

Analgesic Drug Utilization Study in Indoor Patients of Surgery in a Tertiary Care Teaching Hospital

Privy Varshney¹, Anubhav Arya²

ABSTRACT

Introduction: The main principle of the drug utilization research is to facilitate the rational use of the drugs in populations. Polypharmacy and preference for costly medicines are common not only in developing countries but also occur in developed countries. Hence; the present study was planned for analysing the analgesic drug utilization in indoor patients of surgery.

Material and methods: The present study was conducted with the aim of analysing the analgesic drug utilization in indoor patients of surgery. Data records of a total of 150 patients who were admitted to the surgical period during the study period were enrolled. Complete demographic, clinical and analgesic prescribing data of all the subjects was recorded. Analysis of analgesic prescribed during peri-operative period was also done. All the results were summarized and analysed.

Results: Total analgesics prescribed were 823. Among these, 241 analgesics were prescribed during preoperative period, 263 analgesics were prescribed during intraoperative period and 319 analgesics were prescribed during postoperative period. Average number of analgesics described per prescription was 1.33. During the preoperative stage, Inj. Diclofenac 50 mg was prescribed in 72 cases while Inj. Diclofenac 75 mg was prescribed in 41 cases. Inj. tramadol 100 mg was prescribed in 38 cases while Inj. Paracetamol 1 gm was prescribed in 22 cases. During the intraoperative stage, Inj. Diclofenac 50 mg was prescribed in 69 cases while Inj. Diclofenac 75 mg was prescribed in 70 cases. Inj. tramadol 100 mg was prescribed in 10 cases while Inj. Paracetamol 1 gm was prescribed in 85 cases. Tablet Diclofenac 50 mg was given in 3 cases only. During the postoperative period, Inj. Diclofenac 50 mg, Inj. Diclofenac 75 mg, Inj. Paracetamol 1 gm and tablet Diclofenac 50 mg was given in 68 cases, 51 cases, 62 cases and 24 cases respectively.

Conclusion: It is essential to assess the incidence and severity of post-surgical pain and application of homogeneous pain assessment and therapeutic protocols which improve post-operative patient care in the hospital setting.

Keywords: Analgesics, Surgery

INTRODUCTION

Pain has been defined as, 'an unpleasant sensory and emotional experience associated with actual or potential tissue damage' by the Task Force on Taxonomy of the International Association for the Study of Pain. Optimising pain management can improve the outcome of patient care after any surgical intervention. Inadequate pain control can result in increased morbidity and length of hospital stay as well as lead to chronic pain. It can also lead to complications

like deep vein thrombosis, atelectasis and also delayed wound healing.¹⁻³

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". 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.⁴⁻⁶ Irrational prescription includes polypharmacy, use of medically ineffective and inappropriate drugs unrelated to diagnosis, expensive drugs, use of branded drugs instead of generic drugs, and excessive use and misuse of antimicrobials. Polypharmacy and preference for costly medicines are common not only in developing countries but also occur in developed countries.⁵⁻⁷ Hence; the present study was planned for analysing the analgesic drug utilization in indoor patients of surgery.

MATERIAL AND METHODS

The present study was conducted with the aim of analysing the analgesic drug utilization in indoor patients of surgery. Ethical approval was obtained from institutional ethical committee and written approval was obtained after explaining in details the entire research protocol. It was a prospective study. No interviewing of patients was done. Complete collection of data was done from the data record files of all the patients in relation to the analgesic therapy administered to the patients. Inclusion criteria for the present study included:

- Patients of more than 18 years of age,
- Patients undergoing major surgical procedures,
- Patient receiving in-patient care in the departments of surgery,

Data records of a total of 150 patients who were admitted

¹Assistant Professor, Department of Pharmacology, ²Assistant Professor, Department of Surgery, Rama Medical College and hospital, Hapur, UP, India

Corresponding author: Privy Varshney, Assistant Professor, Department of Pharmacology, Rama Medical College and hospital, Hapur, UP, India

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to the surgical period during the study period were enrolled. Complete demographic, clinical and analgesic prescribing data of all the subjects was recorded. Analysis of analgesic prescribed during peri-operative period was also done. All the results were recorded in Microsoft excel sheet and were analysed by SPSS software.

RESULTS

In the present study, data records of a total of 150 patients were analysed. Mean age of the patients was 53.5 years. Majority of the patients belonged to the age group of 46 to 60 years. Majority of the patients were males. Abdominal surgery was the major type of surgery found to be present in 25.33 percent of the patients. Hernia repair surgery

was found to be present in 14 percent of the patients. Total analgesics prescribed were 823. Among these, 241 analgesics were prescribed during preoperative period, 263 analgesics were prescribed during intraoperative period and 319 analgesics were prescribed during postoperative period. Average number of analgesics described per prescription was 1.33. In the present study, during the preoperative stage, Inj. Diclofenac 50 mg was prescribed in 72 cases while Inj. Diclofenac 75 mg was prescribed in 41 cases. Inj. tramadol 100 mg was prescribed in 38 cases while Inj. Paracetamol 1 gm was prescribed in 22 cases. Also, tablet Diclofenac 50 mg was given in 22 cases. During the intraoperative stage, Inj. Diclofenac 50 mg was prescribed in 69 cases while Inj. Diclofenac 75 mg was prescribed in 70 cases. Inj. tramadol 100 mg was prescribed in 10 cases while Inj. Paracetamol 1 gm was prescribed in 85 cases. Tablet Diclofenac 50 mg was given in 3 cases only. During the postoperative period, Inj. Diclofenac 50 mg, Inj. Diclofenac 75 mg, Inj. Paracetamol 1 gm and tablet Diclofenac 50 mg was given in 68 cases, 51 cases, 62 cases and 24 cases respectively.

DISCUSSION

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

Age group (years)	Number of patients	Percentage of patients
18 to 30	21	14
31 to 45	33	22
46 to 60	55	36.67
More than 60	41	27.33
Total	150	100

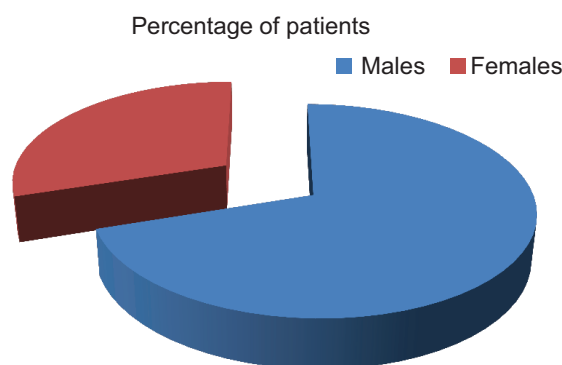
Table-1: Age-wise distribution of patients

Type of surgery	Number of patients	Percentage of patients
Abdominal surgery	38	25.33
Head and neck surgery	32	21.33
Rectal surgery	25	16.67
Hernia repair surgery	21	14
Urological surgery	18	12.67
Others	15	10

Table-2: Distribution of patients according to type of surgery

Total analgesic drugs prescribed	Frequency
Total analgesic prescribed	823
Percentage of analgesic used by generic name/ prescription	78.12%
Average number of drugs per prescription	4.11
Average number of analgesics per prescription	1.33

Table-3: Analgesic drug prescribing pattern



Graph-1: Gender-wise distribution of patients

Analgesics	Time (stage)		
	Preoperative stage (n=241)	Intraoperative stage (n=263)	Postoperative stage (n=319)
Inj. Diclofenac 50 mg	72	69	68
Inj. Diclofenac 75 mg	41	70	51
Inj. Paracetamol 1 gm	22	85	62
Inj. Pentazocaine 30 mg	6	10	18
Inj. Pentazocaine 100 mg	16	6	10
Inj. tramadol 100 mg	38	10	61
Tablet Diclofenac 50 mg	22	3	24
Tablet Diclofenac 75 mg	8	2	6
Tablet Ibuprofen 400 mg	7	2	1
Tablet Diclofenac 50 mg + Serratiopeptidase 10 mg	1	-	13
Others	8	6	5

Table-4: Time (stage) of prescribing Analgesics

at a certain moment in a certain area, and to what extent, and to compare observed patterns of the drug use with currently recommended guidelines for the treatment. Drug utilization has been defined as the marketing, distribution, prescription, and the use of drugs in a society with special emphasis on the resulting medical and social consequences. Essential medicines are those that satisfy the priority health care needs of the population. They are intended to be available at all times, in adequate amounts, in appropriate dosage forms, with assured quality, with adequate information, and at a price the individual and community can afford.⁷⁻⁹ Hence; the present study was planned for analysing the analgesic drug utilization in indoor patients of surgery.

In the present study, data records of a total of 150 patients were analysed. Mean age of the patients was 53.5 years. Majority of the patients belonged to the age group of 46 to 60 years. Majority of the patients were males. Total analgesics prescribed were 823. Among these, 241 analgesics were prescribed during preoperative period, 263 analgesics were prescribed during intraoperative period and 319 analgesics were prescribed during postoperative period. Average number of analgesics described per prescription was 1.33. In the present study, during the preoperative stage, Inj. Diclofenac 50 mg was prescribed in 72 cases while Inj. Diclofenac 75 mg was prescribed in 41 cases. Inj. tramadol 100 mg was prescribed in 38 cases while Inj. Paracetamol 1 gm was prescribed in 22 cases. Also, tablet Diclofenac 50 mg was given in 22 cases. Patel KM et al conducted descriptive study among patients admitted in surgical wards for one year. Authors have analysed collected data of 604 patients using descriptive statistics to determine utilization pattern of drugs and drug use indicators. Average number of drugs in a prescription was 8.94. Antibiotics (32.07%), analgesics (17.11%) and antacids (16.09%) were leading drug groups prescribed. Amikacin (5.81%) followed by metronidazole (5.30%) and ciprofloxacin (5.19%) were commonly prescribed antimicrobial drugs. Tramadol (5.31%) and pantoprazole (7.17%) were leading drugs prescribed from analgesics and antacids respectively. All prescriptions had at least one injectable drug. At least one antibiotic was present in 92.05% prescriptions. Majority of drugs (87.27%) were prescribed by generic names. Proportion of drugs prescribed from essential medicine list was 84.22%. Polypharmacy and injectable drug prescribing were common in practice.¹⁰

In the present study, during the intraoperative stage, Inj. Diclofenac 50 mg was prescribed in 69 cases while Inj. Diclofenac 75 mg was prescribed in 70 cases. Inj. tramadol 100 mg was prescribed in 10 cases while Inj. Paracetamol 1 gm was prescribed in 85 cases. Tablet Diclofenac 50 mg was given in 3 cases only. In a study conducted by Agrawal et al, 85.18% drugs were prescribed from the National Model List of Essential Medicines, India. However, in Choudhury et al study, it was stated that 62.67% of analgesics complied with those from national list of essential medicines whereas in Bhansali et al study, only 45.71% drugs were prescribed from the list.¹¹⁻¹³

In the present study, during the postoperative period, Inj.

Diclofenac 50 mg, Inj. Diclofenac 75 mg, Inj. Paracetamol 1 gm and tablet Diclofenac 50 mg was given in 68 cases, 51 cases, 62 cases and 24 cases respectively. Khade A et al evaluated the prescription trend in the surgery department of a tribal district hospital so as to determine the extent of rational use of medicines. It was a retrospective study in which 50 cases were selected randomly. Most of the cases were between the age group of 21 and 40 years, 18 cases (36%). Commonest cause of hospitalization was renal calculi (10 (20%)) followed by acute abdomen and abscess (6, (12%)). Total of 255 numbers of drugs were used with an average of 5.1 drugs per patient. Most preferred route was intravenous route (174 drugs, 68.2%). Antimicrobial was the most common (97 (38.0%)) group of drugs followed by analgesic/antipyretics (50 (19.6%)). Urgent steps like specific guidelines, training, and monitoring of drugs use are needed to correct some irrational approaches.¹⁴

CONCLUSION

It is concluded that, its essential to assess the incidence and severity of post-surgical pain and application of homogeneous pain assessment and therapeutic protocols which improve post-operative patient care in the hospital setting.

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