International Journal of Medical Research Professionals
P-ISSN: 2454-6356; E-ISSN: 2454-6364
DOI: 10.21276/ijmrp

Original Research Article.

Study to Determine the Definite Percentage of the Different Analgesic Drugs and Analgesic Techniques Used At the Postoperative Ward for Pain Management in Sir Salimullah Medical College Hospital, Mitford, Dhaka

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ABSTRACT

Background: The rationale of determining the percentage of analgesics used in postoperative period is to determine the real utilization of opioid sparing effect of nonsteroidal anti-inflammatory drugs and the concept of multimodal analgesia.

Objectives: To determine the cost of opioids consumption because the opioids are expensive.

Methods: Total 541 patients were selected to find out the types of analgesics are being used in the postoperative e period irrespective of the types of operation and anaesthesia, premedication by analgesics and intraoperative analgesics used or not. Patients were divided into several age groups.

Results: In the existing prospective cross sectional study it is viewed that combination of intramuscular injection of pethidine and nonsteroidal anti-inflammatory drugs (either in suppository form or intravenous or intramuscular route) have the highest percentage in postoperative pain relief.

Keywords: Pain Management, Analgesics, Opioids, Pethidine, Nonsteroidal Anti-Inflammatory Drugs.

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Article History:

Received: 28-03-2019, **Revised:** 21-04-2019, **Accepted:** 17-05-2019

Access this article online	
Website: www.ijmrp.com	Quick Response code
DOI: 10.21276/ijmrp.2019.5.3.017	

INTRODUCTION

Pain in general is considered to be a protective mechanism. However postoperative pain has no useful purpose and can actually interfere with postoperative recovery by activating a neuroendocrine stress response to surgery. This response diminishes autonomic, somatic and endocrine reflexes and results in catabolism, arrythmogenesis, hypercoagulability and immunosuppression.[1, 2] Pain thus depletes the body's natural reserve for healing.[3]

Adequate treatment of postsurgical pain is more than a psychological issue of improving patient's comfort; it can actually decrease perioperative morbidity. Fortunately in last 20 years the science of pain management and its clinical practice have grown exponentially. This newly acquired knowledge affords health care professionals the opportunity to treat the patient's postsurgical pain more effectively. Postoperative pain management presents a major challenge to patients and health care providers. Inadequate pain management can lead to delay in rehabilitation and hospital discharge as well as lowers patient's satisfaction.[4]

Nociception and pain involve complex neurohumoral signaling pathway. Despite advances in the understanding of postoperative pain, including the need for a multimodal approach, opioid monotherapy remains common as initial first line pain management, despite known risk such as over sedation and long term dependence and abuse associated with opioid use. Opioid related adverse events have been shown to be associated with increased hospitalization, costs and increase in the overall length of hospital stay.[2]

The use of multimodal treatment strategies in the management of postoperative pain has been explored in a variety of surgical fields. Treatment with multimodal analgesia has been shown to reduce opioid use, reduce the incidence of opioid associated adverse events and improve pain control when compared with

using opioid mono therapy.[3-5] Non-opioid analgesic options includes non-steroidal anti-inflammatory drugs, local anesthetics, gabapentinoids, ketamine and glucocorticoids.

Another mode of postoperative pain management involves the use of regional anesthetic techniques including spinal epidural, caudal and perineural blocks and local anaesthetic infiltration. Epidural analgesia is not without risks, including the development of epidural hematoma and abscess. [8]

There are so many ways to combat postoperative pain. The intensity of pain depends on the degree of tissue injury. So different types of surgical procedures are eliciting pains of different intensity. All are being managed by different measures like pharmacologically administered opioids, NSAIDS, local anaesthetics or different other techniques.

MATERIALS AND METHODS

This is cross sectional study was conducted in the Anaesthesia, Analgesia and Intensive care Medicine department of Sir Salimullah Medical College, Mitford Hospital, Dhaka from October 2018 to January 2019. Prior to commencement of this study, the study protocol was submitted to the Ethical Clearing Committee of Sir Salimullah Medical College, Mitford and was approved. Study population was of either sex, ASA Class I Class II and of any age and patients undergoing elective surgery and emergency lower uterine Caesarian section. Follow-up was done from administration of postoperative analgesic up to twenty four hours after surgery. Patients were excluded from the study those who have bleeding diathesis, psychiatric disease and receiving medication for chronic pain, having allergy to any analgesic drug. A total of five hundred and forty patients were taken as sample size .They was sub grouped according to age.

Study Procedure

Data was collected from a predesigned data collection sheet containing all the information needed. These were age, sex, name of operation, type of anaesthesia, duration of surgery, name and dose of analgesic required when patient felt pain and also extra dose of analgesics.

Statistical Analysis

Data was processed according to the age group and percentage was calculated in different age groups and in total population also.

Table 1: Percentage of different analgesic drugs used and analgesic methods applied in 1 day to 5years age group.

Analgesic drugs/Methods	Number of patients	Percentage (%)
Intramuscular pethidine	7	22.58
Paracetamol suppository	10	32.25
Intramuscular pethidine and Paracetamol suppository combination	11	35.48
Local anaesthetic infiltration	1	3.23
Caudal Analgesia	2	6.46
Non-steroidal anti-inflammatory drugs	0	0
Total	31	100

Table 2: Percentage of different analgesic drugs used and analgesic methods applied in 6 to <18years age group

Analgesic drugs/Methods	Number of patients	Percentage (%)
Intramuscular pethidine injection.	18	26.47
Intramuscular pethidine and non-steroidal anti-inflammatory drugs combination	32	47.05
Intramuscular pethidine and Paracetamol suppository combination	1	1.47
Local anaesthetic infiltration	0	0
Caudal Analgesia	1	1.47
Non-steroidal anti-inflammatory drugs solely	15	22.05
Intramuscular pethidine and Tramadol suppository combination	1	1.47
Total	68	100

Table 3: Percentage of different analgesic drugs used and analgesic methods applied in 18 to 40years age group.

Analgesic drugs/Methods	Number of patients	Percentage (%)
Intramuscular pethidine injection.	41	20.39
Intramuscular pethidine and non-steroidal anti-inflammatory drugs combination	92	45.77
Intramuscular pethidine and Paracetamol suppository combination	1	0.49
Local anaesthetic infiltration	1	0.49
Caudal Analgesia	0	
Non-steroidal anti-inflammatory drugs solely	64	31.84
Intramuscular pethidine and Tramadol suppository combination	1	0.49
Others(Ketamine, Morphine)	1	0.49
Total	201	100

Table 4: Percentage of different analgesic drugs and analgesic methods in 41-60 years age group

Analgesic drugs/Methods	Number of patients	Percentage (%)
Intramuscular pethidine injection.	38	25.16
Intramuscular pethidine and non-steroidal anti-inflammatory drugs combination	83	54.96
Intramuscular pethidine and Paracetamol suppository/Intravenous combination	1	0.66
Local anaesthetic infiltration	1	0.66
Caudal Analgesia	0	0
Non-steroidal anti-inflammatory drugs solely	27	17.88
Intramuscular pethidine and Tramadol suppository combination	1	0.66
Total	151	100

Table 5: Percentage of different analgesic drugs and analgesic methods in >60years age group.

Analgesic drugs/Methods	Number of patients	Percentage (%)
Intramuscular pethidine injection.	29	32.22
Intramuscular pethidine and non-steroidal anti-inflammatory drugs combination	41	45.46
Intramuscular pethidine and Paracetamol suppository /intravenous combination	0	0
Local anaesthetic infiltration	1	1.11
Caudal Analgesia	0	0
Non-steroidal anti-inflammatory drugs solely	18	20
Intramuscular pethidine and Tramadol suppository combination	1	1.11
Total	90	100

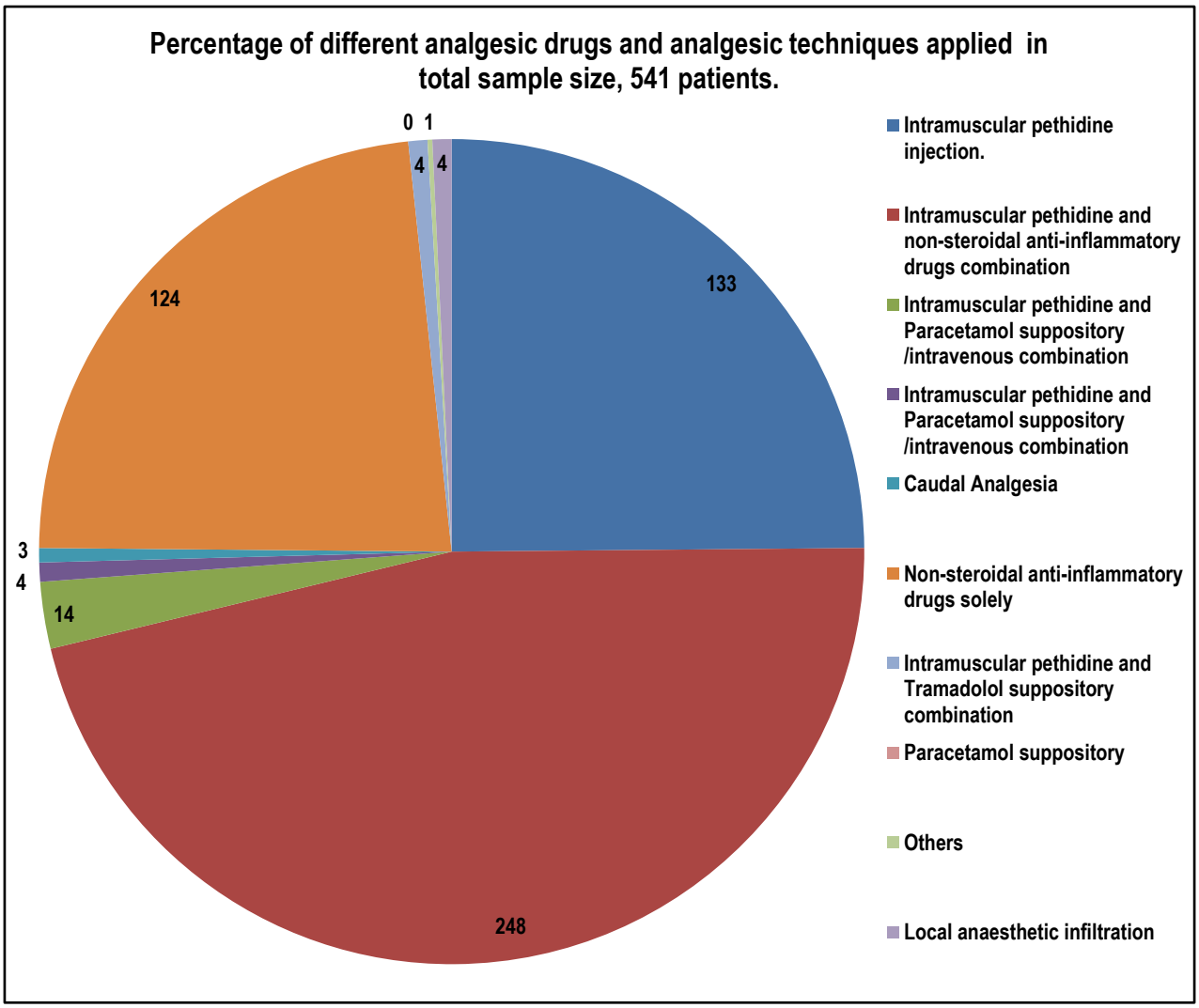

Figure 1: Percentage of different analgesic drugs and analgesic techniques

Table 6: Percentage of different analgesic drugs and analgesic techniques in total sample size, 541 patients

Analgesic drugs/Methods	Number of patients	Percentage (%)
Intramuscular pethidine injection.	133	24.58
Intramuscular pethidine and non-steroidal anti-inflammatory drugs combination	248	45.84
Intramuscular pethidine and Paracetamol suppository /intravenous combination	14	2.59
Local anaesthetic infiltration	4	0.74
Caudal Analgesia	3	0.55
Non-steroidal anti-inflammatory drugs solely	124	22.92
Intramuscular pethidine and Tramadol suppository combination	4	0.74
Paracetamol suppository	10	1.86
Others	1	0.18
Total	541	100

RESULTS

Table 1 shows thirty one patients having age between one day to five years. Among them highest percentage of patients (35.48%) are receiving intramuscular pethidine and paracetamol suppository combination for analgesia. Then is used paracetamol suppository in the second highest percentage of patients (32.25%). The use of non-steroidal anti-inflammatory drugs in this group is nil. Caudal analgesia has got a significant percentage in this age group (6.46%).

Table 2 shows sixty eight patients having age between six years to less than eighteen years. In this group about 47.05% patients are receiving intramuscular pethidine and non-steroidal anti-inflammatory drug combination and it is the highest percentage. Subsequently solely intramuscular pethidine in 26.47% cases and only non-steroidal anti-inflammatory drug in 22.05% cases was used. Caudal analgesia was used in only 1.47% patients.

Table 3 shows two hundred and one patients having age between eighteen years forty years. In this group about ninety two patients are receiving intramuscular pethidine and non-steroidal anti-inflammatory drug combination and it is the highest percentage (45.77%). Solely intramuscular pethidine in 20.39% cases and only non-steroidal anti-inflammatory drug in 31.84% cases was used. Caudal analgesia was used in only 1.47% patients.

Table 4 shows one hundred and fifty one patients having age between forty years to sixty years. In this group about eighty three patients are receiving intramuscular pethidine and non-steroidal anti-inflammatory drug combination and it is the highest percentage (54.96%). Solely intramuscular pethidine injection in 25.16% cases and only 17.88% cases are using non-and non-steroidal anti-inflammatory drug. Caudal analgesia was used in no patients.

Table 5 shows ninety patients having age more than sixty years. In this group about forty two patients are receiving intramuscular pethidine and non-steroidal anti-inflammatory drug combination and it is the highest percentage (45.46%). Solely intramuscular pethidine in 32.22% cases and only non-steroidal anti-inflammatory drug in 20.00% cases was used. Caudal analgesia was used in only 1.47% patients. Local anaesthetic infiltration and intramuscular pethidine and tramadol suppository combination were used in one patient in each aspect.

Percentage of different analgesic drugs and analgesic techniques shows in Table 6 and Figure 1.

DISCUSSION

Acute pain is defined as pain present in surgical patient after a procedure.[7]Postoperative pain differs from other types of pain in that it is usually ,but by no means always , transitory with progressive improvement over a relatively short time course.[10] Acute pain is more amenable to therapy than chronic pain. There are enormous variations in the extent of analgesic requirements depending upon the type of surgery, pharmacokinetics and pharmacodynamics variability etc.

Poorly managed postoperative can lead to complications and prolonged rehabilitation.[8] Uncontrolled acute pain is associated with the development of chronic pain with reduction in quality of life.[9] Appropriate pain relief leads to shortened hospital stay, reduced hospital costs and increased patients' satisfaction. Higher postoperative pain can be associated with lower quality of care. As a result, the management of postoperative pain is an increasing monitored quality measures. The Hospital Consumers Assessment of Health Providers and System Scores measures patients' satisfaction with in patient management and may have implications in regards to reimbursement.

Our result highlighted new aspects of postoperative pain control such as highest percentage of certain analgesics used in lower age group is not similar to those of adult age groups.

In age group 1 day to five years, paracetamol suppository use was in 35% to 48% cases which indicate the rate of minimal invasive surgery is highest in number. Use of nonsteroidal anti-inflammatory drug is highly discouraged in this group due to liver and kidney immaturity. The next is the multimodal type of analgesia in which combination of intramuscular injection of pethidine and paracetamol suppository was used about 32.25%. Caudal analgesia was given in 6.45% cases.

In age group >5 years to less than 18 years, combination of intramuscular injection of pethidine and nonsteroidal anti-inflammatory drugs (either in suppository form or intravenous or intramuscular route) has the highest percentage in use, 47.05%. Next was only intramuscular pethidine injection, 26.47%. Intramuscular injection of pethidine and paracetamol suppository or intravenously in combination was used in only 1.47% of patients. Nonsteroidal anti-inflammatory drugs solely (either in suppository form or in intravenous or intramuscular route) use was in 22.05% cases. In age group 18 to 40 years, nearly similar picture to the former group in the use of analgesic was found.

Total number of sample was 201. Among them 45.77% was given combination of intramuscular injection of pethidine and nonsteroidal anti-inflammatory drugs (either in suppository form or in intravenous or intramuscular route) was given. Only intramuscular pethidine was given to 20.39% of patients. No patient was given caudal analgesia. In case of bronchial asthma patients nonsteroidal anti-inflammatory drugs was not given, only intramuscular pethidine or combination of intramuscular pethidine and tramadol suppository was used as an alternative. Nonsteroidal anti-inflammatory drug has got opioid sparing effects about 25 to 30%. So it is used in combination with opioid to use less amount of it than when it is used alone. By this there is also a combined and less chance of side effect of opioid is obtained.

LIMITATIONS

Study has got few limitations. We have taken data irrespective of the type of operations, premedication received, intraoperative use of analgesic(s) and type of anaesthesia. Only twenty four hours' analgesics used were considered. The patients were not asked regarding their satisfaction or relief of pain after giving analgesic. Our study formed a basis for determining the percentage of patients who had no pain or minimal pain after receiving postoperative analgesia in future.

CONCLUSION

In conclusion the existing prospective cross sectional study shows that combination of intramuscular injection of pethidine and nonsteroidal anti-inflammatory drugs (either in suppository form or intravenous or intramuscular route) has the highest percentage in postoperative pain relief.

REFERENCES

1. Bisgaard T, Klarscov B, Kristiansen VB et al. Multiregional local anaesthetic infiltration during laparoscopic cholecystectomy in patients receiving prophylactic multimodal analgesia: a randomized double blind, placebo controlled study. Anesth Analg1999, 89:1017-24.
2. D Amours, RH. Ferrante FM: Perioperative drug and post-operative pain management, 1997, 15:251-68.
3. Kehlet H, Dahl JB: The value of multimodal or balanced analgesia in post-operative pain treatment. 1993.77:1048-56.
4. Christopher SA: Assessment and management of postoperative pain, in Drain (CB): The Anaesthesia Care Unit (ed3). philadelphia, Saunders.1994.
5. Rapp SE: Recovery Discharge. Anaesthesiol Clin Am.1996, 14:817-34.
6. Moinche S, Mikklenson S, Wetterslev J. Dahl JB, A qualitative systemic review of incisional local anaesthesia for postoperative pain relief after abdominal surgery, Br. J.Anaesth1998,81:377-35.
7. American Society of Anaesthesiologists Tasks Force on Acute Pain Management, Practice Guidelines for Acute Pain Management in the perioperative setting: an update report of by the American Society of Anaesthesiologists Tasks Force on Acute Pain Management, Anaesthesiology 2012:116(2): 243-73.
8. Kehlet H, Holte K. Effect of postoperative analgesia on surgical outcome. Br. J. Anaesth 2001:87(1): 62-72.
9. Kehlet H, Jensen TS, Woolf CJ. Persistent postsurgical pain: risk factors and prevention. Lancet 2006: 367(9522):1618-25.
10. Kalkman CJ, Visser K, Moen J, Bonsel GJ, Grobbe DE, Moons KG. Postoperative prediction of severe postoperative pain. Pain 2003, 114(2): 445- 57.

Source of Support: Nil.

Conflict of Interest: None Declared.

Cite this article as: Md. Tajul Islam, Prof. Dilip Kumar Saha, Md. Shafiqul Islam, Md. Habibur Rahman, A.K.M. Akhtaruzzaman, Mahammuda Khanom. Study to Determine the Definite Percentage of the Different Analgesic Drugs and Analgesic Techniques Used At the Postoperative Ward for Pain Management in Sir Salimullah Medical College Hospital, Mitford, Dhaka. Int J Med Res Prof. 2019 May; 5(3):76-80.
DOI:10.21276/ijmrp.2019.5.3.017