

TMSS Medical College Journal (TMCJ)

Volume 20, No. 01, January 2023

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An Official Publication of TMSS Medical College



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January 2023

An Official Publication
of
TMSS Medical College, Bogura, Bangladesh

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Vol. 20, No. 1, January 2023

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Printed by

TMSS Printing Press
Bogura, Bangladesh
e-mail: tmssprintingpress@gmail.com

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Original Article**Clinical Response of Analgesics to Patients- A Hospital Based Study**Sabbir MIG^{1*}, Mazid MA², Bhuiya MMM³, Hossain KMZ⁴, Shormin N⁵, Mahmud MRMA⁶

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Corresponding Author*Abstract**

Introduction: Pain is the crucial reason patients seek medical assistance. Pain has sensory and emotional constituents and is often classified as acute or chronic. Doctors should assess the cause, severity, and nature of the pain and its effects on function focusing on daily events, mood, cognition and sleep. Analgesics are a class of medications designed specially to relieve pain without causing a loss of consciousness and can constrain the sensation of pain by preventing transmission of non-nociceptive impulses along primary afferents (local anesthetics) or by altering the perception of pain (opioids). **Materials and Methods:** A prospective study was carried out in the Department of Surgery, TMSS Medical College and Rafatullah Community Hospital, Bogura, Bangladesh from January 2022 to June 2022. A total of 86 patients with proper documentation were confirmed as the study population. Ethical clearance was taken from the hospital. Verbal consent was taken from all the participants before starting data collection. The data analysis was performed using Statistical Package for the Social Sciences (SPSS) Version 25.0. **Results:** Among the study population (N= 86), the majority of the people (30, 34.9%) were between 41-60 years old. Analgesics were administered in IV/IM route. The maximum number of patients (79, 91.9%) were given both opioid and non-opioid drugs. Based on Post-operative day (POD), In case of 1st POD, the majority of patients (53,61.6%) felt moderate pain, thirteen patients (13,15.1%) felt severe pain and in the case of 2nd POD, most of the patients (56,65.1%) felt moderate pain, and only four (4,4.7%) felt severe pain. There was an observed improvement in the case of the 3rd, 4th and 5th POD. Early discharge was noticed in most of the patients (52,60.5%) and late discharge was noticed in one-fifths of the patients (18,21.0%) who were given both opioid and non-opioid drugs. Late discharge was noticed in only one non-opioid groups (1,1.2%). There was no significant relationship between given analgesics and discharge of the patients (p=.634). **Conclusion:** The range of diverse experimental pain models allows pain and analgesia in humans to be studied under precise labs. In this present findings, clinical outcomes, claims and evaluations of the patients improved after suggesting both opioid and non-opioid groups.

Keywords: Pain, Drags, Analgesics Post-operative day (POD)

Introduction

Pain is the most common reason patients seek medical urgency. Pain has sensory and emotional components and is often classified as acute or chronic.¹ Physicians should assess the reason, severity, and nature of the pain and its effects on function focusing on daily activities, mood, cognition and sleep. Evaluation of the causes of acute pain differs from that of chronic pain.² acute pain is frequently associated with anxiety and hyperactivity of the sympathetic nervous system (tachycardia, increased respiratory rate and blood

pressure, diaphoresis, and dilated pupils). Chronic pain does not involve sympathetic hyperactivity but may be associated with vegetative signs (fatigue, loss of appetite).³ Analgesics are a class of medications designed specially to relieve pain without causing a loss of consciousness.⁴ The word analgesics derives from the Greek a (without) and algein (pain) and it works on the peripheral and nervous systems without blocking the conduction of nerve impulses.^{5,6} Analgesics can inhibit the sensation of pain by inhibiting the transmission of non-nociceptive impulses

along primary afferents (local anesthetics) or by altering the perception of pain (opioids).⁷ Analgesics drugs can be classified into three groups; such as non-opioid drugs, opioid drugs, and analgesic drugs also known as adjuvants.⁸ Medications used to manage pain should be carefully chosen based on the sort of pain the resident is undergoing and the selection of medications should also take into consideration the impact of old age and frailty.^{9,10} To enhance pain relief and minimize side effects, consideration can be given to combining analgesics with distinct modes of action. The 1st and perhaps the most evident is that the pain is reduced, resulting in the patient feeling improved. Using a combination of drugs makes them act more efficiently in alleviating pain and the more effective analgesics are, the minimum pain the patients feel.¹¹ There is another great advantage to the patient that if an amalgamation of painkillers is taken, then the patients will be able to take lower levels of any one particular type of analgesic and this means that they do not experience many of the unpleasant side effects that may result from high doses of one specific analgesics.¹² Antagonistic trials arise such as drowsiness, respiratory depression, nausea, vomiting and constipation for the opioid medications and drowsiness, dizziness, nausea and headache for the non-steroidal anti-inflammatory drugs.¹³ The current analysis intended to evaluate the clinical response of analgesics to patients.

Objective

- To evaluate the clinical response of analgesics to patients.

Materials and Methods

A prospective study carried out in the Department of Surgery, TMSS Medical College and Rafatullah Community Hospital, Bogura, Bangladesh from January 2022 to June 2022. A total of 86 patients with proper documentation were confirmed as the study population. Randomized sampling techniques were followed. Data were collected using the predesigned semi-structured questionnaire. Ethical clearance was taken from the hospital. Verbal consent was taken from all the participants before starting data collection.

Inclusion criteria

- Patients who agree to participate in the study.
- Patients suffering from cholelithiasis, appendicitis, hernia, perianal abscess.
- HPR-Duct Cell Carcinoma.

Exclusion Criteria

- Medically unfit patients.
- Patients who showed unwillingness to participate in the study.
- Patients with incomplete data.

Pain Measurement

The visual analogue scale (VAS) and numeric rating scale (NRS) are the most frequently used to determine the current intensity of acute pain. They are consistent, sensitive to change, and feasible to apply for the measurement of the severity of pain. A dolorimeter is an instrument used to measure pain threshold and pain tolerance scientifically. Measurement by the subjective report is by far the most common type of procedure for quantifying pain. Patients may indicate pain levels verbally, mark simple scales, or fill out complex questionnaires. In all cases, the patient determines data.¹⁴ The most common multidimensional pain scales are the McGill Pain Questionnaire, and the Brief Pain Inventory. This scale uses to assess a 'problem' list that does not just include pain intensity, moods, behavior, thoughts, beliefs, psychological effects, and interaction with each other.¹⁵

McGill Pain Questionnaire

Melzack and his team at McGill University designed the questionnaire in the early 1970s redeveloped it in 1950. The prior 11 words describe the sensory dimension and the next four are the affective dimension.¹⁵

Data analysis

The study coordinators performed random checks to verify data collection processes. Completed data forms were reviewed, edited, and processed for computer data entry. Frequencies, percentages, and cross-tabulations were used for descriptive analysis.

The data analysis was performed using Statistical Package for the Social Sciences (SPSS) Version 25.0. The significance level of 0.05 was considered for all tests.

Results

Most of the patients were suffering from cholelithiasis, appendicitis, hernia, and perianal abscess. They were prescribed to take analgesics. In our study, among the study population (N = 86), the majority of the people (30,34.9%) were between 41-60 years old, and around one-third of the people (25,29.1%) were included between 21-40 years of age, & only five (5,5.8%) were of 80 or more than 80 years old Table I. Analgesics were administered in IV/IM route. The maximum number of patients (79,91.9%) were given both opioid & non-opioid drugs, two patients (2,2.3%) were given opioid drugs, five patients (5,5.8%) were given non-opioid drugs Table II. Based on postoperative day (POD), in the case of 1st POD, the majority of patients (53,61.6%) felt moderate pain, and thirteen patients (13,15.1%) felt severe pain. In the case of the 2nd POD, most of the patients (56,65.1%) felt moderate pain, and only four (4,4.7%) felt severe pain. There was an observed improvement in the case of the 3rd, 4th & 5th POD. No one felt severe pain in the case of the 3rd, 4th & 5th POD. In terms of the 3rd POD, around half of the patients (45,52.3%) felt mild pain, and fourteen (14,16.3%) felt no pain. In the 4th POD, around one-third of the patients felt no pain & only seven (7,8.1%) had moderate pain. In the 5th POD, most of the patients (62,72.9%) had no pain and only around a fourth of them (24,27.9%) felt mild pain Table III. Based on outcome, ambulation was done spontaneously in the majority of both opioid & non-opioid drugs groups (46,53.5%), ambulation was done with help in most of the opioid groups (5,5.8%). The relationship between given analgesics with ambulation was non-significant (p=.230). Early discharge was noticed in most of the patients (52,60.5%) & late discharge was noticed in one-fifths of the patients (18,21.0%) who were given both opioid & non-opioid drugs. Late discharge was noticed in only one non-opioid groups (1,1.2%). There was no significant relationship between given analgesics and discharge of the patients (p=.634) Table IV

Table I: Distribution of study population according to age groups (N=86)

Age	(N,%)
≤20	11, 12.8
21- 40	25,29.1
41- 60	30,34.9
61- 80	15,17.4
≥80	5,5.8

Table 1: Most of the patients aged from 41-60 (30),

Table II: Distribution of study population according to Types of analgesic was given (N=86)

Analgesic	(N,%)
Opioid drugs	9,10.5
Opioid and Non-opioid drugs	70,81.4
Non-opioid drugs	7,8.1

Table-II: Most of the patients treated with opioid and non-opioid (70), only opioid used in 9 patients & non-opioid used in 7 patients.

Table III: Distribution of study population based on severity of pain on different Postoperative day (POD) (N=86)

POD	No pain (N,%)	Mild pain (N,%)	Moderate pain (N,%)	Severe pain (N,%)
1st POD	1,1.2	19,22.1	53,61.6	13,15.1
2nd POD	1,1.2	25,29.1	56,65.1	4,4.7
3rd POD	14,16.3	45,52.3	27,31.4	0,0.0
4th POD	25,29.1	54,62.8	7,8.1	0,0.0
5th PoD	62,72.9	24,27.9	0,0.0	0,0.0

Table-III: Most of the patient feel moderate pain on 1st and 2nd POD (53, 56)

Table IV: Distribution of study population based on Outcome of different types of analgesics (N=86)

Analgesics	Opioid drugs, (N, %)	Opioid and non-opioid drugs, (N, %)	Non opioid drugs (N, %)	p-value
Ambulation				
Spontaneously	4,4.7	46,53.5	3,3.5	.230 ^{ns}
Done with help	5, 5.8	24,28.0	4,4.7	
Discharge				
Early	7,8.1	52,60.5	6,7.0	.634 ^{ns}
Late	2,2.3	18,21.0	1,1.2	

Table-IV: With opioid and non-opioid spontaneous ambulation occurred in 46 patients and done with help in 24 patients, p-value is .230^{ns}. Again early discharged patients were 52 in case of opioid and non-opioid use and late discharged in 18 patients, p-value is .634^{ns}.

*t-test was performed

*p-value <.05s

Discussion

The choice of analgesics is determined by the type of pain; for neuropathic pain, traditional analgesics are less effective, and there is a frequent advantage from classes of drugs that are not usually considered analgesics, such as tricyclic antidepressants and anticonvulsants.¹⁶

In this current analysis, among the study population (N=86), the majority of the people (30,34.9%) were between 41-60 years old and only five (5,5.8%) were 80 or more than 80 years old. Another study depicted that the mean age of the patients was 49.5 years and about half of the patients (53.1%) were female.¹⁷ A related article published in an Indian journal found that 40 American females 20 to 55 years of age were provided postoperative analgesics.¹⁸ Another study carried out in the United States and Canada found that patients of age between 60 to 70 years old were prescribed analgesics.¹⁹ Another related article showed that the mean age of the patients was 34.2 years who were prescribed to take analgesics.²⁰ A similar study based in Australia found that ages between 45 and 54 years of age were 1.7 times higher to take analgesics compared to others age groups.²¹

In this present study, the maximum number of patients (79,91.9%) were given both opioid & non-opioid drugs, two patients (2,2.3%) were given opioid drugs and five patients (5,5.8%) were given non-opioid drugs. A study based on HIV cases found that rates of opioid use were around 2.5 times greater among those with HIV than their counterparts, while rates of non-opioid analgesics use were around twice the maximum.²² The data from 2015 to 2017 based on National Hospital Ambulatory Medical Care Survey showed that around 14.3% of emergency department visits received opioid analgesics, 23.4% received non-opioid and 8.8% both opioid and non-opioid analgesics.²³ Another randomized trial found that pain intensity was considerably better in the non-opioid groups and the adverse medication-related syndrome was more common in the opioid groups.²⁴ A systematic review indicated that pain scores did not significantly vary between patients who received opioid analgesics and those who received non-opioid drugs.²⁵ Another similar series depicted that, the most commonly prescribed clinical guideline-concordant non-opioid pain medications among individuals with a cancer diagnosis were antidepressants.²⁶

This current study represented that based on postoperative day (POD), in the case of 1st POD, the majority of patients (53, 61.6%) felt moderate pain, and thirteen patients (13,15.1%) felt severe pain. In the case of the 2nd POD, most of the patients (56,65.1%) felt moderate pain, and only four (4,4.7%) felt severe pain. There was observed an advancement in the case of 3rd,4th and 5th POD. A similar study carried out in Berlin showed that after taking analgesics patients were declared to be ready for discharge.²⁷ Another observation found that multimodal analgesics mitigate the risk factors and could potentially prevent postoperative delirium in high-risk patients undergoing surgery.²⁸ In another study, the pain was relieved quickly after analgesics were administered to the patients and the 2nd outcome was the patients who received analgesics experienced less postoperative delirium.²⁹ A systematic review found that the threat of delirium appeared to be lower with hydromorphone or fentanyl, in contrast with other opioids.³⁰

A doctor's clinical knowledge, attitudes and consciousness about analgesics will be help to the shape their prescribing practices and treatment. Effective knowledge requires to be dependent on the types of skills that clinicians would feel competent to prescribe analgesics. It is essential to allow them to recognize and address risk good, effective, engaging and balanced analgesics use for the management of pain.³¹

In our study, most of the patients were given combination drugs (opioid and non-opioid drugs) and early discharge was noticed in most of the patients. Only few were given either opioid or non-opioid drugs so, there was no significant relationship was found due to small sample size.

Conclusion

Pain is an unpleasant signal in the nervous system of the brain. The medical influence of pain is such that essential determination is being applied to enhance novel analgesic drugs directed towards new targets and to investigate the analgesic efficacy of known drugs. The diversity of distinct experimental pain models allows pain and analgesia in humans to be studied under controlled labs. In this current finding, clinical outcomes, claims and evaluations of the patients improved after suggesting both opioid and non-opioid analgesics.

Recommendations

The study population was selected from one selected hospital, so that the results of the study may not reflect the exact picture of the country. The present study was conducted at a very short period of time. Small sample size was a limitation of the present study. Therefore, in future further study may be under taken with large sample size. There is a necessity for setting a screening docket to cover all age groups for early detection of severity of pain. Furthermore, strategies should be implemented to accelerate government programs to understand different types of analgesics. To get robust data, multicenter studies are in great need of policymakers to interpret the demonstrable scenario and to take necessary steps

towards mitigating this problem.

Conflict of interest: None declared

References

1. Crofford LJ. Chronic pain: where the body meets the brain. *Transactions of the American Clinical and Climatological Association*. 2015; 126:167.
2. Clauw DJ, Essex MN, Pitman V, Jones KD. Reframing chronic pain as a disease, not a symptom: rationale and implications for pain management. *Postgraduate Medicine*. 2019; 131(3):185-98.
3. Evans S, Seidman LC, Tsao JC, Lung KC, Zeltzer LK, Naliboff BD. Heart rate variability as a biomarker for autonomic nervous system response differences between children with chronic pain and healthy control children. *Journal of pain research*. 2013;6:449.
4. Mehl SC, Cunningham ME, Chance MD, Zhu H, Fallon SC, Naik-Mathuria B, Ettinger NA, Vogel AM. Variations in analgesic, sedation, and delirium management between trauma and non-trauma critically ill children. *Pediatric Surgery International*. 2022; 38(2):295-305.
5. Samuelsen PJ. Use of analgesics in the general population: Trends, persistence, high-risk use and associations with pain sensitivity. 2016.
6. Kuttner L. A child in pain: what health professionals can do to help. Crown House Publishing; 2010 May 5.
7. Mechanism of action of analgesics used to treat osteoarthritis pain. [Available at: [https%3A%2F%2Fwww.rheumatic.theclinics.com%2Farticle%2FS0889857X\(03\)00058-9%2Fpdf&usg=AOvVaw0dTIxKk4stl8ztr7dT4eR8](https%3A%2F%2Fwww.rheumatic.theclinics.com%2Farticle%2FS0889857X(03)00058-9%2Fpdf&usg=AOvVaw0dTIxKk4stl8ztr7dT4eR8)] [Last Accessed on 26-12-2022]
8. Types of Analgesic Drugs - RnCeus.com. [Available at: <https://www.google.com/ url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwjOqMjy4Zb8AhXoSmwGHaQSDQUQFnoECD4QAw&url=https%3A>

- %2F%2Fwww.rnceus.com%2Fages%2Ftypes.htm&usg=AOvVaw18tALk7w1bOxamuevcehPe] [Last Accessed on 26-12-2022]
9. Huysmans E, Leemans L, Beckwée D, Nijs J, Ickmans K, Moens M, Goudman L, Buyl R, Putman K, Coppieters I. The relationship between cognitive and emotional factors and healthcare and medication use in people experiencing pain: a systematic review. *Journal of clinical medicine*. 2020 ; 9(8):2486.
 10. Fialová, D., Laffon, B., Marinković, V., Tasić, L., Doro, P., Sóos, G., Mota, J., Dogan, S., Brkić, J., Teixeira, J.P. and Valdiglesias, V. Medication use in older patients and age-blind approach: narrative literature review (insufficient evidence on the efficacy and safety of drugs in older age, frequent use of PIMs and polypharmacy, and underuse of highly beneficial nonpharmacological strategies). *European journal of clinical pharmacology*, 2019; 75(4), 451-466.
 11. Boppana SH, Peterson M, Du AL, Gabriel RA, Kutikuppala LS. Caffeine: What Is Its Role in Pain Medicine?. *Cureus*. 2022; 14(6).
 12. Perrot S, Cittée J, Louis P, Quentin B, Robert C, Milon JY, Bismut H, Baumelou A. Selfmedication in pain management: The state of the art of pharmacists' role for optimal Over The Counter analgesic use. *European Journal of Pain*. 2019; 23(10):1747-62.
 13. Tobias JD. Acute pain management in infants and children—part 2: intravenous opioids, intravenous nonsteroidal anti-inflammatory drugs, and managing adverse effects. *Pediatric Annals*. 2014; 43(7):169-75.
 14. Pogatzki-Zahn EM, Segelcke D, Schug SA. Postoperative pain—from mechanisms to treatment. *Pain reports*. 2017; 2(2).
 15. Gupta A, Kaur K, Sharma S, Goyal S, Arora S, Murthy RS. Clinical aspects of acute post-operative pain management & its assessment. *Journal of advanced pharmaceutical technology & research*. 2010; 1(2): 97.
 16. Khan M, Nishi SE, Hassan SN, Islam MA, Gan SH. Neuralgia del trigémino, neuralgia del glossofaríngeo y síndrome de disfunción del dolor miofascial: una actualización. *Pain Res Manag*. 2017; 2017: 7438326.
 17. Lalic S, Ilomäki J, Bell JS, Korhonen MJ, Gisev N. Prevalence and incidence of prescription opioid analgesic use in Australia. *British journal of clinical pharmacology*. 2019; 85(1): 202-15.
 18. Singh S, Kumar G. Ultrasound-guided erector spinae plane block for postoperative analgesia in modified radical mastectomy: a randomised control study. *Indian journal of anaesthesia*. 2019; 63(3): 200.
 19. Hales CM, Servais J, Martin CB, Kohen D. Prescription drug use among adults aged 40-79 in the United States and Canada. *NCHS Data Briefs*. 2019(347).
 20. Nguyen BK, Yuhan BT, Folbe E, Eloy JA, Zuliani GF, Hsueh WD, Paskhover B, Folbe AJ, Svider PF. Perioperative analgesia for patients undergoing septoplasty and rhinoplasty: an evidence-based review. *The Laryngoscope*. 2019; 129(6): 200-12.
 21. Lalic S, Gisev N, Bell JS, Korhonen MJ, Ilomäki J. Predictors of persistent prescription opioid analgesic use among people without cancer in Australia. *British journal of clinical pharmacology*. 2018;84(6):1267-78.
 22. Canan C, Alexander GC, Moore R, Murimi I, Chander G, Lau B. Medicaid trends in prescription opioid and non-opioid use by HIV status. *Drug and alcohol dependence*. 2019 ;197:141-8.
 23. Naavaal S. Opioid and Nonopioid Analgesic Prescriptions for Dental Visits in the Emergency Department, National Hospital Ambulatory Medical Care Survey. *Preventing Chronic Disease*. 2015–2017, 2021; 18.
 24. Krebs EE, Gravely A, Nugent S, Jensen AC,

- DeRonne B, Goldsmith ES, Kroenke K, Bair MJ, Noorbaloochi S. Effect of opioid vs nonopioid medications on pain-related function in patients with chronic back pain or hip or knee osteoarthritis pain: the SPACE randomized clinical trial. *Jama*. 2018; 319(9):872-82.
25. Darmawikarta D, Sourour M, Couban R, Kamath S, Reddy KK, Shanthanna H. Opioid-free analgesia for supratentorial craniotomies: a systematic review. *Canadian Journal of Neurological Sciences*. 2019; 46(4): 415-22.
 26. Shah J, Lesko RP, Lala B, Ricci J. Trends in opioid prescription for craniomaxillofacial trauma in the United States: An 11-year retrospective study of emergency room and office visits. *Surgery*. 2021; 170(1): 232-8.
 27. Radtke FM, Franck M, MacGuill M, Seeling M, Lütz A, Westhoff S, Neumann U, Wernecke KD, Spies CD. Duration of fluid fasting and choice of analgesic are modifiable factors for early postoperative delirium. *European Journal of Anaesthesiology| EJA*. 2010; 27(5): 411-6.
 28. Hsu M, Kintala S, Huang J, Philip J, Saththasivam P, Porter B. Successful Management of a Patient With a History of Postoperative Delirium Undergoing Cardiac Surgery With an Erector Spinae Plane Block and Multimodal Analgesia: A Case Report. *Cureus*. 2022; 30: 14(5).
 29. Hao J, Dong B, Zhang J, Luo Z. Pre-emptive analgesia with continuous fascia iliaca compartment block reduces postoperative delirium in elderly patients with hip fracture: A randomized controlled trial. *Saudi Medical Journal*. 2019; 40(9): 901.
 30. Swart LM, van der Zanden V, Spies PE, de Rooij SE, van Munster BC. The comparative risk of delirium with different opioids: a systematic review. *Drugs & aging*. 2017; 34(6): 437-43.
 31. Khan F, Ahmad N, Iqbal N, Kamal AM. Physicians knowledge and attitude of opioid availability, accessibility and use in pain management in Bangladesh. *Bangladesh Medical Research Council Bulletin*. 2014; 40(1): 18-24.

(TMSS Medical College Journal 2023; 20(1): 13-19)