



CODEN (USA): IAJPBB

ISSN: 2349-7750

**INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES**Available online at: <http://www.iajps.com>

Case Study

**PRESCRIBING PATTERNS OF ANALGESICS IN A TERTIARY
CARE TEACHING HOSPITAL IN RANGAREDDY DIST
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Abstract:

To evaluate the variety of analgesics prescribed after surgery along with the doses administered and routes of administration. A prospective observational study conducted for 4 months in the inpatient surgery and orthopedic departments of Malla Reddy hospital, a 373Bedded tertiary care teaching hospital. All patients who have under gone surgery were included in the study. Post-operative analgesics prescribed along with the route of administration and doses were noted in a specially designed proforma. 187 patients were included in the study who were prescribed with 386 analgesics. Post-operative analgesics are prescribed in all the patients who undergone surgery. For 83.42% (156) patients injectable analgesics were prescribed immediately after surgery and in 22.45% (42) patients oral analgesics were prescribed immediately after surgery. Diclofenac was the most commonly prescribed among the injectable analgesics (36.59%). Tramadol+ Acetaminophen was most commonly use oral analgesic (39.81%). The use of analgesics depends upon the severity of pain. In case of mild pain, single analgesics are commonly used where as for moderate and severe pain two or more analgesics are used. The study summarizes that, cost of therapy can be reduced by changing of prescription drugs from brand name to Generic name; also this plays an important role in Rational use of Drug (Proper dispensing of drugs, Cost, safety and efficacy). By using pain intensity scales, pain assessment should be practiced so that right choice of analgesics can be prescribed according to the intensity of pain.

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Please cite this article in press as Mohammed Imranuddin *et al*, **Prescribing Patterns of Analgesics in a Tertiary Care Teaching Hospital in Rangareddy Dist Telangana**, *Indo Am. J. Pharm. Sci.* 2016; 3(8).

INTRODUCTION:

Effective postoperative pain control is an essential component of the care of the patient who has undergone surgery. Inadequate pain control may result in increased morbidity or mortality [1,2]. Evidence suggests that surgery suppresses the immune system and that this suppression is proportionate to the invasiveness of the surgery [3,4]. Good analgesia can reduce this deleterious effect. The advantages of effective postoperative pain management include patient comfort and therefore satisfaction, earlier mobilization, faster recovery with less likelihood of the development of neuropathic pain, a reduced risk of deep vein thrombosis, fewer pulmonary and cardiac complications, and reduced cost of care. The failure to provide good postoperative analgesia is multifactorial. Insufficient education, fear of complications associated with analgesic drugs, poor pain assessment, and inadequate staffing are among its causes. Analgesics are defined as the drugs that relieves pain without blocking nerve impulse conduction or markedly altering sensory function [5]. Based on the type of relieving action, they are classified into two. Opioid inhibits pain impulses by acting on brain receptors. They can be used for short or long-term relief of pain, mainly by prescription, but bears a risk of drug addiction. Non opioids, used for short term relief and modest pain, are accessible without prescription. They act by inhibiting synthesis of prostaglandins which are the molecules involved in the peripheral perception of pain. It is well known that patient response to different analgesics can be greatly uneven. A particular analgesic dose that produces successful pain relief in one patient may generate bearable adverse effects and insufficient pain control in another person [6]. Irrational prescription of drugs is a common incidence in medical practice. The study of prescribing pattern is a significant constituent of medical audit which helps in monitoring, evaluating and building practices required modifications in the prescribing practices to attain a rational and cost effective medical care. Auditing of prescriptions forms is an important part of drug utilization studies. Drug utilization evaluation is a onetime study to evaluate appropriateness of drug therapy. The intention is to recognize whether current patterns of prescribing, dispensing and use of drug therapy are

reliable with criteria and standards. These criteria and standards demonstrate the drug therapy is effective, safe, appropriate, and cost effective and support optimal patient outcome [7]. The ultimate goal of this drug utilization research is to evaluate the prescribing pattern of analgesics in the postoperative pain management in a tertiary care hospital. In spite of considerable improvements in the availability and control of drugs in hospitals, rational drug use is still a worldwide problem [8].

MATERIALS AND METHODS:

The study was a prospective observational study and conducted at a tertiary care hospital at suraram, Telangana, India. The study was carried over fourth months. Designing a Performa for data collection. Collecting the case of the patient treated with analgesics for post operative pain management. Analyzing the prescriptions and categorizing it into varieties based on analgesics prescribed, route of administration and combinations prescribed.

STUDY SITE: The study was conducted in the Department of General Surgery And orthopedic department at Malla Reddy Hospital which is a 300 bedded teaching hospital located at Suraram, Ranga Reddy District.

RESULTS AND DISCUSSION:

On the basis of inclusion and exclusion criteria, 178 patients were selected from the surgical and orthopedic unit over a period of 4 months for the present study. Among 187 patients 89 were female and 98 were male. Most of the patients were under the age group of 35- 50 years. During the study it was observed that all patients undergoing surgery were prescribed with analgesics for post operative pain management. Out of 187 prescriptions 386 analgesics were prescribed. The duration of therapy with analgesics was ranging from one day to 18 days. For 83.42% (156) patients injectable analgesics were prescribed immediately after surgery and in 22.45% (42) patients oral analgesics were prescribed immediately after surgery. In 73.26% (137) of the patients injectable analgesics are followed by oral analgesics. In 27.27% (51) patient's more than one analgesic were given on the same day.

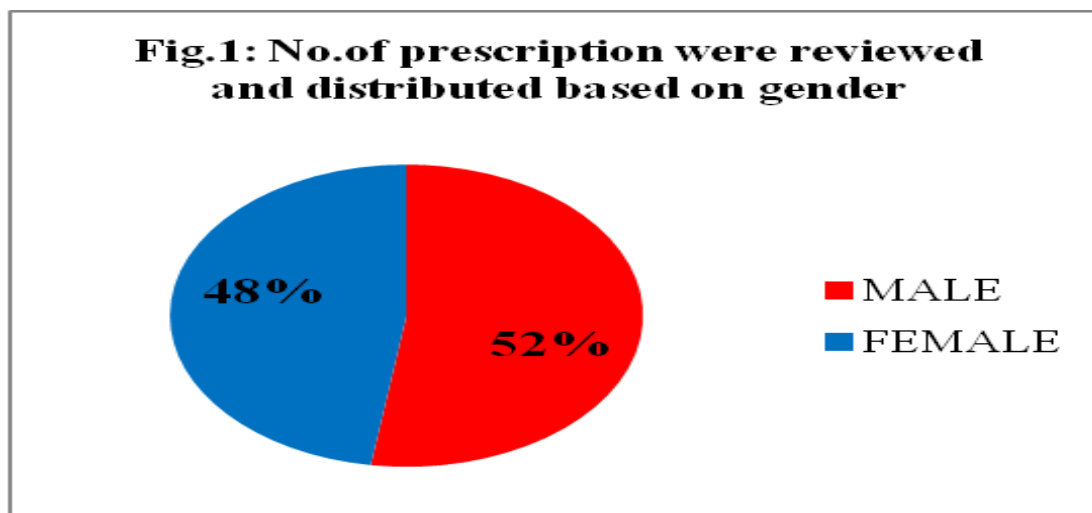


Fig 1: No. of prescriptions were reviewed and distributed based on gender

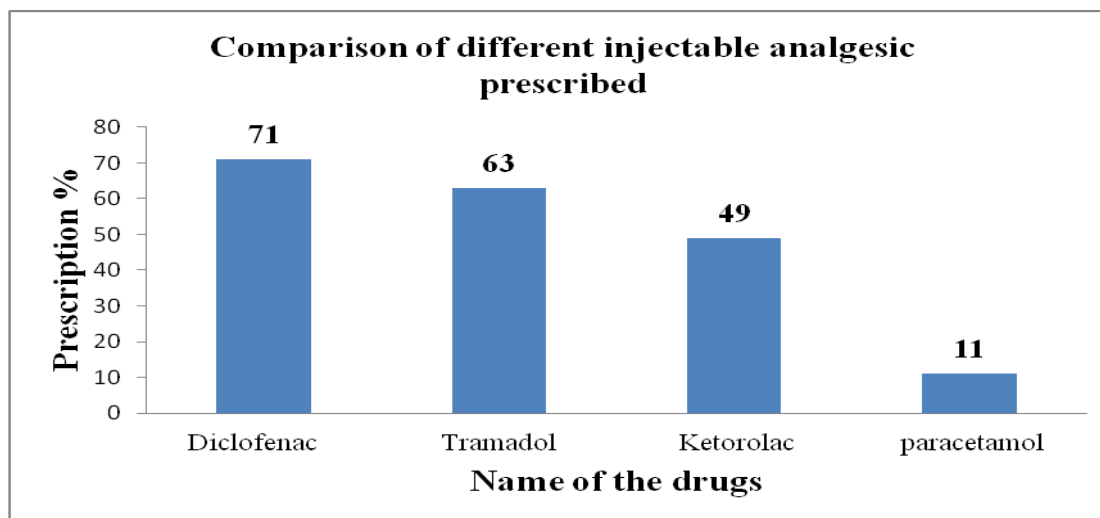


Fig 2: Comparison of different injectable analgesics prescribed.

Total 156 patients were prescribed with 194 different injectable analgesics. Most commonly prescribed drug was diclofenac (36.59%) and tramadol (32.47%) followed by ketorolac (25.25%). All injectable analgesics were prescribed immediately after surgery. Diclofenac was the most commonly prescribed

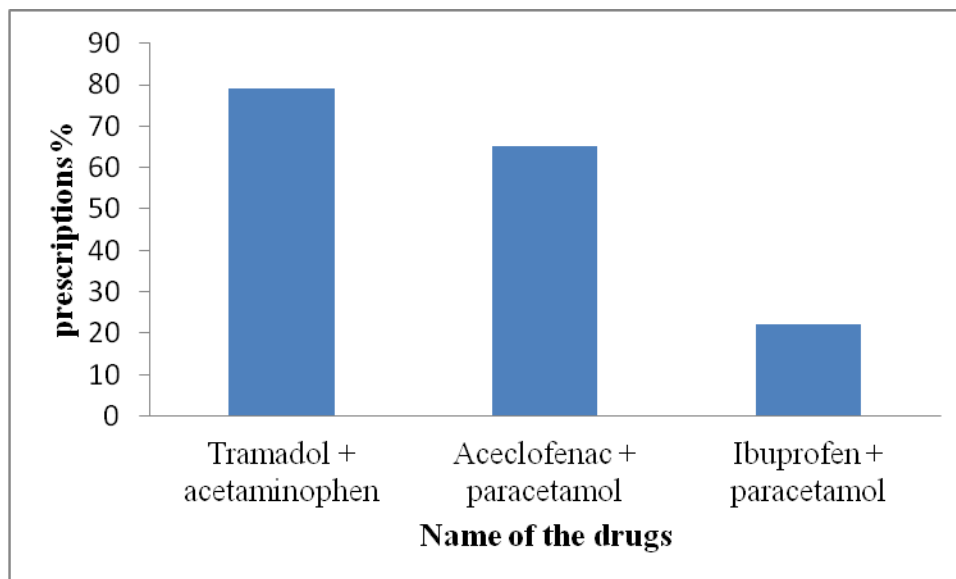
among the injectable analgesics (36.59%) which was in contrast with the study conducted by Joseph F et al. which reported that morphine sulphate is the commonly used analgesic in the post-operative pain management [9].

Table 1: Comparison of oral analgesics given.

Name of the drug	No. of prescriptions with oral analgesics (216)	Percentage (%)
Tramadol + acetaminophen	86	39.81%
Aceclofenac + paracetamol	73	33.79%
Paracetamo	28	12.96%
Ibuprofen + paracetamol	19	8.7%
diclofenac	9	4.1%

Table 2: Methods of prescribing pattern of analgesics.

Prescribing pattern	Number of analgesics (386)	Percentage (%)
Analgesics prescribed with generic name	178	46.11%
Analgesics prescribed with trade name	208	53.88%

**Fig 3: Comparison of different oral combination analgesics.**

Total of 156 patients are prescribed with 216 different oral analgesics. Combination of tramadol+ acetaminophen (39.81%) is the commonly prescribed oral analgesic followed by aceclofenac + paracetamol (33.79%) and least prescribed drug was diclofenac (4.1%).

When considering the mode of prescribing of analgesics, the percentages of analgesics prescribed in generic names in the hospital were 41.29% which was low compared to the analgesics prescribed with trade name (58.70%) shown in Table 3. The percentages of drugs prescribed in generic names were determined because generic prescription has got special importance for rational use of drug as regards to cost, safety and efficacy by permitting the identification of the products by its scientific names (Ara and Chowdhury, 2001) [10].

Total 137 patients were prescribed with 166 different oral combination analgesics. Most commonly prescribed combination was tramadol + acetaminophen (47.59%) followed by aceclofenac + paracetamol (39.15%).

In 85.77% of prescriptions additional drugs were prescribed to prevent the adverse effects of analgesics. Of them, 24.55% of prescriptions had H2 blockers and 75.44% of prescriptions had proton pump inhibitors as additional drugs to prevent adverse effects of analgesics. Proton pump inhibitors were the drugs used maximally to prevent adverse effects in the hospital. Moreover, Rahman et al [11] founded that the proton pump inhibitors were the drugs used maximally to prevent adverse effects in hospital at Dhaka reflects according our study. Lapne KL et al [12] taught that the use of NSAIDs is associated with a substantial increase in the risk of Gastro intestinal bleeding.

Table 4:-Types of Anti-ulcer drugs prescribed with analgesics.

Class of anti-ulcer prescribed	Number of prescriptions (167)	Percentage (%)
Proton pump inhibitors	126	75.44%
H2 receptor blockers	41	24.55%

CONCLUSION:

Pain is the most commonly experienced symptom among post-operative patients; it may vary from one study to another study and depends up on the activities of the selected patients. The study shows that, anti-ulcer drugs were prescribed along with analgesics to reduce the important adverse effect of NSAID'S that is gastric complications. The analgesic uses were minimal and one analgesic was used in maximum number of cases. Physicians gave more priority for non-opioid drugs because of their less adverse effects. The results show that diclofenac were the most commonly prescribed analgesic, it may be due to its lesser side effects and their effectiveness when compared to others. In order to reduce the cost of therapy, the prescription of drugs in brand name could be changed to Generic name; also this plays an important role in rational use of Drug (Proper dispensing of drugs, Cost, safety and efficacy). The use of analgesics mainly depends upon the severity of pain. In mild pain, single analgesics are commonly used where as two or more analgesics are used in moderate and severe pain. By using pain intensity scales, pain assessment should be practiced so that right choice of analgesics can be prescribed according to the intensity of pain. The pain scale is also not perfectly complete and correct one, because the data was collected only by the reply to the questions asked to the patients, the answer may be correct or not. It depends upon the patients interest, time, physical and psychological conditions. The study patients are selected from single department of hospital, so the study is completely a perfect one. Although there are scopes for improvement of rational prescribing by introducing appropriate educational interventions, these may be considered as an effort to improve quality of health care.

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