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Research Article

**A STUDY ON DRUGS USE IN POST OPERATIVE  
MANAGEMENT IN THE DEPARTMENT OF SURGERY AT A  
TERTIARY CARE HOSPITAL****Dr. Faizan Sayeed\*<sup>1</sup>, Md. Khasim Iqbal<sup>2</sup>, Abdul Sayeed<sup>1</sup>, Md. Akram<sup>1</sup>**<sup>1</sup> Mesco College of Pharmacy, Hyderabad. (T.S)India.<sup>2</sup> Department of Pharmacy Practice, H.K.E.S's Matoshree Taradevi Rampure, Institute of Pharmaceutical Sciences, Kalaburagi-585 105, Karnataka, India.**Abstract:**

*Surgical management cannot be completed without the use of antimicrobial and analgesic drugs. Pharmacotherapy with multiple agents before, during and after surgery is marked in present day indoor hospital settings. Irrational prescription may lead to severe postoperative complications. The present prospective observational study aims to evaluate the drug utilization patterns using WHO core indicators and to assess how much it confirms to standard treatment guidelines in the inpatient ward of surgery in a tertiary care hospital, by collecting the admitted cases of surgery as per the study criteria.*

*A total of 104 cases were enrolled into the study for a period of 9 months. The results shown that, majority (43.26%) of the surgery cases were in the age group of 21-40 years. The majority of patients were males (67.30%) compared to females (32.70%). Majority of them were from rural area (74.03%) and the remaining is from urban area (25.97%). The majority of surgeries performed were clean-contaminated (46.15%). Anti-microbial agents were the most common class of drugs prescribed (35.14%), followed by analgesics (21.70%). Among antibiotics, antiprotozoals (33.33%) are the most preferred class with Metronidazole (31.80%) being prescribed major. Among analgesics, NSAIDs (75.62%) are the most preferred class with Diclofenac (53.12%) as major drug prescribed.*

*Tazobactam + piperacillin (33.33%) is the major combination of drug prescribed. On an average 7.09% of drugs were prescribed per patient and percentage of encounter with an antibiotic was 2.5%. Percentage of drugs prescribed by generic name were 7.19%, while only 60.92% of all drugs were from WHO list of essential medicines. And the percentage of fixed drug combinations from WHO essential drug list is only 7.05%. In this study we observed that the prescribing practice for antibiotics, especially use of prophylactic antibiotics is high. Lack of generic name prescribing and low incidence of prescribing medicines from essential drug list are the concerns that need to be addressed.*

**Keywords:** Anti-microbial agents; Surgery; WHO Core Indicators.**Corresponding Author:****Dr. Faizan Sayeed,**  
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**INTRODUCTION:**

Drug utilization research was defined by the World Health Organization in 1977 as “the marketing, distribution, prescription and use of drugs in a society, with special emphasis on the resulting medical, social and economic consequences” [1].

The World Health Organization (WHO)-programme in India on the rational use of drugs aims at promoting rational prescribing through a multi-pronged strategy, which includes intervention to correct drug use problems, adoption of essential drug list, development of standard treatment guidelines, determining and restricting irrational prescribing [2].

Assessment of drug use patterns with the WHO drug use indicators is becoming increasingly necessary to promote rational drug use in developing countries. Before activities are started to promote rational drug use, an effort should be made to describe and quantify the situation. Several well established survey methods are available for this purpose. One assessment method is a prescribing and patient care survey using the WHO health facility drug use indicators. These quantitative indicators are now widely accepted as a global standard for problem identification and have been used in over 30 developing countries [3].

The main principle of the drug utilization research is to facilitate the rational use of the drugs in populations. For the individual patient, the rational use of a drug implies the prescription of a well-documented drug at an optimal dose. Monitoring of prescription and drug utilization patterns should be done periodically to increase the therapeutic efficacy, decrease the adverse effects and provide feedback to the prescribers to ensure rational use of medicines, to make estimates of the number of patients exposed to drugs within a given time period, to describe the extent of drug use at a certain moment in a certain area, to estimate to what extent drugs are properly used, overused or under-used, to decrease the pattern or profile of drug use, assessing which alternative drugs are being used for particular conditions and to what extent, and to compare observed patterns of the drug use with currently recommended guidelines for the treatment [4].

All prescribing is not necessarily what patient needs and all patient needs are not necessarily met with drug therapy. Consequently, there is as much concern about inappropriate and expensive prescribing as about under-prescribing. The development of drug utilization as a research area made it possible to study drug prescribing and drug usage in a scientific and formal manner [5].

The medical audit improves the standards of medical treatment at all levels of health care delivery system. So, the medical audit is necessary for rationality. The study of prescribing pattern is a

component of medical audit which seeks monitoring, evaluation and necessary modifications in the prescribing practices of the prescribers to achieve rational and cost effective medical care. It necessary to define the prescribing pattern and to identify the irrational

Prescribing habits to drive a remedial message to the prescriber [6]. WHO in collaboration with the International Network for the Rational Use of Drug (INRUD) developed core indicators for assessing drug use they are

1. To evaluate average number of drugs per encounter
2. To determine percentage of drugs prescribed by generic name
3. To determine percentage of encounter with an antibiotic prescribed
4. To determine percentage of drugs prescribed from WHO essential drug list
5. To determine percentage of fixed drug combination from WHO essential drug list [7].

The pattern of drug use in a hospital setting needs to be monitored intermittently in order to analyze their rationality. Periodic auditing of prescriptions is essential to increase the therapeutic efficacy, decrease adverse effects and provide feedback to prescribers therefore used to oversee, monitor and analyze the observance of standards of medical treatment at all levels of the health care delivery system [8].

Surgical management cannot be completed without the use of antimicrobial and analgesic drugs because infection at surgical sites is one of the most common causes of postoperative morbidity and mortality [9].

During surgical management of diseases, irrational prescription may lead to severe complications in pre and postoperative management such that even mortalities may occur [10]. Postoperative utilization of drugs is very much marked. Drugs are prescribed for the purpose of analgesia prevention of infection, nausea and vomiting, intravenous fluids so forth and so on. Also there are very few studies which describe the utilization of drugs postoperatively. In the view of above we planned to study the drug use in the post operative management in department of surgery which helps to understand the pattern of drugs use at study site and also helps to make necessary modification in order to reduce the irrational use of medications.

**OBJECTIVES:**

The present study will be carried out by the following objectives:

**General objectives:**

1. To analyze the prescriptions for drug use in post-operative management.

**Specific objectives:**

1. To assess the demographic data.
2. To assess the socio-economic data.
3. To assess the type of surgery.
4. To assess the type of drugs like antibiotics analgesic and others
5. To assess the class of the drugs
6. To assess the dosage form and route of administration of the drugs used.
7. To assess the combination of drugs prescribed.
8. To assess the most preferred drugs and least preferred drugs
9. Duration of hospital stay of the patient after the surgery.
10. To assess the prescriptions as per WHO core indicators

### METHODOLOGY:

#### MATERIALS AND METHODS: Source of data:

Case sheets and lab reports of post-operative patients with relevant resources.

#### Methods of collection of data:

**Study site:** Study was conducted at Department of Surgery HKES's Basaveshwara Teaching and General Hospital, Gulbarga.

**Study Duration:** Study was carried out for a period of 9 months

**Study Design:** A prospective observational study.

**Study Criteria:** The study was carried out by considering following criteria:

#### Inclusion Criteria:

1. Prescriptions of post-operative patients of both genders.
2. Prescriptions of the post-operative patients willing to participate in the study.

#### Exclusion Criteria:

1. Prescriptions of the patients not willing to participate in the study.
2. Prescription of the Psychiatric patients who has undergone surgery.
3. Patients excluded were either unconscious, patients with diminished chances of survival, with unstable vital signs.

#### Study Procedure:

Study was conducted at the Department of Surgery at Basaveshwar Teaching and General Hospital with prior permission from the head of the department and after obtaining ethical clearance from institutional ethics committee, MR medical college Gulbarga. Patients were enrolled into the study by considering the study criteria. Informed consent was taken from each patient at the time of enrollment into the study.

The prescriptions of the post-operative patients were collected. The demographics and socioeconomics data was collected then the prescriptions were analyzed for type of surgery, different type of drugs used like antibiotics analgesic and others. The class dose and duration of the prescribed drugs was analyzed. Then the most and least preferred antibiotics and analgesic is identified. The duration of the hospital stay was

also analyzed. Finally prescription was assessed as per who core indicators.

### RESULTS:

During the study period of nine months, a total of 104 post operative cases were enrolled into the study and data was collected and analyzed.

#### Details of age distribution of patients:

Among 104 patients enrolled in the study, age distribution of the patients showed that 45 (43.26%) were in the age group of 21- 40 yrs, 32 (30.76 %) were in the age group of 41-60 yrs, 17 (16.34%) were in the age group of 0 -20, 09 (8.65%) were in the age group of 61 – 80 & there was only 1 (0.96%) patient in the age group of 81 - 100.

**Table 1: Details of Age distribution of Patients**

Age	No. of Patients	Percentage (%)
0 – 20	17	16.34
21 – 40	45	43.26
41 – 60	32	30.76
61 – 80	09	8.65
81 – 100	01	0.96
<b>Total</b>	<b>104</b>	<b>100</b>

#### Details of Gender distribution of Patients:

Out of 104 patients enrolled in the study, 70 (67.30%) were males and 34(32.70%) patients were females.

**Table 2: Details of Gender distribution of Patients**

Gender	No. of Patients	Percentage (%)
Male	70	67.30
Female	34	32.70
<b>Total</b>	<b>104</b>	<b>100</b>

#### Details of Occupational status of Patients:

Out of 104 patients, 18 (17.30%) patients were agriculturists, 19 (18.26%) were house wives, 12 (11.53%) were students, 06 (5.76%) were old age patients & 49 (47.11%) patients were dependent on other private occupations.

**Table 3: Details of Occupational status of Patients**

Occupation	No. of patients	Percentage (%)
Agriculture	18	17.30
H/W	19	18.26
Student	12	11.53
Old aged	06	5.76
Others	49	47.11

**Details of Residential distribution of patients:**

The results revealed that more number of patients were of rural than urban.

As shown in table – 4, out of 104 patients 77 (74.03%) were rural and 27 (25.97%) were Urban.

**Table 4: Residential distribution of patients**

Residence	No. of Patients	Percentage (%)
Rural	77	74.03
Urban	27	25.97
<b>Total</b>	<b>104</b>	<b>100</b>

**Details of Economic status of the patients:**

The results revealed that 34 (32.69%) were having a monthly income between 0 – 10,000, followed by 39 patients (37.50%) with a monthly income between 11,000 – 20,000, 17 patients (16.34%) with a monthly income 21,000 – 30,000, 9 patients (8.65%) with a monthly income between 31,000 – 40,000 and 5 patients (4.80%) with a monthly income between 41,000 – 50,000.

**Table 5: Details of Economic status of the patients**

Income	of patients	Percentage (%)
0 – 10,000	34	<b>32.69</b>
1,000 – 20,000	39	<b>37.5</b>
1,000 – 30,000	17	<b>16.34</b>
1,000 – 40,000	9	<b>8.65</b>
1,000 – 50,000	5	<b>4.80</b>

**Details of the duration of hospital stay of the patients after the surgery:**

The results revealed that more number of patients i.e, 43 patients (41.34%) stayed in hospital between 6 to 10 days, followed by 28 patients (26.92%) stayed between 1 to 5 days, 13 patients (12.50%) stayed between 11 to 15 days, 9 patients (8.65%) stayed between 16 to 20 days, 4 patients (3.84%) stayed between 31 to 35 days, 3 patients (2.88%) stayed between 26 to 30 days, 3 patients (2.88%) stayed for 36 and above days and only 1 patient (0.96%) stayed between 21 to 25 days.

**Table 6: Details of duration of hospital stay of the patients after the surgery**

No. of days	No. of patients	Percentage (%)
1 to 5	28	26.92
6 to 10	43	41.34
11 to 15	13	12.5
16 to 20	9	8.65
21 to 25	1	0.96
26 to 30	3	2.88
31 to 35	4	3.84
36 & above	3	2.88

The results of type of surgery performed revealed that, 25 surgeries (24.03%) were clean, 48 surgeries (46.15%) were clean – contaminated, 26 surgeries (25%) were contaminated and 5 (4.80%) were dirty surgeries.

**Table 7: Details of the type of surgery performed**

Surgery	No. of patients	Percentage (%)
Clean	25	24.03
Clean –	48	46.15
ntaminated	26	25
Dirty	05	4.80

**Details of type of drugs prescribed to the patients:**

In this study, the type of drugs involved was more with the Anti-microbial class of drugs 261 (35.41%), followed by Analgesics 160 (21.70%), Others 155 (21.03%), Proton pump inhibitors & H<sub>2</sub> receptor blockers 116 (15.73%) and Anti-emetics 45 (6.10%).

**Table 8: Details of type of drugs prescribed**

Type of Drugs	No. of drugs	Percentage (%)
Antibiotics	261	35.41
Analgesics	160	21.70
PPI & H <sub>2</sub> receptor	116	15.73
Anti-emetics	45	6.10
Others	155	21.03

**Details of class of antibiotics prescribed:**

In this study, the class of antibiotics involved was more with Antiprotozoal 87 (33.33%), followed by Cephalosporins 72 (28.73%), Pencillins 36 (13.79%), Beta- lactamase inhibitors 36 (13.79%), Aminoglycosides 14 (5.36%), Sulfonamides 08 (3.06%), Flouroquinolones 05 (1.91%) & Nitrofurantoin 03 (1.14%).

**Table 9: Details of class of antibiotics prescribed**

Class of drugs	No. of drugs	Percentage (%)
Antiprotozoal	87	33.33
Cephalosporins	72	28.73
Pencillins	36	13.79
Beta-lactamase inhibitors	36	13.79
Aminoglycosides	14	5.36
Sulfonamides	08	3.06
Flouroquinolones	05	1.91
Nitrofurantoin	03	1.14

**Details of class of analgesics prescribed:**

In this study, the class of analgesics involved was more with NSAIDS 121 (75.62%), followed by Opiate Narcotic Analgesics 39 (24.38%).

**Table 10: Details of class of analgesics prescribed**

Class of drugs	No. of drugs	Percentage (%)
NSAIDS	121	75.62
Opiate Narcotic Analgesics	39	24.38

**Details of Dosage form of drugs prescribed:**

The study revealed that the type of Dosage form of drugs involved were more with Injections 464(62.95%), followed by tablets 218 (29.57%), syrups 26 (3.52%), capsules 14 (1.89%), Topical 15 (2.03%) and others were 0.

**Table 11: Details of dosage form of drugs prescribed**

Dosage form	No. of drugs	Percentage (%)
Injection	464	62.95
Tablet	218	29.57
Syrup	26	3.52
Topical	15	2.03
Capsule	14	1.89

**Details of Route of administration of drugs prescribed:**

The study revealed that, the route of

administration of drugs was more with Intravenous route 457 (62%), followed by Oral route 258 (35%), Intramuscular route 07(0.94%) and other routes was 05 (2.03%).

**Table 12: Details of route of administration of drugs prescribed**

Route of administration	No. of drugs	Percentage (%)
Intravenous (IV)	457	62.00
Oral	258	35
Others	15	2.03
Intramuscular (IM)	07	0.94

**Details of combination of drugs prescribed:**

The results revealed that the combination of drugs used in the surgery cases are Tazobactam Piperacillin which was given to 26 patients (33.33%), followed by Amoxicillin Clauvinic acid to 11 (14.10%) patients, Cefoperazone Sulbactam to 07(8.97%) patients, Aceclofenac Paracetamol Tramadol to 07(8.97%) patients, Aceclofenac Tizanidine to 05 (6.41%) patients, Trimethoprim Sulfamethoxazole 04(5.12%) patients, Ceftriazone Sulbactam to 03 (3.84%) patients, Aceclofenac Drotoverine to 03 (3.84%) patients, Tramadol Acetaminophen to 03 (3.84%) patients, Esmoprazole Domperidone to 03 (3.84%) patients, Ampicillin Sulbactam to 01 (1.28%) patients, Ticarcillin Clauvinic acid 01 (1.28%) patients, Ibuprofen Paracetamol to 01 (1.28%) patients, Pantaprazole Domperidone to 01 (1.28%) patients, Ambroxil Solbutamol to 01(1.28%) patients and Aceclofenac Paracetamol to 01 (1.28%) patients.

**Table 13: Details of combination of drugs prescribed**

Combination of drugs	No. of patients	Percentage (%)
Tazobactam Piperacillin	26	33.33
Amoxicillin Clauvinic acid	11	14.10
Cefoperazone Sulbactam	07	8.97
Aceclofenac Paracetamol Tramadol	07	8.97
Aceclofenac Tizanidine	05	6.41
Trimethoprim Sulfamethoxazole	04	5.12
Ceftriazone Sulbactam	03	3.84
Aceclofenac Drotoverine	03	3.84
Tramadol Acetaminophen	03	3.84
Esmoprazole Domperidone	03	3.84
Ampicillin Sulbactam	01	1.28
Ticarcillin Clauvinic acid	01	1.28
Ibuprofen Paracetamol	01	1.28
Pantaprazole Domperidone	01	1.28
Ambroxil solbutamol	01	1.28
Aceclofenac Paracetamol	01	1.28

**RESULTS:****Details of antibiotics prescribed:**

The results revealed that the most preferred drug was Metronidazole which was given to 83 (31.80%) patients, followed by Tazobactam Piperacillin to 46 (17.62%) patients, Cefotaxime to 25 (9.57%) patients, Amoxicillin Clavulanic acid to 24 (9.19%) patients, Ceftriaxone to 23 (8.81%) patients, Cefixime to 13 (4.98%) patients, Amikacin to 11 (4.21%) patients,

Trimethoprim Sulfamethoxazole to 08 (3.06%) patients, Cefoperazone Sulbactam to 07(2.68%) patients, Ornidazole to 04 (1.53%) patients, Ceftriazone Sulbactam to 03 (1.14%) patients, Gentamycin to 03 (1.14%) patients, Nitrofurantoin to 03 (1.14%) patients, Ciprofloxacin to 02 (0.76%) patients, Levofloxacin, Ampicillin Sulbactam, Ticarcillin Clavulanic acid, Cefuroxime, Norfloxacin and Moxifloxacin are the least preferred drugs prescribed to 01 (0.38%) patients

**Table 14: Details of antibiotics prescribed**

Class of drugs	No. of drugs	Percentage (%)
Metronidazole	83	31.80
Tazobactam Piperacillin	46	17.62
Cefotaxime	25	9.57
Amoxicillin Clavulanic acid	24	9.19
Ceftriaxone	23	8.81
Cefixime	13	4.98
Amikacin	11	4.21
Trimethoprim Sulfamethoxazole	08	3.06
Cefoperazone Sulbactam	07	2.68
Ornidazole	04	1.53
Ceftriazone Sulbactam	03	1.14
Gentamycin	03	1.14
Nitrofurantoin	03	1.14
Ciprofloxacin	02	0.76
Levofloxacin	01	0.38
Ampicillin Sulbactam	01	0.38
Ticarcillin Clavulanic acid	01	0.38
Cefuroxime	01	0.38
Norfloxacin	01	0.38
Moxifloxacin	01	0.38

**Details of analgesics prescribed:**

The results revealed that the most preferred analgesic was Diclofenac which was given to 85 (53.12%) patients, followed by Tramadol to 37 (23.12%) patients, Paracetamol to 26 (16.25%) patients, Aceclofenac Tizanidine to 07 (4.37%) patients, Aceclofenac Drotoverine to 03 (1.87%) patients, Tramadol acetaminophen and aceclofenac, paracetamol, Tramadol are the least preferred drugs prescribed to 01(0.62%) patients.

**Table 15: Details of analgesics prescribed**

Class of drugs	Number of drugs	Percentage (%)
Diclofenac	85	53.12
Tramadol	37	23.12
Paracetamol	26	16.25
Aceclofenac      Tizanidine	07	4.37
Aceclofenac      Drotoverine	03	1.87
Tramadol      Acetaminophen	01	0.62
Aceclofenac      Paracetamol      Tramadol	01	0.62

**Summary of results obtained in accordance with WHO core indicators:**

The results revealed that the average number of drugs per encounter was 7.09. The percentage of drugs prescribed by generic name was found to be 2.5%. The percentage of encounter with an

antibiotic was 100%. The percentage of drugs prescribed from WHO essential drug list was 60.92%. And the percentage of fixed drug combinations from WHO essential drug list was found to be 7.05%.

**Table 16 : Summary of results obtained in accordance with WHO core indicators**

Core indicators assessed	Total drugs/encounters	Mean/Percentage
Average number of drugs per encounter	737	7.09
Percentage of drugs prescribed by generic name	53	7.19
Percentage of encounter with an antibiotic	261	2.5
Percentage of drugs from WHO essential drug list	449	60.92
Percentage of fixed drug combinations from WHO essential drug list	52	7.05

**DISCUSSION:**

A total of 104 post operative cases of surgery were enrolled in the study. The data from the enrolled surgery cases were collected and analyzed. The results revealed that out of the total surgery cases in the study, majority 45 (43.26%) of the cases were in the age group of 21 – 40 years, 32 (30.76 %) were in the age group of 41-60 yrs, 17 (16.34%) were in the age group of 0 -20, 09 (8.65%) were in the age group of 61 – 80 & there was only 1 (0.96%) patient in the age group of 81 - 100. Our findings comply with the study conducted by Khade A et al in which majority of the surgery cases were in the mean age of 21- 40 years.

The gender distribution of the surgery cases revealed that majority of the cases were males 70 (67.30%) when compared to females 34 (32.70%), which is similar to the study conducted by Siddhartha M et al in which majority of the cases were males 53, followed by females 22.

When the occupational status of the cases were analysed, the majority of patients were others 49 (47.11%), followed by housewives 19 (18.26%), agriculture 18 (17.30%), students 12 (11.53%) and others 06 (5.76%).

On the study of domicile status of the surgery cases, majority of cases belongs to the rural area 77 (74.03%) followed by urban 27 (25.97%).

When the economic status of the surgery cases were studied, majority of the patients were with the monthly income of 11,000 – 20,000, 39 (37.50%), followed by an monthly income of 10,000, 34 (32.69%), an monthly income of 21,000 – 30,000 17 (16.34%), an monthly income of 31,000 – 40,000 09 (8.65%) and monthly income of 40,000 and above 5 (4.80%).

The duration of hospital stay of surgery cases shown that majority of cases stayed in hospital for a duration of 6 – 10 days 43 patients (41.34%), followed by 1 – 5 days 28 patients (26.92%), 11 – 15 days 13 patients (12.50%), 16 – 20 days 9 patients (8.65%), 31 – 35 days 4 patients (3.84%), 26 – 30 days 3 patients (2.88%), 36 days and above 3 patients (2.88%) and only 1 patient (0.96%) stayed between 21 to 25 days.

The results of type of surgery performed revealed that, 25 surgeries (24.03%) were clean, 48 surgeries (46.15%) were clean – contaminated, 26 surgeries (25%) were contaminated and 5 (4.80%) were dirty surgeries.

When the most preferred type of drugs given to the surgery cases were analysed, the results revealed that Anti-microbial class of drugs was given to 261(35.41%) patients, followed by Analgesics 160 (21.70%), Others 155 (21.03%), Proton pump inhibitors & H<sub>2</sub> receptor blockers 116 (15.73%) and Anti-emetics 45 (6.10%) which was comparable with the study conducted by Salman MT et al in which antibiotics (93%) were most

preferred type of drugs.

In this study, the class of antibiotics drugs involved was more with Antiprotozoals 87 (33.33%), followed by Cephalosporins 72 (28.73%), Pencillins 36 (13.79%), Beta-lactamase inhibitors 36 (13.79%), Aminoglycosides 14 (5.36%), Sulfonamides 08 (3.06%), Flouroquinolones 05 (1.91%) and Nitrofurantoin 03 (1.14%).

In this study, the class of analgesics involved was more with NSAIDs 121 (75.62%), followed by Opiate Narcotic Analgesics 39 (24.38%).

The study revealed that the type of Dosage form of drugs involved were more with Injections 464(62.95%), followed by tablets 218 (29.57%), syrups 26 (3.52%), capsules 14 (1.89%) and Topical 15 (2.03%) which is comparable to the study conducted by Allam R et al in which (80.73%)176 were injections.

The study revealed that, the route of administration of drugs was more with Intravenous route 457 (62%), followed by Oral route 258 (35%), Intramuscular route 07(0.94%) and other routes was 15 (2.03%).

When the combination of drugs used in the surgery cases were analyzed Tazobactam Piperacillin was given to 26 patients (33.33%), followed by Amoxicillin Clavulanic acid to 11 (14.10%) patients, Cefoperazone Sulbactam to 07(8.97%) patients, Aceclofenac Paracetamol Tramadol to 07(8.97%) patients, Aceclofenac Tizanidine to 05 (6.41%) patients, Trimethoprim Sulfamethoxazole 04 (5.12%) patients, Ceftriazone Sulbactam to 03 (3.84%) patients, Aceclofenac Drotoverine to 03 (3.84%) patients, Tramadol Acetaminophen to 03 (3.84%) patients, Esmoprazole Domperidone to 03(3.84%) patients, Ampicillin Sulbactam to 01(1.28%) patients, Ticarcillin Clavulanic acid 01 (1.28%) patients, Ibuprofen Paracetamol to 01(1.28%) patients, Pantaprazole Domperidone to 01(1.28%) patients, Ambroxil Solbutamol to 01(1.28%) patients and Aceclofenac Paracetamol to 01 (1.28%) patient.

When the details of antibiotics prescribed were analyzed, the results revealed that the most preferred drug was Metronidazole which was given to 83(31.80%) patients, followed by Tazobactam Piperacillin to 46 (17.62%) patients, Cefotaxime to 25 (9.57%) patients, Amoxicillin Clavulanic acid to 24 (9.19%) patients, Ceftriazone to 23 (8.81%) patients, Cefixime to 13 (4.98%) patients, Amikacin to 11(4.21%) patients, Trimethoprim Sulfamethoxazole to 08(3.06%) patients, Cefoperazone Sulbactam to 07(2.68%) patients, Ornidazole to 04(1.53%) patients, Ceftriazone Sulbactam to 03 (1.14%) patients, Gentamycin to 03(1.14%) patients, Nitrofurantoin to 03(1.14%) patients, Ciprofloxacin to 02(0.76%) patients, Levofloxacin, Ampicillin Sulbactam, Ticarcillin Clavulanic acid, Cefuroxime, Norfloxacin and

Moxifloxacin are the least preferred drugs prescribed to 01 (0.38%) patient.

When the details of analgesics were analyzed, the results revealed that the most preferred analgesic was Diclofenac which was given to 85 (53.12%) patients, followed by Tramadol to 37 (23.12%) patients, Paracetamol to 26 (16.25%) patients, Aceclofenac Tizanidine to 07 (4.37%) patients, Aceclofenac Drotoverine to 03 (1.87%) patients, Tramadol Acetaminophen and Aceclofenac Paracetamol Tramadol are the least preferred drugs prescribed to 01 (0.62%) patient.

When the results obtained in accordance with WHO core indicators were considered it revealed that the average number of drugs per encounter was 7.09. The percentage of drugs prescribed by generic name was found to be 7.19%. The percentage of encounter with an antibiotic was 2.5. The percentage of drugs prescribed from WHO essential drug list was 6.92%. And the percentage of fixed drug combinations from WHO essential drug list was found to be 7.05%.

### CONCLUSION:

A total of 104 surgery cases were analysed during the study period. The results revealed that majority of the patients were in the age group of 21 – 40 years. This shows that the younger generation is the major victim of surgery. The more number of surgery cases were males. In our study majority of the patients were of low economic status. The lower income shows that the patients are workers and farmers that have heavy physical work which leads to trauma, accidents etc.

The outcome of the surgery cases revealed that most of the surgeries were clean – contaminated.

The study shows that Antibiotics (Antiprotozoals & Cephalosporins) & Analgesics (NSAIDS) were the most preferred type of drugs prescribed. Injections are the dosage form in which maximum number of drugs were given to patient and the route of administration for most of them has been intravenous.

The combinations of drugs prescribed in most of the cases were Tazobactam Piperacillin, followed by Amoxicillin Clavulanic acid, Cefoperazone Sulbactam and Aceclofenac Paracetamol Tramadol.

The study shows that the most preferred antibiotics are Metronidazole, followed by Cefotaxime and Ceftriaxone.

The least preferred drugs are Cefuroxime, followed by Norfloxacin and Moxifloxacin. Among analgesics, Diclofenac is the most preferred drug and Paracetamol is the least preferred.

The average number of drugs per prescription was relatively high. The trend of prescribing the drugs in

branded names instead of generic names has been noticed. In this study, we observed that the prescribing practice for antibiotics, especially use of prophylactic antibiotics is high. Low incidence of prescribing medicines and fixed drug combinations from essential drug list is a significant concern.

The study concludes that there is need to educate and motivate the prescriber. To prescribe the drugs in generic name and to select the drugs from the WHO Essential list of medication. In this regard the pharmacist care plan a vital role.

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