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STUDY OF PRESCRIBING PATTERN OF ANALGESICS AMONG SURGICAL INTERVENTION IN-PATIENTS OF A TERTIARY CARE HOSPITAL, IMPHAL

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ABSTRACT

Introduction: Pain therapy during the management of patients particularly in the surgery & its allied branches is a crucial task for the analgesic prescribers and also depend on their experience. **Objective:** The aim of this study is to evaluate the prescribing pattern of analgesics and to identify the commonly used analgesic. **Method:** Data was collected from 525 case sheets of surgical in-patients for a period of 1 year. Collected data included age, sex, diagnosis, name of drugs, route of administration, duration of hospital stay and cost of treatment. Descriptive statistics was used for analysis of data. **Result:** The average number of analgesics was 1.74. The maximum number of patients was in the age group of 31-40 years. Paracetamol was the most commonly prescribed analgesic 412(45%).168 patients received monotherapy. 74.42% patients received intravenous analgesics. 83.28% analgesics were from the NLEM out of which 23.39% analgesics were generic drugs. The average cost of treatment per patient per day using branded drugs was Rs.442 and generic drugs was Rs.16.31. The most common co-prescribed drugs were PPI (50.6%) for prevention of GIT problems and antibiotics (19.7%) for prevention of infections. **Discussion:** Pain therapy is individualized. Paracetamol is the most common analgesic which is administered parenterally during acute phase and orally when the pain is tolerable. The route and frequency of 412 units Paracetamol was 95% i/v and 15% orally respectively. The prescribers desired to prescribe the branded analgesics (76.61%) more than the generic analgesics (23.39%). 83.28% of the analgesics prescribed also belonged to NLEM and the expenditure was also low for the treatment with generic analgesics (Rs.16.31). These were co-prescribed with PPI (50.6%) and antibiotics (19.7%). **Conclusion:** A wide and extensive awareness program for the rational use of medicines through CME is needed so as to improve the prescription pattern and also to have a cost-effective pain therapy by utilizing the generic drugs from the NLEM.

KEYWORDS: Prescription, Analgesic, Pain, Paracetamol, Generic, NLEM.

INTRODUCTION

Periodic examination of the case sheets of the in-patients and prescription sheets of the outpatients is needed as to know the drug utilization among the patients. This examination will help in the improvement of the patient care such as therapeutic benefits and containing the ADE. The evaluation of Drug utilization is important for clinical, economic and education purposes.[1,2] This study may modify the prescription behaviour of the medical practitioners so as to make medical care rational and cost-effective. Many agencies declare WHO has encouraged such study by providing the standard drug use indications and data collection methods.[3] Earlier research conducted with similar objectives revealed that the most common prescribed drug for pain and pain related ailments is NSAIDs. The use of this drug is associated with hospitalisation due to GIT upset, bleeding and perforation.[4,5] A prescription-based survey is considered one of the most effective methods to assess and evaluate attitude of the prescribers.[6] Drug utilisation studies conducted in the in-patient settings are the effective tools that help in evaluating the drug prescription trends, efficiency and cost-effectiveness of hospital formulations. Hence the present study was conducted with an objective to obtain information on prescribing pattern among the surgical interventional in-patients so as to promote rational use of medicines.

AIMS AND OBJECTIVES

The aim of the study is to examine the utilization pattern of analgesics by the clinicians during the management of pain and also to ascertain the level of expenditure for the patient.

METHOD

Study design and setting

This is a retrospective cross-sectional study among the surgical intervention in-patients for a period of 1 year. The design and setting is established by referring the protocols of the previous investigators.[1,6,7]

Collection of data

The case sheets of surgical in-patients were collected for 12 months i.e., from August 2021 to August 2022 after obtaining permission from the Medical Superintendent and Medical Records Office of Shija Hospitals and Research Institute Pvt. Ltd. (SHRI).

The data included demographic statistics (age, sex) and clinical data (diagnosis, comorbidities, name of analgesics and co-prescribed drugs, route of administration, duration of treatment, adverse reactions and events and period of hospital stay) which was recorded in pre-designed case record form.

Inclusion criteria

All case sheets of in-patients receiving analgesics will be included in the study.

Exclusion criteria

All case sheets of cases of Left against medical advice (LAMA), incomplete prescriptions and prescriptions without analgesics.

Data analysis

Descriptive statistics was used for analysis of the data.

Ethical considerations

The IEC approval Ref: IEC/SHRI/APL/22 on 22/06/2022. of the present study is obtained as the study is a part of Prescription Audit under NABH.

RESULTS

The number of case sheets which was collected from the departments of Surgery, Orthopaedics, Obst and Gynae and ENT for the period of 1 year was 556. Out of these 556 case sheets, 31 case sheets were rejected due to the reasons mentioned above.

While examining the Demographic data of the in-patients, most analgesics 117(22.3%) was administered in the age group of 31-40 years, Male 218 (41.5%) and females 307 (58.6%). The common diagnosis was Acute Cholecystitis (56.5%), Fractures (15.6%), Caesarean section in Obst and Gynae (13.7%) and the average duration of Hospital stay was 3.8 days. (Table-1)

Table 1: Demographic data.

Age (in years)	***Number of patients***	***Percentages***
0-10	41	7.8%
11-20	37	7%
21-30	99	18.9%
31-40	117	22.3%
41-50	89	17%
51-60	71	13.5%
>60	71	13.5%
Gender		
Male	218	41.5%
Female	307	58.5%
Departments		
Surgery	297	56.6%
Orthopaedics	82	15.6%
Obstetrics	72	13.7%
Gynaecology	28	5.3%
ENT	14	2.7%
Others	32	6.1%
Duration of hospital stay	525	3.8 days

Analgesics like paracetamol, tramadol, diclofenac which were prescribed by the clinicians mainly belong to NSAIDs. The analgesics were prescribed single or combination, oral or parenteral. The most common analgesic which was prescribed by the clinicians was Paracetamol 412(45%). Paracetamol was administered intravenously 391(94.9%) given single 168(32%) and as combination with Aceclofenac 153 (30.1%). During acute phase, paracetamol was given by oral route 174(19%) after recovering from acute pain (Table-2).

Table 2: Analgesic use.

Type of analgesic therapy	*Number of patients*	*Percentages*
Single drug	168	32%
Double drug	158	30.1%
Triple drug	148	28.2%
Quadruple drug	51	9.7

Analgesic type	*Total use in patients (915)*	*Percentages*
Paracetamol	412 (i.v-391, oral-21)	45%
Tramadol	223 (i.v-221, i.m-2)	24.4%
Diclofenac	127 (i.v-66, i.m-58)	13.9%
Aceclofenac+paracetamol	153 (oral-153)	16.7%
Analgesic route		
I/V	681	74.4%
I/M	60	6.6%
Oral	174	19%

The clinicians prescribed 701 branded analgesics (76.61%) like Kabimol, Pacimol, Tramazac, Zerodol-P and 214 generic analgesics (23.39%) like Paracetamol, Diclofenac, Diclofenac. The analgesics which were prescribed by the clinicians were mainly from the NLEM i.e., 762 (83.28%).

Table 3: Generic and Branded analgesics.

Analgesics	*Total use*	*Percentages*
Generic • Paracetamol • Tramadol • Diclofenac	214	23.39%
Branded • Kabimol • Neomol • Pacimol • Magmadol • Paraglan • Parasafe • Vivian • Diclonac • Dynapar-aq • Tamazac • Zerodol-p • Signoflam • Trick-sp	701	76.61

The average expenditure which was incurred by a patient per day during the hospital for branded drugs was Rs.442 and generic drug was Rs. 16.31[9] respectively. (Table-4)

The most common co-prescribed drugs were PPI (50.6.2%) and antibiotics (19.7%).

Table 4: Co-prescribed drugs.

Drug	*Total use*	*Percentages*
PPI	463	50.6%
Antibiotics	180	19.7%
Multivitamins	100	11.7%
Others	46	5.3%

DISCUSSION

Pain therapy differs from one patient to another and also depends on the surroundings and environment. Therefore, as there is no guideline, the pain therapy is individualized. The therapy depends on type of surgical interventions, clinical experience with the analgesics. In this study the most common analgesic which was prescribed by the clinician was paracetamol (iv 45%).

This finding was almost conformed to the previous findings.[10,11,12,13] The use of combination of Opioids and NSAIDs was not seen in this study and the same was also observed in the study mentioned above[10] Seriously ill patients were directly admitted through Emergency departments and the patients were then prepared for surgical intervention in the OT. As such the use of the analgesics were post-operative cases. The prescribers regarded Paracetamol scores best over other analgesic in respect of safety and has mild to moderate pain relief in combination with other analgesics.

In this study the percentage of branded analgesic prescribed by the clinicians mainly Pacimol, Zerodol-P, etc was 76.16% and that of generic analgesics namely Paracetamol, Tramadol, etc was 23.39%. These findings were somewhat similar to the findings where 73.54% of branded analgesic and 57.19% of generic analgesic was used and that too with NLEM (62.67%). This showed that majority of the clinicians opted to branded analgesics.[1] Similarly, only a few clinicians prescribed generic analgesic namely diclofonac (48%)[12] diclofenac(45.39%),[14] diclofenac(44.23%)[15] from NLEM.[12,14,15] On the other hand some clinician prescribed branded analgesics for paracetamol only.[7,15] Subsequently most of the investigators found that the clinicians prescribed generic analgesic (98.5%),[16] branded analgesic (88.1%).[13,15] The present study found that the clinicians prescribed the analgesic from the NLEM (83.28%) which showed that the clinicians of this tertiary hospital seem to incline towards NLEM. Observing the findings all investigators wished to co-ordinate the prescribers and clinicians with the regular educational intervention on rational use of medicine such as CME to improve prescribing practice among the clinicians at different level.[7,11,13]

The frequency of administration of the analgesics in this study were oral (19% g TDS), 7% I/M(7% BD), I/V(74% TDS) whereas the frequency of administration oral(57% g TDS) with IV (70% BD)[13] oral(65.80%), parenteral(33.8%)[15] and oral(72%), parenteral(17.1%)[16] were also reported. Our study showed that initially the analgesics were started parenterally for controlling the acute pain and then the route was changed orally when the pain was tolerable. This observation supported the findings of the previous investigators.[13,15,16]

The duration of hospital stay was 3.8 days when compared with previous findings of 10 days,[7] 10 days[12] and 7-11days.[15] This indicated that the wisdom of the clinicians for the selection of analgesic along with the route was during their clinical practice.

In this study, the number of drugs per prescription was 1.3 whereas the number of drugs per prescription of the previous investigators were 2.33,[7] 5.79[15] and 2.19[16] respectively. This showed that the present clinicians prescribed the analgesics cautiously. The present combination drugs were of oral preparation (16.7%) whereas the findings of previous investigators[12,13,15] were 33.94-38.37%, 19% and 40.31% respectively. The clinicians preferred single analgesic drug whenever possible during the management of any type nature of pain. As there was no use of combination of opioid & opioid like derivatives, the preferred analgesic was of peripherally acting analgesic say NSAIDs and its derivatives. There was no record of any ADRs which may be the evidence of poor reporting of ADR/ ADE,

The clinicians prescribed many drugs like PPIs (50.6%) so as to prevent the GIT problems as observed by the previous investigators.[7,13,15,16] Similarly, the present clinicians also prescribed antibiotics (19.7%) so as to prevent the infections as observed by the other investigators respectively.[7,13,15]

The finding of the present study as well as the findings of the previous investigators[12,15,16] showed the expenditure for the procurement of the analgesic was usually low when the prescription was on generic drugs. Therefore, the prescription pattern will improve with generic drugs of the NLEM taking advantage of CMHT-PMJAY scheme so that the patient may get the pain therapy on low cost.[17,18] Otherwise the patients have to meet the expenditure for the branded analgesic from their OOPE (out of pocket expenditure).[1,7,14,15]

LIMITATION OF THE STUDY

As the method used is non-random sampling method, there might be chances of bias with the small population included.

CONCLUSION

The present study can conclude in many ways. But by examining the findings of the present study and also comparing with the observations of the previous investigators, there is a thoughtful suggestion for a wide and extensive awareness program for the rational use of medicines through CME so as to improve the prescription pattern and also to have a cost-effective pain therapy by utilizing the generic drugs from the NLEM.

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