Scholars Journal of Applied Medical Sciences
Abbreviated Key Title: Sch J App Med Sci
ISSN 2347-954X (Print) | ISSN 2320-6691 (Online)
Journal homepage: https://saspublishers.com

OPEN ACCESS

Anesthesiology

Postoperative Pain Management is improved by Anesthesia-Based Pain Management

Dr. Md. Taihidur Rahman[1*], Dr. Nilufar Akter[2], Dr. Alamgir Jalil Pramanik[3], Dr. Md. Sirajul Islam Mondal[4], Dr. Md. Aminur Rahman[5], Dr. Saimun Nahar[6], Dr. Md. Shamsuzzaman Prodhan[7]

[1]Assistant Professor, Department of Anesthesiology, Rangpur Medical College, Rangpur, Bangladesh
[2]Consultant Department of Obstetrics and gynaecology, Upazilla Health Complex, Kaunia Rangpur, Bangladesh
[3]Consultant Department of General Surgery, Rangpur Medical College, Rangpur, Bangladesh
[4]Assistant Professor, Department of Otolaryngology and Head Neck Surgery, Rangpur Medical College, Rangpur, Bangladesh
[5]Consultant, Department of Orthopedic Surgery, Lalmonirhat Sodor Hospital, Lalmonirhat, Bangladesh
[6]Assistant Professor, Department of General Surgery, Rangpur Medical College, Rangpur, Bangladesh
[7]Assistant Professor, Department of Paediatrics, Rangpur Medical College, Rangpur, Bangladesh

DOI: 10.36347/sjams.2022.v10i10.004 | **Received:** 19.08.2022 | **Accepted:** 28.09.2022 | **Published:** 04.10.2022

***Corresponding author:** Dr. Md. Taihidur Rahman
Assistant Professor, Department of Anesthesiology, Rangpur Medical College, Rangpur, Bangladesh

Abstract **Original Research Article**

Background: The impact of anesthesia-based pain services has not been assessed in an efficient method. Anesthesia-based pain services are facilitating developments in the quality of care of surgical patients. Developed and directing institution-wide perioperative analgesia programs that include interdisciplinary collaborations. ***Objectives:*** The aim of the study was to evaluate postoperative pain management is improved by anesthesia-based pain management. ***Methods:*** This prospective single center study utilized a standardized approach to evaluate the quality of pain care provided to patients who were and who were not cared for by an anesthesia-based pain service. A total of 50 patients were evaluated using a standardized survey that consisted of a medical record review and a patient interview. Patients who received pain service care reported significantly lower pain intensity scores; had lower levels of pain in the postoperative period; had a lower incidence of pruritus, sedation, and nausea; and experienced significantly less pain than expected. Data was expressed as mean with standard deviation (Mean±SD). Collected Data were statically analyzed applying chi-square test using SPSS-24. P value of <0.05 was considered statically significant. ***Results:*** A total of 50 postoperative patients, from 23 hospitals, were evaluated prospectively. The mean age of the patients was 52.2 years (SD = 19.5 years) and 56.9% of them were female. On average, the patients stayed in the hospital 2.5 days (SD = 4.3 days; median = 1.0 days). ***Conclusions:*** The findings from this study demonstrate that the care provided by anesthesia-based pain services has a significant impact on patient outcomes.

Keywords: Postoperative pain; Pain service; Quality improvement; Quality assurance; Pain team; Patient satisfaction.

INTRODUCTION

The development of anesthesia-based pain services is the need to evaluate whether the quality of perioperative pain management improves when patients receive these services. It is well recognized that effective pain management is an essential part of patients care and has the potential to reduce morbidity and mortality, facilitate recovery, allay the anxiety and stress of both the child and the parents, and reduce the cost of health care [1-4]. It has been argued recently that mismanaged or undertreated acute pain from procedures or surgery should be considered an adverse event because it is largely avoidable and because it has detrimental consequences for children from a behavioral and physiologic standpoint [5]. Despite more than a decade of focus on patients' pain, ample recent evidence suggests that uncontrolled pain is still a problem in patient's inpatient services [6-9]. Several meetings were convened to address the issue. The anesthesia pain service (APS) was given the opportunity to help plan a strategy to identify and analyze the problem and implement measures to improve our hospital's overall pain management. Several problems were identified from the outset. We were unable to identify which specific patients or patient populations were experiencing poor pain control

or to determine whether the patients were surgical, medical, critical care, or chronic pain subjects. It was also unclear whether the problem was inadequate pain management while in the hospital or inadequate pain regimens after discharge from the hospital. The model of "stewardship programs" was adopted. The word stewardship refers to the "responsible overseeing and protection of something worth caring for and preserving" [10]. Antibiotic stewardship programs, managed by microbiology or infectious disease services, ensure that hospitalized patients with infections receive appropriate antibiotic therapy and assure patients that they are receiving therapy tailored for their infection. More recently, pain medication stewardship programs, managed by hospital pharmacy staff, have been initiated to oversee the orders for narcotic pain regimens. These programs serve as a method of error-proofing by providing oversight of medication management between the microbiology laboratory or pharmacy and the clinical floors [11-13]. From the perspective of functionality, the first step was to develop a method that would help identify the magnitude of the problem; to then determine how many and which patients were having ongoing severe pain; and finally, to develop a response system to reliably provide appropriate management. We present here the development of our novel pain stewardship program and the results from the first year of its activity. The purpose of this paper is to report the results of a prospective study that evaluated the quality of postoperative pain management in patients who received their pain care by anesthesiology-based pain services compared to patients who were not cared for by a pain service.

OBJECTIVE

The aim of the study was to evaluate postoperative pain management is improved by anesthesia-based pain management.

METHODS

This prospective single center study utilized a standardized approach to evaluate the quality of pain care provided to patients who were and who were not cared for by an anesthesia-based pain service. A total of 50 patients were evaluated using a standardized survey that consisted of a Rangpur medical College, Rangpur, Bangladesh record review and a patient interview. Patients who received pain service care reported significantly lower pain intensity scores; had lower levels of pain in the postoperative period; had a lower incidence of pruritus, sedation, and nausea; and experienced significantly less pain than expected. Data was expressed as mean with standard deviation (Mean±SD). Collected Data were statically analyzed applying chi-square test using SPSS-24. P value of <0.05 was considered statically significant.

RESULTS

The total study population was 50 patients, 13(26.0%) were Back pain, 20(40.0%) were Generalized pain, 7(14.0%) were Back and chest pain, 5(10.0%) were Neck pain and 5(10.0%) were Penoscrotal pain. Table I demonstrated the Number and Percentage of Records According to Pain Distribution Category. The total study population was 50 patients, 31(62.0%) were PCA, 5(10.0%) were PCA continuous infusion, 8(16.0%) were Continuous epidural infusion, 41(82.0%) were PCA-epidural, 49(98.0%) were IV injection/infusion, 49(98.0%) were IM injection and 45(90.0%) were Oral. Table II demonstrated the Primary analgesic modalities prescribed by the pain service. The total study population was 50 patients. According to Orthopedic 48% were pain and 52% were no pain. 41% were pain and 47% were no pain in Vascular and 38% were pain and 68% were no pain in Thoracic. Bases on others 5% were pain and 2% were no pain. Figure I demonstrated the Percentage of patients in each surgical category who were followed by a pain service. The total study population was 50 patients. Figure II demonstrated the Outcome of patients responding. According to Never 30% were pain and 10% were no Pain. 30% were pain and 20% were no pain in Sometimes and 14% were pain and 5% were no pain in Often. Bases on Always 4% were pain and 3% were no pain.

Table I: Number and Percentage of Records According to Pain Distribution Category

Pain Distribution Category	n=50	%
Back pain	13	26.0
Generalized pain	20	40.0
Back and chest pain	7	14.0
Neck pain	5	10.0
Penoscrotal pain	5	10.0

Table II: Primary analgesic modalities prescribed by the pain service

Pain Distribution Category	n=50	%
PCA	31	62.0
PCA+continuous infusion	5	10.0
Continuous epidural infusion	8	16.0
PCA-epidural	41	82.0
IV injection/infusion	49	98.0
IM injection	49	98.0
Oral	45	90.0

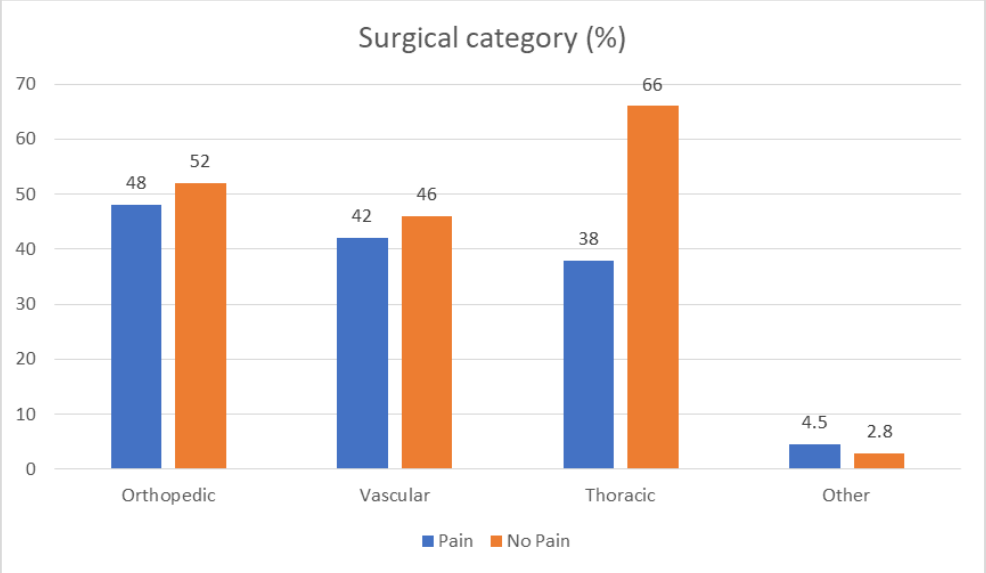

Figure I: Percentage of patients in each surgical category who were followed by a pain service

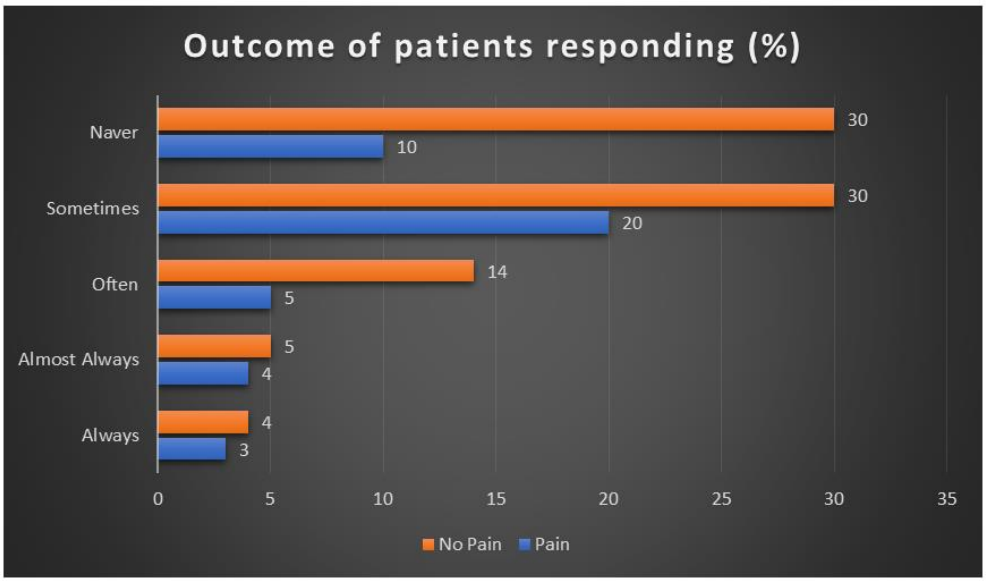

Figure II: Outcome of patients responding

DISCUSSION

Anesthesiology-based postoperative pain management services have been developing slowly over the past 10 years [14]. However, with the more widespread use of complex technologies (e.g., patient-controlled analgesia (PCA)) and newer therapeutic approaches (e.g., epidural analgesia) for postoperative pain management, the need for proactive leadership to ensure the effective management of postoperative pain is an imperative in most health care facilities. Therefore, the practice guidelines for Acute Pain Management developed by the American Society of Anesthesiology [15] recommend that anesthesiologists provide this leadership by integrating pain management practices into the various aspects of perioperative care. In addition, the ASA guidelines [16] note that anesthesiologists should facilitate improvements in the quality of care of surgical patients by developing and directing institution-wide perioperative analgesia programs that include interdisciplinary collaborations. Coupled with the development of anesthesia-based pain services is the need to evaluate whether the quality of perioperative pain management improves when patients receive these services. Both the Quality Improvement Committee of the American Pain Society [17] and the Acute Pain Management Guideline Panel of the Agency for Health Care Policy and Research [18] recommended that institutions develop, as part of their quality improvement activities, a process for evaluating the quality of postoperative pain management. Both groups provided explicit suggestions on the key components of any quality improvement efforts related to postoperative pain management.

In our study, population was 50 patients, 13(26.0%) were Back pain, 20(40.0%) were Generalized pain, 7(14.0%) were Back and chest pain, 5(10.0%) were Neck pain and 5(10.0%) were Penoscrotal pain. And according to the Primary analgesic modalities prescribed by the pain service 31(62.0%) were PCA, 5(10.0%) were PCA continuous infusion, 8(16.0%) were Continuous epidural infusion, 41(82.0%) were PCA-epidural, 49(98.0%) were IV injection/infusion, 49(98.0%) were IM injection and 45(90.0%) were Oral.

Several studies on the quality of postoperative pain management, that utilized the APS [16] and [19] recommendations, have been reported [20]. These studies were descriptive in nature and in all cases found that patients reported high satisfaction scores despite ratings of severe pain. However, all of these studies were done in single institutions with relatively small sample sizes. In addition, none of these quality improvement studies [20] reported on whether patients received their postoperative pain management by an anesthesia-based pain service. The purpose of this paper is to report the results of a prospective multisite study that evaluated the quality of postoperative pain management in patients who received their pain care by anesthesiology-based pain services compared to patients who were not cared for by a pain service.

In our study, according to Orthopedic 48% were pain and 52% were no pain. 41% were pain and 47% were no pain in Vascular and 38% were pain and 68% were no pain in Thoracic. Bases on others 5% were pain and 2% were no pain. And According to Never 30% were pain and 10% were no Pain. 30% were pain and 20% were no pain in Sometimes and 14% were pain and 5% were no pain in Often. Bases on Always 4% were pain and 3% were no pain.

And our study demonstrated that, the Outcome of patients responding. According to Never 30% were pain and 10% were no Pain. 30% were pain and 20% were no pain in Sometimes and 14% were pain and 5% were no pain in Often. Bases on Always 4% were pain and 3% were no pain.

Anesthesia-based pain services utilized PCA devices with a continuous infusion and continuous epidural infusions as the most common analgesic modalities. This finding is consistent with recommendations made in the ASA [15] and the AHCPR [19] acute pain guidelines that the use of these modalities should be assigned to ‘experts working in dedicated groups. The goal of this recommendation is to provide for the safe administration of analgesics using these approaches with minimal deleterious effects.

Most of the studies on the under treatment of postoperative pain [21] and the poor quality of postoperative pain management [20] have called for the education of physicians and nursing personnel. However, work by Max (1990) [22] noted that traditional educational approaches do not change clinicians’ behaviors related to pain management. He suggests that traditional educational approaches must be complimented by interventions in health care systems that more directly influence the routine behaviors of clinicians and patients. Data from this study suggest that the addition of an anesthesia-based pain service to a health care system significantly enhances the quality of postoperative pain management as well as patients’ satisfaction.

Limitation of the Study

This was a small sample size prospective comparative hospital-based study. As a result, the findings of this study may not accurately reflect the situation in the entire country.

CONCLUSION

Anesthesia-based pain services are facilitating improvements in the quality of care of surgical patients by developing and directing institution-wide perioperative analgesia programs that include interdisciplinary collaborations. Adequate Postoperative Pain Management is integral to patient care and outcomes. The findings from this study demonstrate that the care provided by anesthesia-based pain services has a significant impact on patient outcomes.

RECOMMENDATION

This study can serve as a pilot to much larger research involving multiple centers that can provide a nationwide picture, validate regression models proposed in this study for future use and emphasize points to ensure better management and adherence.

FUNDING

No funding sources.

CONFLICT OF INTEREST

None declared.

ACKNOWLEDGEMENT

The wide range of disciplines involved in Postoperative Pain Management is Improved by Anesthesia-Based Pain Management research means that an editor’s needs much assistance from referees in the evaluation of papers submitted for publication. I am very grateful to many colleagues for their thorough, helpful and usually prompt response to requests for their opinion and advice.

REFERENCES

1. Schechter, N. L., Blankson, V., Pachter, L. M., Sullivan, C. M., & Costa, L. (1997). The ouchless

place: no pain, children's gain. *Pediatrics*, 99(6), 890-894.
2. Melzack, R. (1990). The tragedy of needless pain. *Scientific American*, *262*(2), 27-33.
3. Liebeskind, J. C. (1991). Pain can kill. *Pain*, *44*(1), 3-4.
4. Duff, A. J. A. (2003). Incorporating psychological approaches into routine paediatric venepuncture. *Archives of Disease in Childhood*, *88*(10), 931-937.
5. Chorney, J. M., McGrath, P., & Finley, G. A. (2010). Pain as the neglected adverse event. *Cmaj*, *182*(7), 732-732.
6. Voepel-Lewis, T., Shayevitz, J. R., & Malviya, S. (1997). The FLACC: a behavioral scale for scoring postoperative pain in young children. *Pediatr Nurs*, *23*(3), 293-297.
7. Stevens, B. J., Harrison, D., Rashotte, J., Yamada, J., Abbott, L. K., Coburn, G., ... & Le May, S. (2012). CIHR Team in Children's Pain. Pain assessment and intensity in hospitalized children in Canada. *J Pain*, *13*(9), 857-65.
8. Groenewald, C. B., Rabbitts, J. A., Schroeder, D. R., & Harrison, T. E. (2012). Prevalence of moderate–severe pain in hospitalized children. *Pediatric Anesthesia*, *22*(7), 661-668.
9. Birnie, K. A., Chambers, C. T., Fernandez, C. V., Forgeron, P. A., Latimer, M. A., McGrath, P. J., ... & Finley, G. A. (2014). Hospitalized children continue to report undertreated and preventable pain. *Pain Research and Management*, *19*(4), 198-204.
10. Dictionary.com. Stewardship. Available at: http://dictionary.reference.com/ browse/stewardship?s5t. Accessed February 2, 2015
11. Leuthner, K. D., & Doern, G. V. (2013). Antimicrobial stewardship programs. *Journal of clinical microbiology*, *51*(12), 3916-3920.
12. Hyun, D. Y., Hersh, A. L., Namtu, K., Palazzi, D. L., Maples, H. D., Newland, J. G., & Saiman, L. (2013). Antimicrobial stewardship in pediatrics: how every pediatrician can be a steward. *JAMA pediatrics*, *167*(9), 859-866.
13. Ghafoor, V. L., Phelps, P., & Pastor, J. (2013). Implementation of a pain medication stewardship program. *American journal of health-system pharmacy*, *70*(23), 2070-2075.
14. Ready, E. (1988). Heat pumps.
15. Miaskowski, C., Crews, J., Ready, L. B., Paul, S. M., & Ginsberg, B. (1999). Anesthesia-based pain services improve the quality of postoperative pain management. *Pain*, *80*(1-2), 23-29.
16. Max, M. B., Donovan, M., Miaskowski, C. A., Ward, S. E., Gordon, D., Bookbinder, M., Cleeland, C. S., Coyle, N., Kiss, M., Thaler, H. T., & Janjan, N. (1995). Quality improvement guidelines for the treatment of acute pain and cancer pain. *Jama*, *274*(23), 1874-1880.
17. American Pain Society Quality of Care Committee. (1995). Quality improvement guidelines for the treatment of acute pain and cancer pain. *Jama*, *274*(23), 1874-1880.
18. Carr, D. B., Jacox, A., Chapman, C. R., Farrell, B., Fields, H. L., Heidrich III, G., Hester, N. O., Hill, C. S., Lipmaii, A. G., McGarvey, C. L., & Miaskowski, C. (1992). Acute pain management: operative or medical procedures and trauma. Clinical Practice Guideline. AHCPR Pub. No. 92–0032. Rockville, MD: Agency for Health Care Policy and Research. *Public Health Service, US Department of Health and Human Services*.
19. Carr, S., Francis, M., Rivlin, L. G., & Stone, A. M. (1992). *Public space*. Cambridge University Press.
20. Moran, K. (1993). Acute Pain Management: Operative or Medical Procedures and Trauma. *Clinical Practice Guideline.*
21. Bookbinder, M., Covle, N., Kiss, M., Goldstein, M. L., Holritz, K., Thaler, H., Gianella, A., Derby, S., Brown, M., Racolin, A., & Ho, M. N. (1996). Implementing national standards for cancer pain management: program model and evaluation. *Journal of pain and symptom management*, *12*(6), 334-347.
22. Kishore-kumar, R., Max, M. B., Schafer, S. C., Gaughan, A. M., Smoller, B., Gracely, R. H., & Dubner, R. (1990). Desipramine relieves postherpetic neuralgia. *Clinical Pharmacology & Therapeutics*, *47*(3), 305-312.