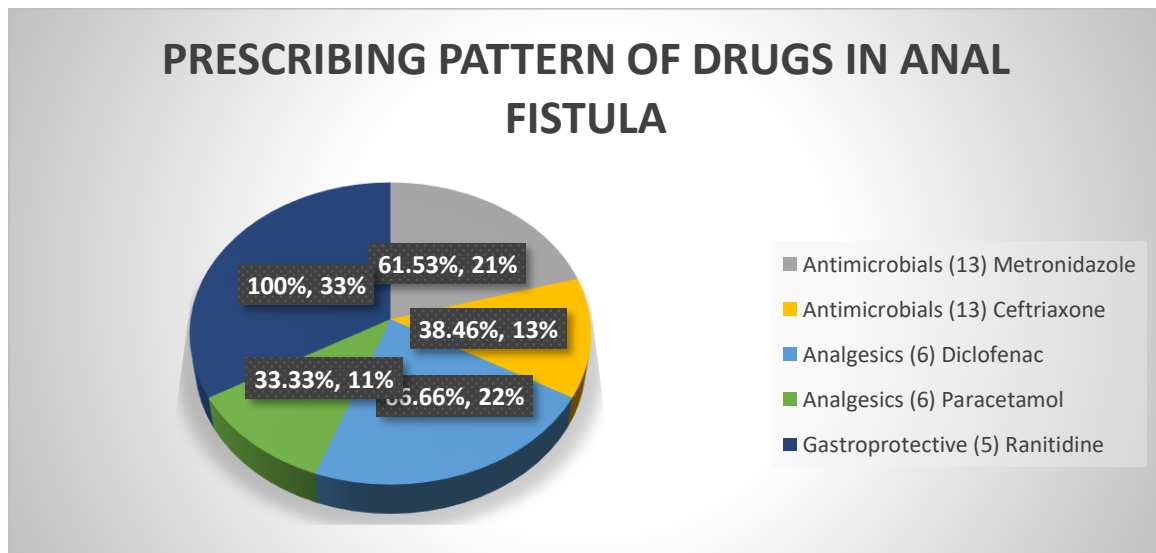


Figure 14: Prescribing Pattern of drugs in Anal fistula

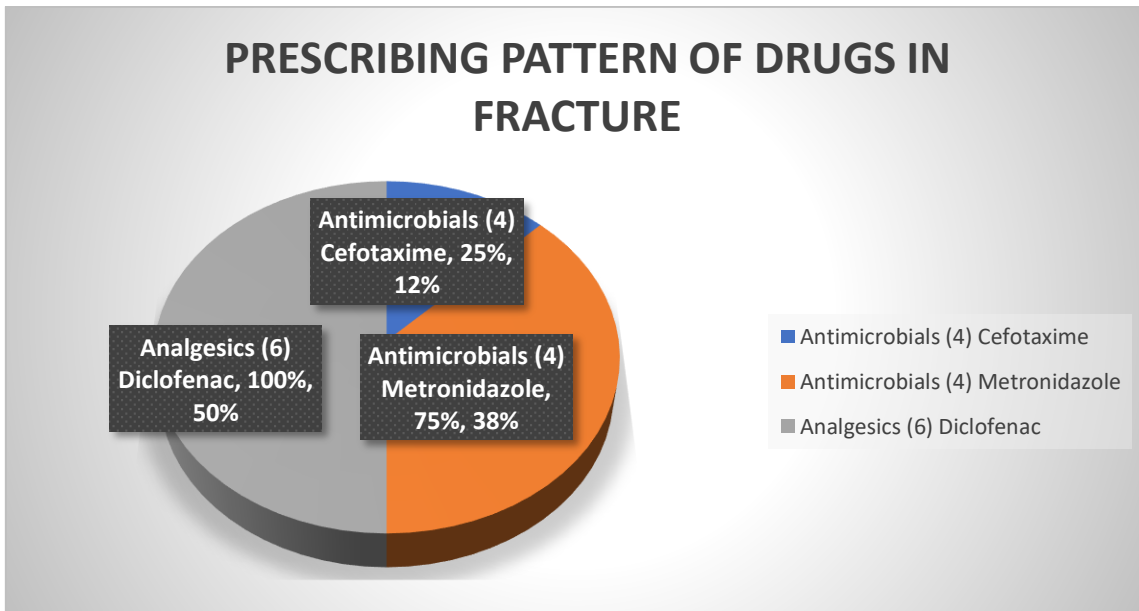


Figure 15: Prescribing pattern of drugs in Fracture

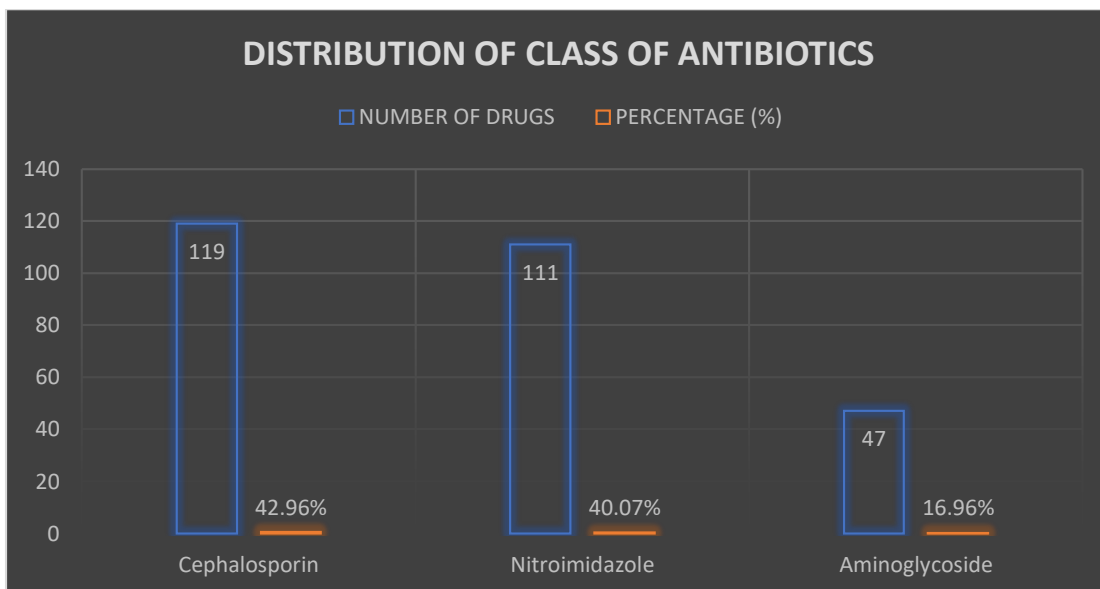


Figure 16: Distribution of class of Antibiotics

#### CONCLUSION:

A total of 200 patient case sheets were analyzed to evaluate the prescribing pattern of drugs in surgical patients. Among them, 147 (73.5%) were males and 53 (26.5%) were females, indicating male predominance. Most patients belonged to the age group of 19–59 years (72%), showing that the working-age population was more commonly affected by surgical conditions.

Hernia was the most frequently reported disease (20%), followed by pancreatitis (12%), diabetic foot (11%), and appendicitis (10%). Other conditions included cellulitis, renal calculi, cholecystitis, ulcers, lipoma, fractures, and soft tissue injuries.

A total of 852 drugs were prescribed during hospitalization, with an average of about 4–5 drugs per patient, suggesting moderate polypharmacy. Disease-wise analysis showed that pancreatitis patients received the highest number of drugs (15.72%), followed by hernia (14.31%), diabetic foot (13.73%), and appendicitis (12.79%). This indicates the need for multiple medications for infection control, pain relief, and supportive therapy.

Antimicrobials were the most commonly prescribed class of drugs (36.5%), mainly for prophylaxis and treatment of infections. Analgesics (23.7%) were widely used for postoperative pain management. Gastroprotective agents (20.89%) were prescribed to prevent gastric irritation and stress ulcers.

Among antibiotics, cephalosporins (42.96%) were most frequently used, followed by nitroimidazoles (40.07%) and aminoglycosides (16.96%). Ranitidine and pantoprazole were the commonly prescribed gastroprotective agents. Diclofenac and tramadol were the most frequently used analgesics.

In hernia cases, metronidazole and ranitidine were predominantly prescribed. Pancreatitis and diabetic foot cases required more drugs due to complications and infection risks, whereas minor conditions like lipoma required fewer medications.

Overall, the prescribing pattern was rational and consistent with standard treatment guidelines. The study highlights the importance of appropriate antimicrobial use and careful monitoring to ensure safe and effective drug therapy in surgical patients

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