

An Observational Study to Evaluate the Prescribing Pattern of Analgesics in Post Operative Patient in a Tertiary Care Teaching Hospital

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ABSTRACT

Background: Effective pain management is negatively influenced by inadequate evaluation of postoperative pain. To increase the therapeutic benefit and reduce medication side effects, the regular assessment of medication use enables appropriate and rational adaptations to be made to present prescribing patterns.

Objective: To identify the Prescribing pattern of analgesics in postoperative patients.

Materials and Methods: A prospective Observational Study was conducted for a period of 6 months by analyzing case sheets of patients those who have undergone surgery in orthopedics and general surgery departments. The data regarding prescription of analgesics, preferred route of administration and mono/multi drug therapy were collected.

Results: Paracetamol (39.7%) was the most frequently prescribed analgesics followed by tramadol (38.2%) in general surgery and diclofenac (29.8%) was the commonly prescribed analgesic followed by paracetamol (27%) in orthopaedics through parenteral routes.

Conclusion: Postoperative pain can be managed with NSAIDs such as paracetamol, diclofenac and combination of non-opioids and weak opioids such as tramadol. The intensity of pain in post-operative period after treatment with analgesics was severe to mild as per the NRS.

Keywords: Analgesics, Post-operative pain, Prescription pattern, General surgery, Orthopedics

INTRODUCTION

Pain is defined as “An unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage (International Association for the Study of Pain, 2007).^[1] Postoperative pain is regarded as a type of acute pain brought on by surgical trauma with an inflammatory response and the start of an afferent neuronal barrage.^[2] Postoperative pain is the major consequence of surgery, which bothers patients and extends hospital stay.^[3] Postoperative pain increases the risk of post-surgical complications, drives up healthcare costs, hinders healing and the return to regular daily activities.^[4] Pain hinders physical function, lowers quality of life and sleep and lengthens hospital stays.^[5] Inadequate postoperative pain control can result in mental anguish, sadness, delirium, anxiety, sleep problems, respiratory depression, and immunological suppression.^[4] It is frequently self-limiting and can be efficiently treated with analgesic medication. Specialist pain management services, hospice care, and a multidisciplinary approach that evaluates and manages patients using a bio psychosocial approach are all possible treatment options.^[6] Analgesics are those that reduce pain without inhibiting nerve impulse transmission or significantly

changing sensory function.^[3] Effective postoperative pain management is influenced by a variety of factors, including a structured acute management team, patient education, regular staff training, the use of balanced analgesia, regular pain assessment tools, and adaptation of strategies to meet the needs of specific patient groups.^[5]

MATERIALS & METHODS

This prospective Observational Study was conducted from March 2022 to August 2022 at SSIMS&RC, a tertiary care teaching hospital, Davangere. 313 patients were enrolled from orthopedics and general surgery over the period of 6 months. The study population included patients above the age of 18 who underwent surgery and were prescribed with at least one analgesic. We excluded patients below 18 years of age, with psychiatric disorders and who refused to give informed consent. Informed consent was taken in a predesigned consent form. The data about patient was collected through case sheets and direct interviews and documented in predesigned data collection form. The pain score was assessed 3 times, that is, postoperative day 1, day 3 and on discharge using Numerical rating scale (NRS-11).

STATISTICAL ANALYSIS:

- Categorical data was represented in the form of frequency and percentage. Association between variables were assessed with Chi Square Test.
- Quantitative data was represented as Mean & Sd. Inter Group comparison of variables has been done with Unpaired t test. Intra Group comparison of variables has been done with Paired t test.
- To find out the relation between variables Pearson's Correlation was used.
- A P value of <0.05 was considered statistically significant.
- Data was analyzed with IBM SPSS Version 25 for windows.

RESULT

Distribution of patients based on different specialties

Among 313 patients enrolled in the study, 206 (66%) patients were from general surgery and 107 (34%) from orthopedics.

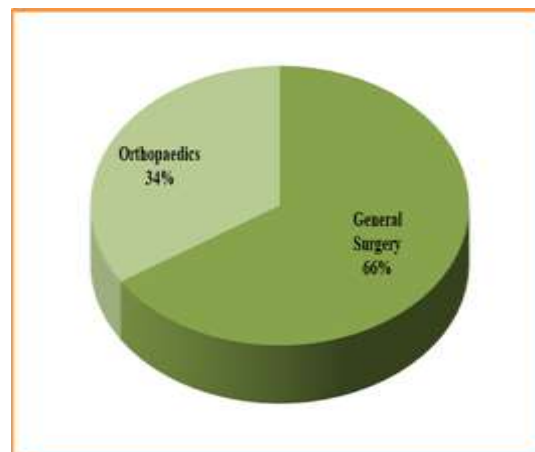


Figure 1: Distribution of patients based on Specialities

Distribution of patients based on route of administration

In our study, we found that analgesics were administered mainly by four routes. Intravenous 263 (84%) was the most preferred route of administration. 39 (12.5%) patients were administered with both IV and oral together followed by 8 (2.6%) patients with oral and 3 (0.95%) were administered with epidural route.

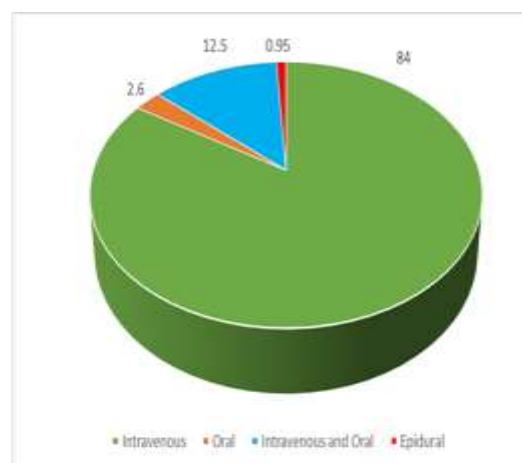


Figure 2: Distribution of patients based on route of administration

Distribution of analgesics prescribed in different specialties

Paracetamol (39.7%) was the most commonly used drug in patients from General surgery followed by Tramadol (38.2%) and Diclofenac (16.7%). In

Orthopaedics, Diclofenac (29.8%) was the most commonly used drug followed by Paracetamol (27%) and Tramadol (20.3%).

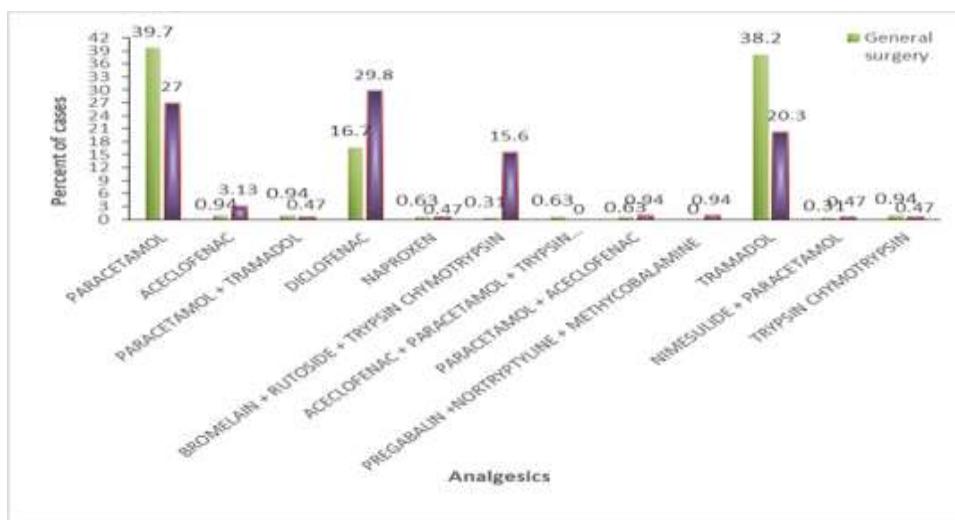


Figure 3: Distribution of analgesics prescribed in different specialties

Treatment patterns of analgesics in different specialties

The patterns of Analgesics given for the treatment were either monotherapy or multidrug therapy. Out of 206 patients of General Surgery, 110 (53.4%) were treated

with monotherapy and 96 (46.6%) received multidrug therapy. Among 107 patients in Orthopaedics department, 35 (32.7%) received monotherapy and 72 (67.3%) were given multidrug therapy.

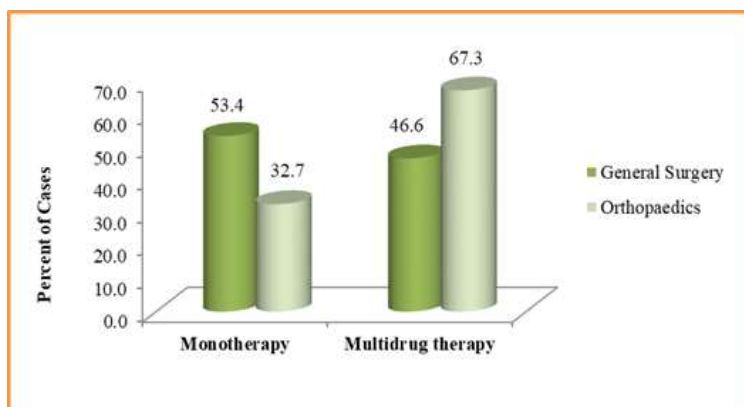


Figure 4: Treatment pattern of analgesics in different specialties

Comparison of mean pain score in different departments

In each department the pain score was assessed on the day of surgery, on 3rd day of surgery and at discharge using numerical rating scale. The overall pain score was more in orthopaedics department. The mean

pain score was reducing from 7.17 to 2.29 in general surgery and in orthopaedics reduction from 6.95 to 3.15 was observed. A P value < 0.001 was obtained for all 3 days showing a significant difference between mean pain score of both departments.

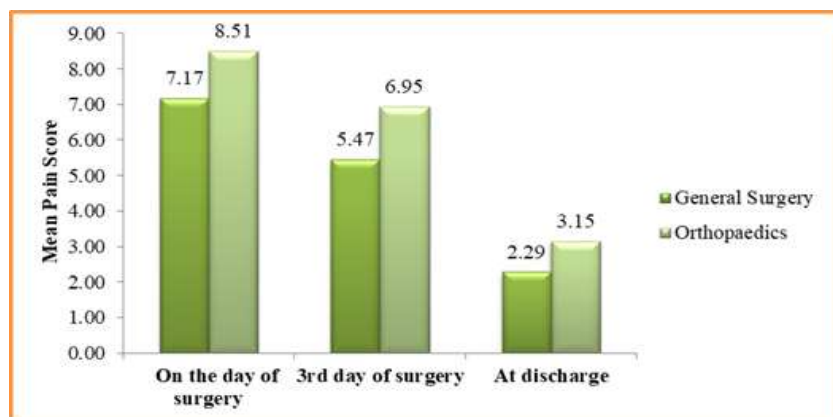


Figure 5: Comparison of mean pain score in different departments

Analgesics prescribed on discharge in different specialties

In the study population, 257 (82.1%) were prescribed analgesics and 56 (17.9%) were not given any analgesics on discharge.

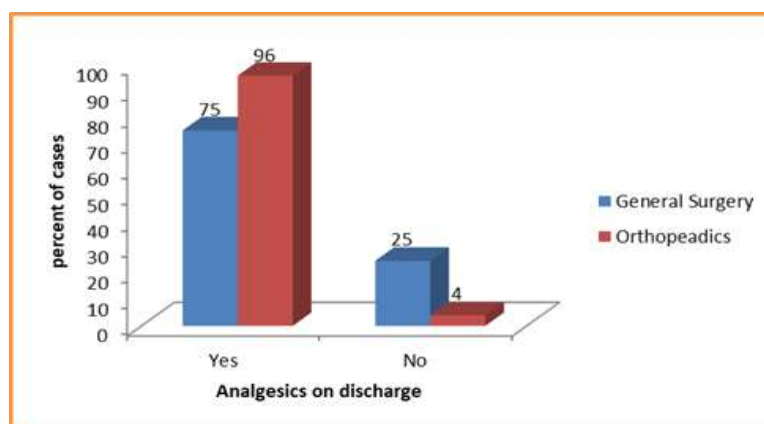


Figure 6: Analgesics prescribed on discharge in different specialties

Treatment pattern of analgesics on discharge

In General Surgery, 139 (67.5%) patients were recommended monotherapy and 15 (7.3%) were sent with Dual therapy whereas

52 (25.2%) had no analgesics on discharge. In Orthopaedics, 55 (51.4%) were given Dual therapy, 48 (44.9%) were prescribed with monotherapy and 4 (3.7%) had no analgesics on discharge.

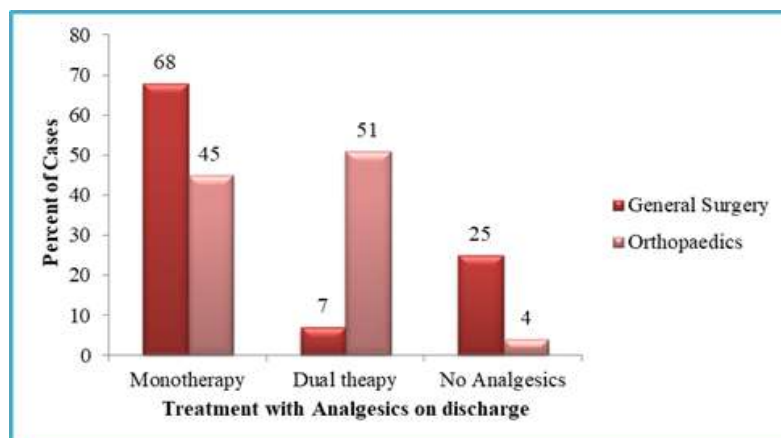


Figure 7: Treatment pattern of analgesics on discharge

Analgesics given at discharge in postoperative patients

The combination of bromelain, rutoside and trypsin Chymotrypsin (20.5%) was the most commonly prescribed medication at discharge followed by combination of

paracetamol and tramadol (16.4%) and the third most prescribed drugs were aceclofenac (15.2%) and combination of aceclofenac, paracetamol and serratiopeptidase (15.2%).

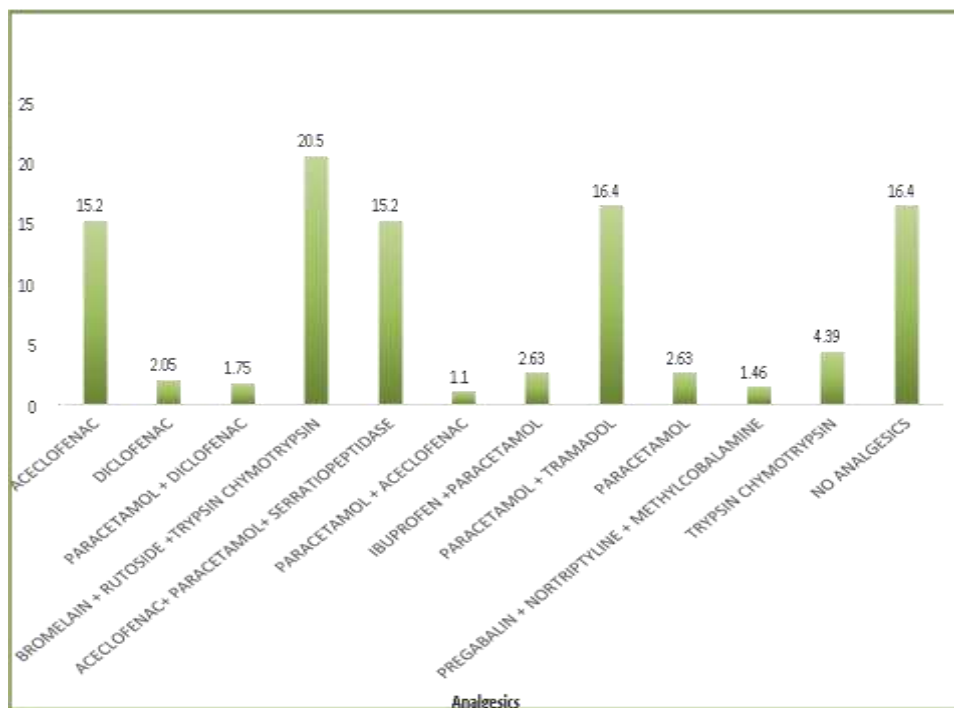


Figure 8: Analgesics given at discharge in postoperative patients

Percentage improvement of the pain at different time intervals

The severity of pain on the day of surgery, on 3rd day and on the day of discharge was compared to assess the percentage improvement. For most of the patients the

pain was severe (72.5%) on the day of surgery, while on the third day most of them had moderate pain (39%) and on the day of discharge the pain was mild (61%). This indicates that analgesic treatment used was effective for managing pain.

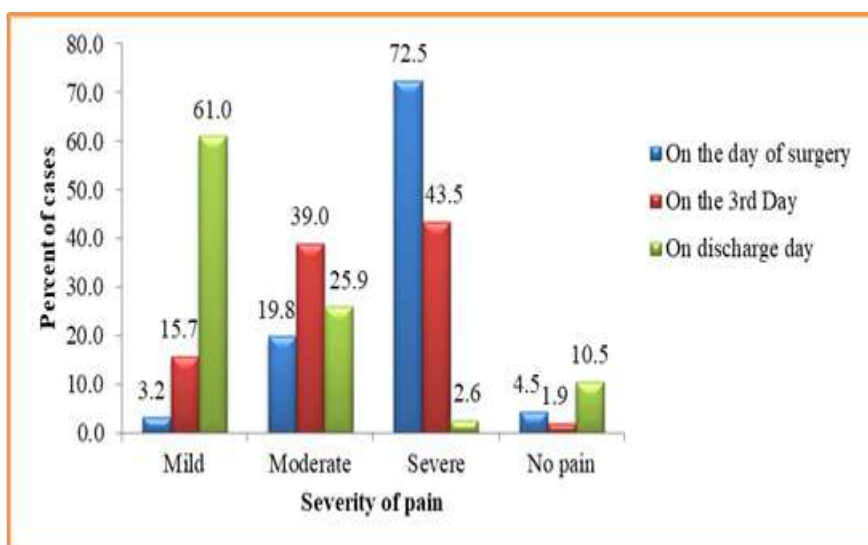


Figure 9: Percentage improvement of the pain at different time intervals

DISCUSSION

The study includes 313 samples, out of which 206 (66%) patients were from general surgery and 107 (34%) from orthopaedics. Paracetamol (39.7%) was the most frequently prescribed analgesics followed by tramadol (38.2%) in general surgery and diclofenac (29.8%) was the commonly prescribed analgesic followed by paracetamol (27%) in orthopaedics. While in-patients 168 (53.7%) received multidrug therapy and 145 (46.3%) were given monotherapy. The findings of this study coincide with previous study conducted by Joshi S et al and slightly resembles with the study by Kumarasingam T et al suggesting that, tramadol and diclofenac combination was the most prescribed analgesics followed by combination of tramadol, pentazocine and diclofenac by intramuscular route.^[7-8] In our study we found that majority of patients received analgesic monotherapy at discharge where combination of bromelain, rutoside and trypsin chymotrypsin (19.8%) was most commonly prescribed analgesic.

In our study pain intensity was measured on the day of surgery, on 3rd day and at discharge using numerical rating scale (NRS). This scale was selected based on the study conducted by Sayin Y Y et al where comparison of pain scales among patients suggested that NRS was the most preferred scale by patients.^[9] According to the study by Page M G et al, NRS and VRS can be used interchangeably, but in other study conducted by Atisook R et al, VAS had increased rate of incorrect responses whereas NRS had lowest rate of incorrect responses.^[10-11] The mean pain score on the day of surgery was found to be 7.17 in general surgery and 8.15 in orthopaedics which then gradually decreased at discharge to 2.29 and 3.15 respectively resulting in the pain reduction and improvement in the physical ability with the analgesic therapy.

CONCLUSION

Postoperative pain can be managed with NSAIDs such as paracetamol, diclofenac and combination of non-opioids and weak

opioids such as tramadol. Moreover, NSAIDs do not cause severe adverse effects compared to opioids and probably less adjuvant drugs were required. Recently, due to availability of numerous drug combinations in the market, irrational prescribing can occur. Therefore a pharmacist can create awareness and educate the healthcare providers on rational prescribing. The limitation of the study was that the prescribing pattern based on the type of surgery could not be analyzed.

Declaration by Authors

Ethical Approval: Approved

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Conflict of Interest: The authors declare no conflict of interest.

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