

A Study on prescribing pattern of drugs in orthopaedic in-patient department at a tertiary care hospital in Guntur region

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ABSTRACT

The descriptive observational study was conducted over six months among inpatients of the orthopaedics department. The aim is to observe the prescribing pattern of drugs, to find out the percentage of analgesics given and most commonly prescribed analgesic, to compare the prescribed drugs whether they are in NLEM, WHO list and calculate DDD/100 Bed-days and to analyze the drugs for WHO prescribing drugs. A total of 250 patients were included in the study. Out of this, 168 were male, and 82 were female. Most of the patients were in the age group of 31-40[45 in number with 18%]. The most common condition was found to fracture [113 in number with 95.2%]. Commonly prescribed drugs were analgesics 447 with 26.76%. Among all the NSAID's, PCM was most commonly prescribed analgesic with 34.4%. The highest no. of drugs was found to be 4drugs/prescription with 24%. Monthly one analgesic was prescribed per prescription with 38.8%. Utilization of analgesics in term of DDD/100 Bed-days was 55.26; Drugs will be evaluated per prescription as per prescribing indicators of WHO was done, the average no. of drugs per prescription was found to be 0.45, percentage of drugs prescribed by generic name was found to be 13.3%, percentage of encounters with antibiotics prescribed were found to be 94.4%, In ratio percentage of drugs prescribed from the national list of essential medicine was found to be 92.6%. This study would help to facilitate better health care delivery.

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INTRODUCTION

Orthopedic is a fundamental unit where various drugs, antibiotics, NSAID's, gastroprotective drugs are given to the patients .Most of the patients

present in the orthopaedic department with fractures which is the most common condition followed by Arthritis, degenerative bone diseases (osteoporosis, Spondylitis) and joint replacements [1]. Pain is most commonly experienced by these patients, which is defined as "An unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage". Analgesics such as NSAID'S are commonly prescribed class of drugs for the management of pain along with muscle relaxants. All these drugs have ADR's like gastric ulceration, which is most common, followed by nephrotoxicity, abdominal bleeding with excessive or irrational use.NSAID'S are also the most commonly prescribed medications in the orthopaedic department and most commonly used over the counter (OTC) drug [1]

Periodic evaluation of drug utilization has to be done to enable for proper modification in the prescription of drugs which helps to gain proper therapeutics benefit and results in adverse effect reduction [2].

MATERIALS AND METHODS

Adverse effects

Use of NSAID's can increase the risk of gastrointestinal problems, kidney-related diseases and adverse cardiovascular events. Since they are used commonly in postoperative pain, there is an evident chance of complications in the kidney [3]

1. Effect on the cardiovascular system

NSAID's increases the risk of myocardial infarction and stroke. This occurs within the use of a 1week.

2. Effect on gastrointestinal

The principal adverse drug reaction associate with NSAID's use is direct and indirect irritation of the GI tract. The acidic molecule directly irritates the gastric mucosa by inhibition of cox1 and cox2, which reduces the levels of protective prostaglandins.

Inhibition of prostaglandin synthesis in GI tract causes increased gastric acid secretions, diminished bicarbonate secretion. So it causes nausea, vomiting, bleeding, indigestion & diarrhoea.

3. Effect on inflammatory bowel disease

NSAID's causes gastric bleeding and form ulceration in the gastric lining.

4. Effect on the renal system

Effect on kidneys occurs due to a change in the renal blood flow. Prostaglandins usually dilate the afferent arterioles of the glomeruli an indicator of kidney function. Since NSAID's block, the prostaglandins mediated the effect of afferent arterioles dilation, in over usage of NSAID's causes the constriction of the afferent arterioles and decreased renal perfusion flow & GFR. Which causes nephrotoxicity

5. Photosensitivity reactions

The 2-aryl propionic acid is the most likely to produce photosensitivity reactions. International agencies such as the WHO and International Network of Rational Utilization of drugs have recognized the importance of drugs utilization studies for the promotion of rational drugs use and have applied themselves to develop standard drug use indications, data collection methods.

The present study was conducted to obtain information on the prescribing pattern of inpatients of the orthopaedic department and to evaluate the data for

the WHO core indicators regarding prescribing practices.

Drug utilization

Rational use of medicines (RUM) is an issue which has importance globally, which aims in evaluating the availability, accessibility and correct prescribing of drugs. It is more critical in the Assessment of drug utilization which is vital for clinical, economic and educational purposes [4].

Drug utilization defines as "the marketing, distribution, prescription and use of drugs in a society with special emphasis on the resulting medical, social and economic consequences" [5].

The DDD is an average maintenance dose per day for a drug used for its main indication in adults [6].

1. Drug utilization research studies are conducted in the inpatient's settings is a useful tool which helps in evaluating drug prescribing pattern, efficiency and cost-effectiveness of hospital formulation [7].

2. Defined a Daily Dose is also an important tool used to compare the drug utilization among different clinical setups with in-country and between different countries.

3. DDD/100 Bed days provide a rough estimate of drug consumption in hospital inpatient's, and it is a fixed unit of measurement independent of formulation and price [8].

4. DDD will only be assigned for drugs that already have ATC code, as shown in Table 1 [9].

The purposes of the ATC/DDD system is to serve as a tool for drug utilization research to improve quality of life.

The DDD is the assumed average maintenance dose per day for a drug used for its main indication in adults.

1. Drug utilization data presented in DDD's only give a rough estimate of the concentration of the drug use, as shown in Table 2.
2. It provides a fixed unit of measurement independent of price, commences, package size and Strength, enabling the researcher to assess trends in drug consumption and to perform comparisons between population group [10].

By applying DDD, it is possible to

1. changes in drug utilization over time can be examined.
2. International comparisons can be easy.

Table 1: Analgesics and its ATC codes

Drug Name	ATC Code
Aceclofenac	M01AB16
Diclofenac	M01AB05
Ibuprofen	M01AE01
Ketorolac	M01AE15
Piroxicam	M01AC0A
Celecoxib	M01AH01
Paracetamol	M02BE01
Meloxicam	M01AC05
Oxyphenbutazone	M02AA05
Phenylbutazone	M02AA02
Tramadol	N02AX02
Aceclofenac + Paracetamol	M01AX
Ibuprofen + Paracetamol	N02BE01

- Effect of an intervention on drug use can be evaluated.
- Relative therapy intensity with a various group of drugs can be documented.
- Follow the changes in the use of class drugs.
- Evaluate regulatory effects and effects of interventions on prescribing patterns [11].

Formula [12]

DDD Calculation

$$\text{DDD}/100 \text{ bed days} = \frac{\text{Total dose during study Period}}{\text{-----}}$$

$$\frac{\text{DDD of drug} \times \text{Study duration} \times \text{Bed strength} \times \text{Average bed occupancy ratio}}{\text{-----}}$$

Occupancy ration =

$$\frac{\text{Total patient service days for a period} \times 100}{\text{-----}}$$

$$\frac{\text{Total in - patient bed count - no of days in study period}}{\text{-----}}$$

Principles of DDD

- The basic principle is to a lot only one DDD per route of administration within an ATC Code.
- DDD of a single substance will depend upon monotherapy.
- Products which are not approved or marketed in at least one company for such substances DDD will not be assigned [13] [14].

- For substances indicated for rare disorders with individual dosing, the working group could decide not to assign a DDD.
- DDD's for herbal medicinal products are not included in the ATC.

NLEM (2015) (National List of Essential Medicines)

WHO introduced the concept of essential medicines/drugs in 1977, which is adopted by several countries, private organization and non-profit supply agencies. The essential drug list includes cost-effectiveness medicines for a particular indication. It is developed by the standard treatment guidelines for the need of the majority of the population .

A higher quality of care, better management of medicines and more cost-effective use of health resources can be achieved with proper selection of a limited range of essential drugs.

The list of essential medicines guides the hospital drug policies, procurement and supply of medicines in the public sector, medicine cost reimbursement and medicine donations. It helps in monitoring the pricing of medicine.

The list serves as a reference document for correct dosage form and Strength for prescribing. Preference is given to single-drug formulation as opposed to a fixed-dose combination where appropriate.

Hence, use of NELM is expected to improve prescribing practice as well as the health outcome. The appropriate use of medicines selected in the NLEM promotes the rational use of medicines.

Table 2: Standard DDD values of analgesics

Drug Name	DDD of Drug
Acetaminophen	3gm
Diclofenac Sodium	0.1gn
Ibuprofen	1.2gm
Indomethacin	0.1gm
Naproxen	0.5gm
Acetylsalicylic Acid	3gm
Phenylbutazone	0.3gm
Tramadol	0.3gm

Such rational use of medicines, especially antimicrobial drugs, reduce the development of drug-resistant.

The list also serves as a reference for assessing the healthcare access of the populace. Lastly, NELM serves as a tool for public education and training of healthcare providers [15], as shown in Tables 3, 4 and 5 [16].

Aim

1. The study aims to assess the prescribing pattern of drugs in the orthopaedic inpatient department at tertiary care hospital.

Justification

1. Analgesics prescribing in the orthopaedic department is most common and essential to treat some disease conditions like osteoarthritis, surgeries, road accidents and fractures.
2. The most common side effects of analgesics are gastrointestinal bleeding, renal toxicity and photosensitivity reactions.
3. To reduce the side effects produced by analgesics, it is essential to prescribe the drug based on risk versus benefit ratio.

Objectives

Primary Objective

1. To study and observe the drug prescribing pattern in orthopaedic, inpatient department at tertiary care hospital in Guntur region.

Secondary Objective

1. To find out the percentage of analgesics given prescribed and most commonly prescribed analgesic.

2. To identify whether the prescribed drugs are in NLEM, WHO list.
3. To perform drug utilization review for analgesics, NSAID's.

MATERIALS AND METHODS

Study Site

A descriptive observational study was conducted at the orthopaedic inpatient department at tertiary care hospital in Guntur region.

Study Population

The study was conducted in all the male and female patients from age 10-80years.

Study Duration

The study was carried out for 6months from September 2019 to February 2020, and the data were collected from patient case record form.

Sample Size

Total number of subjects: 250

Sample criteria

Inclusion Criteria

Patients who received NSAID's with other medication and who are aged 10-80 years in the orthopaedic ward during the study period.

Exclusion Criteria

Pregnant women, lactating mother, unconscious patients, cancer patients, psychiatric patients, infants, and subjects who are not mentioned in inclusion criteria, which are not willing to participate in the study.

Study Procedure

Step 1: A descriptive observational study was conducted at tertiary care hospital in Guntur.

Step 2: After explaining the procedure, the data was collected.

Table 3: NLEM (2015):[non-opioid analgesics, anti-paretic's and non-steroidal anti-inflammatory medicines]

Medicine	Level of Health Care	The dosage form & Strength
Acetyl salicylic Acid	P,S,T	Tab, 300mg to 500mg Effervescent Dispersible / Enteric Coated tablet 300-500mg
Diclofenac	P,S,T	Tab.50mg Inj. 25mg / ml
Ibuprofen	P,S,T	Tab.200mg Tab. 400mg Oral Liq. 100mg / 5ml

Table 4: NLEM: Opioid analgesics

Sl. No.	Medicine	Level of Health care	The dosage form and Strength
1	Fentanyl	S, T	Injection 50mcg/ml
2	Morphine	P,S,T	Tablet 10mg Injection 10mg / ml Injection 15mg/ml
3	Tramadol	S, T	Capsule 50 mg Capsule 100mg Injection 50mg/ml

Table 5: WHO essential model list (2017)

Medicine	Dosage form & Strength
Acetyl salicylic Acid	Suppository : 50 to 150 mg Tab : 100 to 500 mg
Ibuprofen	Oral Liq. 200mg /15ml Tab : 200mg, 400mg, 600mg Not in children less than 3 months
Paracetamol	Oral : 120mg / 5ml 125mh/5ml Suppository : 100mg Tab, 100mg to 500mg

Step 3: Data was collected from the patient case report form or case record form.

Step 4: The data includes demographic details past medical and medication history, present medical and medication history information in case sheet or case record form.

Step 5: The data was documented in a predesigned data collection form, and the percentage of drug prescribed will be calculated.

Step 6: The total percentage of NSAID's prescribed was calculated, and most commonly prescribed NSAID's was identified.

Step 7: To verify whether the prescribed drugs are according to the WHO model list and NELM list.

Step 8: Total drug utilization of analgesics was measured in DDD/100 Bed days, and the prescription was analyzed by using WHO prescribing indicators.

Sources of Data

1. Data was collected from the inpatient case form or case sheet.

Data Collection Method

1. Data was collected from the patient case report form.

2. The data include patient demographic details such as past medical and medication history, present medical and medication history.

3. The percentage of prescribed drugs, ATC classification and drug utilization, (Defined Daily Doses) will be known.

Expected Benefits

1. To know the percentage of analgesics prescribed and most commonly prescribed analgesics.

2. To know the total drug utilization of analgesics in the orthopedic department at tertiary care hospital.

Limitations

In this study, only orthopaedic inpatient department was included.

RESULTS

The study results show that 67.2% are male and 34% female.

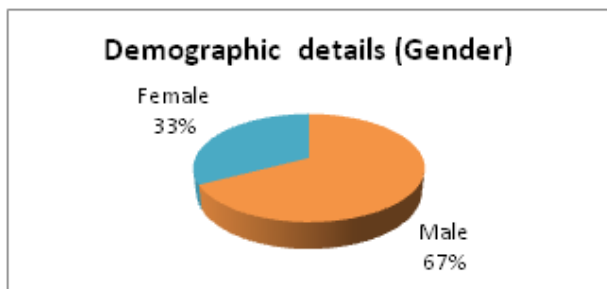


Figure 1: Gender Distribution

Age-wise distribution of patients was analyzed, and it was found that 6% of prescriptions were in the age group of 10 – 20 years, 15.6% in the age group of 21-30 years, 18% in the age group of 31-40 years, 15.2% in the age group of 41-50 years, 16% in the age group of 51-60, 16% in the age group of 61-70 years and 13.2% in the age group 71-80 years, as shown in Figure 1.

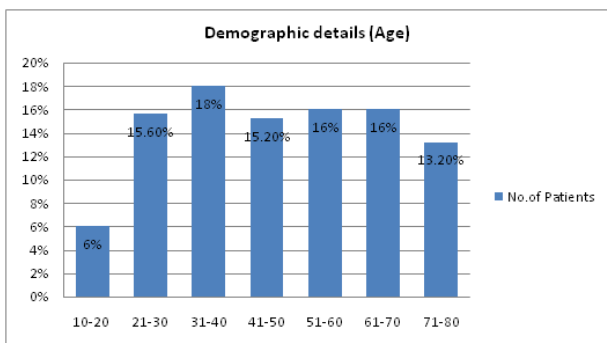


Figure 2: Age-wise Distribution

In this study, fractures were found to be 45.2%; Road accidents were 24.4%, Arthritis was about 22.4%, Implants were 2.4%, Spondylitis was 2%, Total hip replacement was found to be 3.6%, as shown in Figure 2.

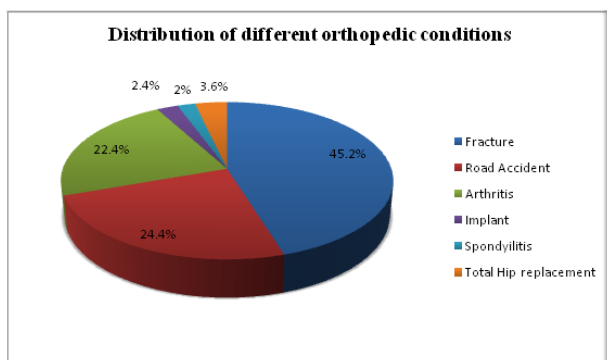


Figure 3: 3 Indications

In this study, on analyzing co-morbidities of the study population, it was noted that 16.4% with diabetes, 21.6% with hypertension, 5.6% with thyroid disorders, as shown in Figure 3.

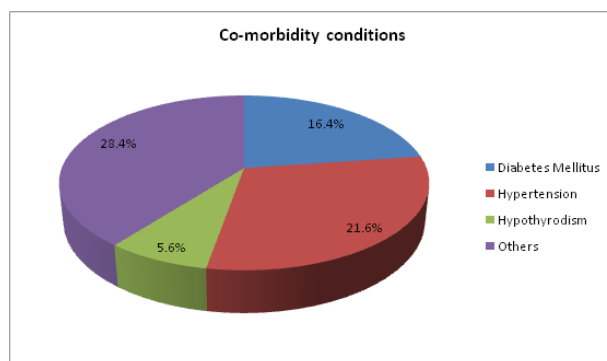


Figure 4: Comorbidity conditions

In this study, NSAID's percentage was found to be 26.76%, Antibiotics 17.005% Gastro-protectives 19.04%, Multivitamin was 7.96%, and co-prescribed drugs was 29.22%. Figure 4

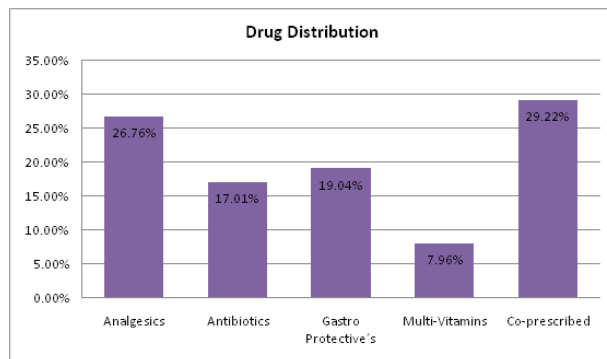


Figure 5: Drug distribution

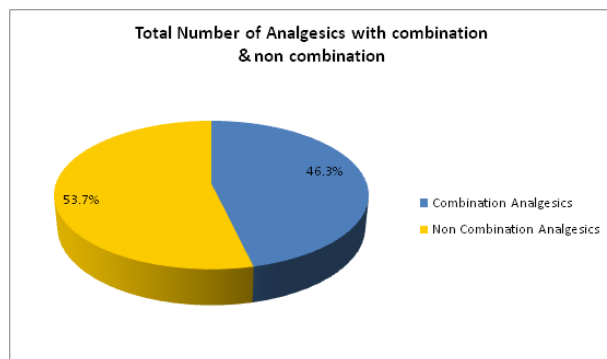


Figure 6: Total number of analgesics with combination & non-combination

WHO prescribing indicators based Evaluation of Drug

1. Average number(no) of drugs per encounter = total number of drugs prescribed / total number of encounters surveyed.

Table 6: Pattern of drugs use

Sl. No.	Category	Drugs	No. of drugs	Percentage
1	Analgesics	Paracetamol	86	34.4%
		Diclofenac	75	30%
		Tramadol	79	31.6%
		PCM + Tramadol	163	65.2%
		Aceclofenac + PCM	33	13.2%
		PCM + Diclofenac + serratiopeptidase	11	4.4%
		2	Gastroprotectives	Ranitidine
Pantoprazole	193			77.2%
Esomeprazole	33			13.2%
Rabeprazole	10			4%
Omeprazole	24			9.6%
3	Others			Antiemetic's
		Multi-Vitamin	133	53.2%
		Anti metabolites	17	6.8%
		Anti Coagulants	20	8%
4	Antibiotics	Ceftriaxone	74	29.6%
		Cefuroxime	29	11.6%
		Cefixime	15	6%
		Amoxicillin	5	2%
		Amoxicillin + Clavulanic acid	17	6.8%
		Piperacillin + Tazobactam	67	26.8%
		Sulbactam	12	4.8%
		Ofloxacin	7	2.8%
		Linezolid	13	5.2%
		Metronidazole	15	6%
		Amikacin	28	11.2%
		Clindamycin	2	0.8%

Table 7: Utilization pattern of analgesics in orthopedic inpatients & DDD / 100 bed days at tertiary care hospital

Classification of Analgesics	No. of Analgesics (447)	ATC Code	DDD/100 Bed days = 4.77
Paracetamol	86 (19.54%)	N02BE01	22.023
Diclofenac	75 (17.04%)	M01AB05	2.575
Combination :	163(37.04%)	N02AJ13	10.314
PCM +Tramadol	33 (7.5%)	M01AX	3.004
PCM + Aceclofenac	11 (2.46%)	M01AB	0.24
PCM + Diclofenac			
Centrally Acting Opioid Analgesic :	79 (17.67%)	N02X02	17.09
Tramadol			

Table 8: Factors affecting analgesics prescription

	Category	N	No. of Analgesics				P Value
			1 (97) Analgesic	2 (80) Analgesic	3 (64) Analgesic	4 (9) Anal- gesic	
Gender	Male	168	65	54	43	6	0.2026
	Female	82	32	26	21	3	
Age	10-20	15	6	5	4	0	0.0001
	21-30	39	15	12	10	2	
	31-40	45	17	14	12	2	
	51-60	40	16	13	10	1	
	61-70	40	15	13	10	2	
	71-80	33	13	11	8	1	
Duration	< 5 days	92	36	29	24	< 5 days	0.0363
	Five days	114	44	37	29	Five days	
	> 5days	44	17	14	11	> 5days	

Table 9: Factors affecting total no. of category wise drugs

Factors	category	Number (N=250)	Total no. of category wise drugs				P-Value
			Analgesics	GP	Antibiotics	MVT	
Gender	Male	168	300	214	191	89	0.0689
	Female	82	147	104	93	44	
Age	10-20	15	27	21	17	8	0.0001
	21-30	39	70	50	44	21	
	31-40	45	80	57	51	24	
	41-50	38	68	48	43	20	
	51-60	40	71	51	45	19	
	61-70	40	72	49	47	24	
Duration	< 5days	92	164	177	105	49	0.0014
	Five days	114	203	145	129	61	
	>5 days	44	80	56	50	23	

Total number of drugs prescribed = 105

Total number of encounters that are surveyed = 250

Average no. of drugs per encounter = 0.45

2. Drugs that are prescribed in generic name in =
(Total no of drugs prescribed in generic name / total
number of drugs prescribed) * 100.

Number of drugs prescribed in generic name = 14

Total no of drugs prescribed = 105

Percentage of drugs prescribed by generic name =
13.3%

3. Percentage of encounters with an antibiotic was
prescribed = (number of patient encounters during
which an antibiotic was prescribed / total number
of encounters surveyed) * 100.

Number of patient encounters during which an

antibiotic was prescribed = 250

Total number of encounters surveyed = 250

Percentage of encounters with an antibiotic pre-
scribed = 100%

4. Percentage of encounters with an injection pre-
scribed = (number of patient encounters during
which an injection / total number of encounters sur-
veyed) * 100.

Number of patient encounters during which an
injection was prescribed = 236

Total number of encounters surveyed = 250

Percentage of encounters within injection pre-
scribed = 94.4%

5. Percentage of drugs prescribed from essential
drugs list = (number of drugs prescribed from essen-

tial drugs list / total number of prescribed drugs) * 100.

Number of drugs prescribed from essential drugs list = 414

Total number of prescribed drugs = 447

Percentage of drugs prescribed from essential drugs list = 92.6%

DISCUSSION

This particular study gives data on the prescribing pattern of drugs in the orthopedic inpatient department at tertiary care hospital in Guntur region. In a total of 250 patients were enrolled based on inclusion & exclusion criteria. Out of 250 patients included in the study, 168(67.2%) were male, and 82(34%) were female (as shown in Fig 1). A similar study was conducted by Dwijen Kumar Choudhury et al., which observed that among 200 patients, 123(61.5%) were male, and 77(38.5%) were female (Figure 1).

The present study includes 250 orthopaedic inpatients of which majority were in the age group of 31-40 with 45 members (18%), followed by the age groups 51-60 & 61-70 of which 40 members with 16%, followed by the age group of 21-30 with 39(15.6%), followed by 41-50 with 38(15.2%) [as shown in Figure 2]. A similar study was conducted by Taruna Sharma et al., which observed that among 300 patients, the majority were in the age group of 31-49 with 115(38.3%), followed by 18-30 with 95(32%), followed by 50-69 with 67 (22%), followed by 69-70 with 23(7.6%).

Patients with different ailments approached orthopaedic department were seen, out of 250 patients most common indication for admission was fracture with 113(45.2%), followed by road accidents with 61(24.4%), followed by Arthritis with 56(22.4%), followed by THR with 9(3.6%), followed by an implant with 6(2.4%) & followed by Spondylitis with 5(2%) [as shown in Figure 3. Which is similar to the study conducted by Amardeep G et al., which observed among 1,777 patients most common indication was a fracture of bones 65.38 %, followed by sciatica (10.9%), Followed by rheumatoid Arthritis 1.9%.

The co-morbidity conditions were seen. Out of 250 patients, common co-morbidity condition was HTN with 65(21.6%), followed by DM with 41(16.4%), followed by thyroid with 14(5.6%) [as shown in Figure 4]. A similar study was conducted by Wadagballar et al., which observed among 224 patients, the majority are with HTN about 20 (10%), followed by DM with 10(5%).

Different categories of drugs in prescriptions were analyzed among 250 patients; the most commonly used drug class was NSAID's with 447 (26.76%), followed by Gastro-protectives with 318 (19.04%), followed by Antibiotics with 284 (17.05%), followed by 133 (7.96%), with multivitamins [as shown in Figure 5]. A similar study was conducted by Shaik-IqbalDaud et al., which observed among 800 prescriptions, NSAID's were 79(34%), followed by GP 58(28%), followed by MVT with 39(17%).

Most commonly used group was non-steroidal, Anti-inflammatory drugs (NSAID's), among 447 Analgesics, Paracetamol is most frequently used medication about 86(34.4%), followed by Tramadol with 79(31.6%), Ultracet (Tramadol+Paracetamol) was most commonly prescribed drug in combination about 163 (65.2%) [as shown in Figure 6]. A similar study was conducted by T.C.Mohammed et.al, among 330 patients, the most commonly prescribed drugs was Paracetamol found 22.3% (Figure 6).

In our study, a total of 318Gastro-protectives was prescribed. Among them, 193(77.2%) was Pantoprazole which was the most commonly prescribed drug, followed by Ranitidine 58(23.2%), followed by Omeprazole 33(13.3%).

The most commonly prescribed antibiotic among 284 drugs was ceftriaxone about 74 drugs with (29.6%) were most commonly prescribed drug, followed by Piperacillin+Tazobactam about 67 drugs with (26.8%), followed by cefuroxime 29(11.6%), followed by Amikacin 28(11%), Dr Chanchal Kumar Dalai et al. conducted a similar study., among 200 patients ceftriaxone was most commonly prescribed antibiotic of about 14(7.5%), followed by 13(6.5%) with metronidazole.

Among 250 prescriptions, no. of drugs/prescriptions was analyzed. Mostly four drugs with 60(24%), was prescribed per prescription, followed by five drugs (23.2%), followed by 3drugs & 6 drugs with 42 (16.8%). A similar study conducted Dr.Chanchal Kumar Dalai et al., which among 200 patients, 3drugs were 59(29.5%) followed by four drugs with 49(24.5%).

To measurement, the pattern of consumption of analgesics calculation of DDD/100 Bed-days for drugs utilization is used as a tool. In this study, the total drug utilization of analgesics at orthopaedic inpatients department during the study in terms of DDD/100 Bed-days was 55.22 [as shown in Tables 6, 7, 8 and 9].

WHO drug prescribing indicators were observed in 250 orthopaedic inpatient department, in which

The average no. of drugs per prescription = 0.45

Table 10: WHO core drug prescribing indicators

S. No.	Indicator	Value
1	The average number of drugs per prescription	0.45
2	Percentage of drugs prescribed by generic name	13.3%
3	Percentage of encounters with antibiotics prescribed	100%
4	Percentage of encounters with injection prescribed	94.4%
5	Percentage of drugs prescribed from essential drug list	92.6%

Percentage of drugs prescribed by generic name = 13.3%

Percentage of encounters with antibiotics prescribed = 100%

Percentage of encounters with injections prescribed = 94.4%

Percentage of drugs prescribed from essential drug list = 92.6%

A similar study conducted by Abhilash et al., which observed that among 379 patients, WHO indicators were calculated in the study & the results obtained are

Average no. of drugs/prescription = 5.79

Percentage of drugs prescribed by generic name = 7.7%

Percentage of encounters with antibiotics prescribed = 60.4%

Percentage of encounters with injections prescribed = 76.3%

Percentage of drugs prescribed from NLEM = 44%. [as shown in Table 10]

CONCLUSION

A Descriptive observational study on prescribing pattern of drugs in the orthopedic inpatient department at tertiary care hospital was conducted.

Among all the drugs, most commonly prescribed drugs are Analgesics. The prescribed drugs are divided into two categories, combination and non-combination. The most commonly prescribed combination analgesics are Ultracet (Paracetamol + Tramadol). The non-combination drug is Paracetamol.

The most common conditions were fractures due to a road accident. The most commonly affected age group was 31-40 years.

All the drugs were prescribed according to WHO core indicators and the percentage of drugs prescribed by generic name were low. All the drugs are included in NLEM and WHO list except Aceclofenac.

The drug utilization was done for Analgesics; the value of DDD/100 bed days was found to be 55.22.

Pharmacists play a vital role in educating the patients regarding the irrational use of analgesics and to avoid excessive use of OTC analgesics which helps in better patient health. Monitoring the dose of NSAID's is required to provide better patient care because usage of NSAID's leads to GI toxicity, renal dysfunction and liver abnormalities. So before administering the NSAID's hepatorenal profiles have to be screened to avoid non-compliance.

CONFLICT OF INTEREST

The authors declare that they have no conflict of interest for this study.

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