ORIGINAL RESEARCH

Evaluation of Analgesics Utilization in Perioperative Cases at a Tertiary Care Hospital

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Received: 10February, 2022 Accepted: 21March, 2022

ABSTRACT

Background: Inadequate postoperative pain management is a significant factor in delayed patient recovery and prolonged hospital stays. Research has shown that effective analgesics can provide substantial pain relief, and their combined use can lead to reduced opioid consumption. Therefore, this study aimed to investigate the utilization patterns of analgesics in perioperative cases, with the goal of optimizing pain management strategies and improving patient outcomes.**Materials &Methods:** The present study was conducted for assessing pattern of utilization of analgesics in perioperative cases. The study involved the recruitment of patients undergoing surgical procedures from various surgical departments, regardless of the specific type of surgery performed. It encompassed all analgesic prescriptions for patients in the peri-operative phase. A total of 156 prescriptions were analyzed. Any modification in the prescribed analgesic or alteration in the method of administration was classified as a new prescription. All the results were recorded in Microsoft excel sheet and were subjected to statistical analysis using SPSS software. **Results:**An analysis of 156 prescriptions revealed varying patterns of analgesic use across different departments. In the orthopedics department, Paracetamol was the most commonly prescribed analgesic (32.36%), followed by Diclofenac (21.82%), and Paracetamol + Diclofenac (18.18%). Tramadol and Chlorzoxazone + Diclofenac + Paracetamol were prescribed in 5.45% and 18.18% of cases, respectively. In contrast, the general surgery department predominantly prescribed Paracetamol (73.68%), with Diclofenac, Tramadol, and Buprenorphine being prescribed in 21.05%, 2.63%, and 2.63% of cases, respectively. The gynaecology department prescribed Paracetamol (32.43%), Diclofenac (32.43%), and Paracetamol + Diclofenac (27.08%) being the most commonly prescribed analgesics, followed by Tramadol (8.11%).**Conclusion:** The judicious use of pharmaceuticals encompasses not only the accurate prescribing of medications but also the processes of dispensing and patient adherence. It is essential for hospitals to establish a 'drugs and therapeutic committee' to advocate for appropriate prescribing practices. Teaching hospitals bear a significant obligation to society to foster rational prescribing behaviors among their physicians, thereby influencing future cohorts of medical practitioners. Each teaching hospital should implement its own departmental or institutional prescribing guidelines.

Key words: Perioperative, Analgesics.

INTRODUCTION

The inadequate management of postoperative pain has been identified as a factor that prolongs both patient recovery and hospital discharge times. Despite the acknowledged significance of effective pain relief, a substantial proportion of patients—up to 70%—continue to report experiencing moderate to severe pain following surgery. A mechanistic perspective on pain management, informed by contemporary insights into the peripheral and central processes involved in nociceptive transmission, offers clinicians innovative strategies for effective pain control.[1, 2] Evidence indicates that these analgesics can deliver substantial pain relief, and their combined use is associated with

a decrease in opioid consumption. The rationale for incorporating non-opioid analgesic adjuvants lies in their potential to diminish opioid use and, as a result, mitigate the adverse effects associated with opioids.[3-5] An optimal postoperative analgesic strategy should ensure effective pain management, mitigate the adverse effects associated with opioids, diminish the surgical stress response, and enhance clinical outcomes, including morbidity, mortality, and length of hospital stay. The approach of multimodal analgesia was developed to meet these objectives by integrating various analgesic methods and diverse pharmacological agents to enhance postoperative results. Nevertheless, existing research presents inconsistent findings, failing to conclusively demonstrate that multimodal analgesia leads to better outcomes and a simultaneous decrease in opioid-related side effects.[6-8]Hence; the present study was conducted for assessing pattern of utilization of analgesics in perioperative cases.

MATERIALS & METHODS

The present study was conducted for assessing pattern of utilization of analgesics in perioperative cases. The study involved the recruitment of patients undergoing surgical procedures from various surgical departments, regardless of the specific type of surgery performed. It encompassed all analgesic prescriptions for patients in the peri-operative phase. Relevant information was extracted from the patients' medical records and operation theater documentation, including the name of the analgesic, method of administration, frequency, and duration of use. A total of 156 prescriptions were analyzed. Any modification in the prescribed analgesic or alteration in the method of administration was classified as a new prescription. The departments participating in the study included general surgery, orthopedics, obstetrics and gynecology, otorhinolaryngology, and ophthalmology. All the results were recorded in Microsoft excel sheet and were subjected to statistical analysis using SPSS software.

RESULTS

A total of 156 prescriptions were evaluated. Among department of orthopedics, Paracetamol, Diclofenac, Paracetamol + Diclofenac, Tramadol, Chlorzoxazone + Diclofenac + Paracetamol were prescribed in 32.36 percent, 21.82 percent, 18.18 percent, 5.45 percent, and 18.18 percent of the cases respectively. In the department of general surgery,Paracetamol, Diclofenac, Tramadol and Buprenorphine were prescribed in 73.68 percent, 21.05 percent, 2.63 percent and 2.63 percent of the cases respectively. In the department of Gynaecology,Paracetamol, Diclofenac, Paracetamol + Diclofenac and Tramadol was prescribed in 32.43 percent, 32.43 percent, 27.08 percent and 8.11 percent of the cases respectively.

Table 1: Different type of analgesic prescribing pattern in department of orthopedics

Analgesics	Number	Percentage
Paracetamol	20	36.36
Diclofenac	12	21.82
Paracetamol + Diclofenac	10	18.18
Tramadol	3	5.45
Chlorzoxazone + Diclofenac + Paracetamol	10	18.18
Total	55	100

Table 2: Different type of analgesic prescribing pattern in department of general surgery

Analgesics	Number	Percentage
Paracetamol	28	73.68
Diclofenac	8	21.05
Tramadol	1	2.63
Buprenorphine	1	2.63
Total	38	100

Table 3: Different type of analgesic prescribing pattern in department of Gynaecology

Analgesics	Number	Percentage
Paracetamol	12	32.43
Diclofenac	12	32.43
Paracetamol + Diclofenac	10	27.08
Tramadol	3	8.11
Total	37	100

Table 4: Different type of analgesic prescribing pattern in other departments

Analgesics	Number	Percentage
Paracetamol	12	48
Diclofenac	10	40

Paracetamol + Diclofenac	2	8
Tramadol	1	4
Total	25	100

DISCUSSION

The assessment and planning of patients prior to surgery are crucial for effective management of postoperative pain. A thorough preoperative evaluation should encompass a focused pain history, a targeted physical examination, and the formulation of a pain management strategy; however, existing literature lacks comprehensive evidence regarding their effectiveness. Additionally, patient preparation must involve modifications to preoperative medications to prevent withdrawal symptoms, interventions aimed at alleviating preoperative pain and anxiety, and the early initiation of treatments as part of a multimodal approach to pain management. Some studies suggest that preoperative pain levels may serve as indicators for postoperative pain intensity. Various preoperative factors, including age, levels of anxiety, and depression, may influence postoperative pain outcomes. Elevated levels of postoperative pain are often linked to diminished quality of care. While it is advisable to provide education to patients and their families before surgery, the literature presents mixed findings concerning its influence on postoperative pain, anxiety, and discharge times.[8- 10] Hence; the present study was conducted for assessing Pattern of Utilization of Analgesics in Perioperative Cases.

A total of 156 prescriptions were evaluated. Among department of orthopedics, Paracetamol, Diclofenac, Paracetamol + Diclofenac, Tramadol, Chlorzoxazone + Diclofenac + Paracetamol were prescribed in 32.36 percent, 21.82 percent, 18.18 percent, 5.45 percent, and 18.18 percent of the cases respectively. Ladha KS conducted a comprehensive study on hospital-level patterns of perioperative multimodal analgesia use, leveraging data from the Premier Research Database. The analysis, which encompassed 799,449 patients across 315 hospitals, revealed significant variability in the adoption of multimodal therapy. Notably, the mean probability of receiving multimodal therapy was 90.4%, with a wide range of 42.6% to 99.2% across hospitals. Furthermore, a secondary analysis showed that the mean probability of receiving two or more non-opioid analgesics was 54.2%, with a similarly broad range of 9.3% to 93.2% across hospitals. These findings highlight substantial variation in multimodal therapy use, unexplained by patient or hospital characteristics, and underscore opportunities for enhancing pain management practices.[10]

In the department of general surgery,Paracetamol, Diclofenac, Tramadol and Buprenorphine was prescribed in 73.68 percent, 21.05 percent, 2.63 percent and 2.63 percent of the cases respectively. In the department of Gynaecology,Paracetamol, Diclofenac, Paracetamol + Diclofenac and Tramadol was prescribed in 32.43 percent, 32.43 percent, 27.08 percent and 8.11 percent of the cases respectively. Kol E et al investigated the impact of preoperative pain management education and preemptive analgesia on postoperative pain in 70 thoracotomy patients. The study group received preoperative education and diclofenac sodium 75 mg intramuscularly every 2 hours post-surgery, while the control group received analgesics only upon pain reporting. Results showed significantly lower pain intensity and analgesic consumption in the study group ($p < 0.05$). Preoperative education and preemptive analgesia reduced analgesic use in the first 48 hours postoperatively, highlighting the benefits of proactive pain management strategies.[11]

CONCLUSION

The judicious use of pharmaceuticals encompasses not only the accurate prescribing of medications but also the processes of dispensing and patient adherence. It is essential for hospitals to establish a 'drugs and therapeutic committee' to advocate for appropriate prescribing practices. Teaching hospitals bear a significant obligation to society to foster rational prescribing behaviors among their physicians, thereby influencing future cohorts of medical practitioners. Each teaching hospital should implement its own departmental or institutional prescribing guidelines.

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