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Postoperative analgesics used in private clinics: A study in several private clinics in Rajshahi, Bangladesh

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Abstract
Postoperative pain management by analgesics has become a major challenge for service providers all over the world. Due to the various constraints,analgesics usedin postoperative pain management in Bangladesh havegotten greater attention from scientistsand policymakers.We conducted an observational study to assess the effect of postoperative analgesics used on patients in different private clinics in Rajshahi, Bangladesh. Subject selection was purposive to those who were admitted tothe selected clinics from November 2021 to May 2022. We recorded the patient's demographics, postoperative pain orders, and analgesia regime on the day of surgery.The anesthesia team, which included one of the investigators, assessed the overall pain since the time of surgery by visual analog scale (VAS) and also recorded any complications since the time of surgery and patients' satisfaction with the pain management.A total of 200 patients were reviewed during the study period. The common modality of pain management was intravenous opioid infusion (94%) and co-analgesia was used in 99% of patients. The analysis of pain at rest by VAS was between 1 and 3 in 83%, moderate pain (VAS 4–6) in 12%, and severe pain (VAS 7–10) in 5% of patients at rest. On movement, the pain score was mild in 7%, moderate in 33%, and severe in 60% of patients.Twenty-one percent of participants were highly satisfied. However, 33 percent were not satisfied with the postoperative pain management service. Forty-six percent of participants were moderately satisfied.In the conclusion, the regime for postoperative pain management by analgesic use was not adequately satisfied.

Key words: *Analgesics, postoperative pain assessment, visual analog scale (VAS)*

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I. Introduction

Modern anesthesia has advanced to a point at which all patients can be guaranteed a pain-free intra-operative period. Unfortunately, we often fall short when it comes to providing postoperative pain relief. The pain that the patients eventually experience afterward is what patients fear more than the surgical procedure. Most people suffer from post-operative pain of varying intensity among those undergoing operation. Inadequate treatment and improper analgesicuse can cause needless suffering and may develop complications. John J. Bonica again said, "The proper management of pain remains, after all, the most important obligation, the main objective, and the crowning achievement of every physician."[1] The goal of postoperative pain management is to reduce or eliminate pain and discomfort with a minimum of side effects as cheaply as possible. Postoperative pain relief must reflect the needs of each patient and this can be achieved only if many factors are taken into account. These may be summarized as clinical factors, patient-related factors, and local factors.In the final analysis, the patient's perception of pain is the ultimate determinant of the adequacy of pain relief. Many studies have attributed the cause of this problem to the lack of knowledge and poor attitude of both health personnel and patients toward pain and also due to the lack of a dedicated pain management service.Patients have even more compelling reasons to achieve optimal postoperative pain relief, as they present with unique challenges; such as a higher risk for thromboembolic events, which may also be precipitated by immobility from inadequate pain control or excessive sedation associated with the use of opioids. The aim of our study was to assess the effect of analgesics used in private clinics inRajshahi, Bangladesh. In our observations, we reviewed broad areas ofthe

outcome, such as effectiveness, safety, and tolerability. Effectiveness was inferred from visual pain scores and satisfaction. Safety and tolerability were assessed by the occurrence of side effects.

II. Objectives

1. General objective:

a) To assess the effect of post-operative analgesics used in private clinics, Rajshahi, Bangladesh

2. Specific objectives:

a) To know more about post-operative pain management scenarios in private clinics, Rajshahi Bangladesh

b) To know more about analgesics used in Private clinics, Rajshahi, Bangladesh

III. Materials and Methods

This was an observational study conducted at the private clinics of Rajshahi, BangladeshfromNovember 2021 to May2022 in the operation theater. A total of 200 patients were selected for the purpose of this study. All patients were reviewed by one of the investigators. On the day of surgery, data entered in the predesigned questionnaire included patients' names, hospital numbers, techniquesof anesthesia used, postoperative pain orders, and the specialty of the physician prescribing the postoperative analgesia. The anesthesia team followed the patients on the first postoperative day, and data regarding the type of postoperative analgesia, co-analgesia used (NSAIDs or paracetamol in either oral or suppository form); team managing the postoperative pain, assessment of pain severity, complications, and patient satisfaction with the pain management were noted. In our study, we used a VAS of 0–10. The overall VAS score, since the time of surgery, was recorded. VAS of 0–3 was graded as mild, VAS of 4–6 as moderate, and VAS of 7–10 as severe pain. Safety and tolerability were assessed by the occurrence of side effects. The common complications specifically looked for were nausea, vomiting, drowsiness, headache, backache,pruritus, sedation, respiratory depression, urinary retention, muscle weakness, and inability to walk. The data were entered and analyzed in SPSS (version 14). Frequencies of type of anesthesia, patient satisfaction, complications, and visual pain score at rest and at movement, any co-analgesia used and post-operative pain orders and ordering physicians are generated, component bar chart for the severity of pain at different positions was made, and 95% confidence interval for the patient satisfaction was also computed.

IV. Results

Two hundredpatients had an elective cesarean section during a 7month study period. The postoperative analgesia regime was started by the obstetric team in 81% of patients and in the rest by the anesthesia team. The follow-up of these patients for pain management was done by the obstetric team for 94% and the rest by the acute pain management service (APMS).

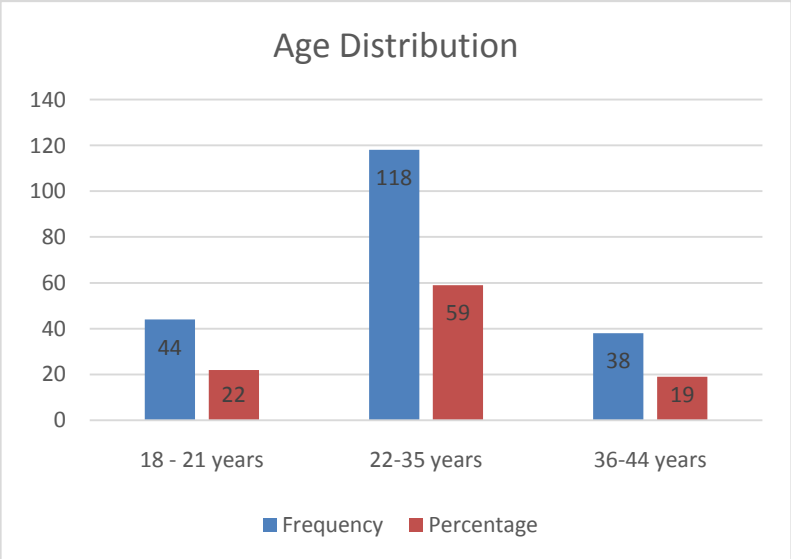

Figure 1: Age distribution of study participants (n=200)

The figure shows those mid-age groups (20-35 years) are dominating this distribution. However, the Aged group (36-44) is the least participants in this study.

Table1: Socioeconomic and demographic characteristics of post-cesarean section women in Private clinics (n=200)

Variables		
	Frequency	Percent (%)
Age		
18 - 21 years	44	22.00
22-35 years	118	59.00
36-44 years	38	19.00
Years of education		
Service	42	21.00
Unemployed	158	79.00
Socioeconomic Class		
Poor	74	37.00
Middle class	94	47.00
Wealthy	32	16.00

The table shows that 79%of the present study participants were unemployed, and 37% were from poor socioeconomic classes.

Table 2: Characteristics of postoperative pain among post-cesarean section women in the clinics (n=200)

Variables	**Post-cesarean section women**	
	Frequency	Percent
Pain at the surgical site		
Yes	58	29
No	142	71
Pain Intensity (n=29)		
Mild	14	48.27
Moderate	12	41.37
Severe	3	10.34
Activity level with pain		
Moderate Movement	132	66
Resting State	68	34

29% of women suffered Pain at the surgical site. Among them, severe pain was observed in 10.34%, and mild and moderate levels of pain were observed in 48.27 and 41.37% respectively. 66%could move with moderate pain and the remaining were suggested for continuous rest.

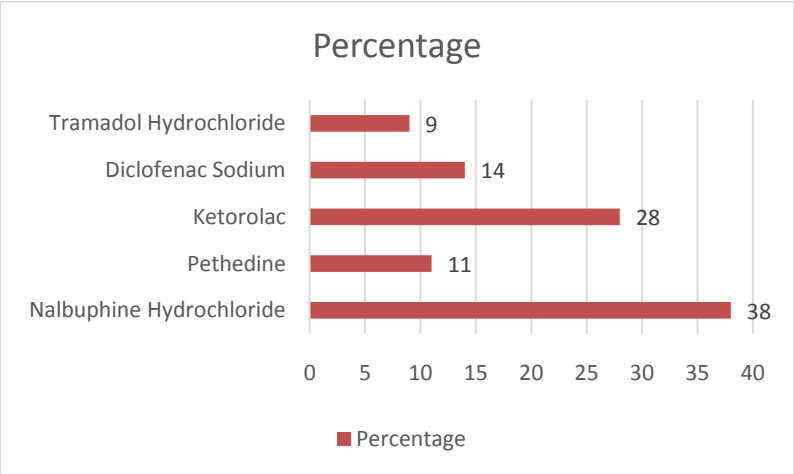

Figure 2: Percentage of patients receiving different types of analgesicsby the intramuscular route (n=200)

The figure shows that Nalbuphine Hydrochloride was mostlyused in private clinics as an analgesic which wasbearing 38% of whole patients. Other used analgesics wereKetorolac, Diclofenac Sodium,Pethidine,and Tramadol Hydrochloridebearing percentagesof 28%, 14%, 11, and 9% respectively.

Table 3: Percentages of patients receiving different types of co-analgesia medications (n=200)

Co-analgesia used	Frequency	Number of patients (%)
Dicofenac sodium(50 mg suppository)	146	73
Tablet paracitamol(1 g)	12	6
Both (tablet and Suppository)	42	21

The table shows that 73%of the study participants used Diclofenac sodium(50mg suppository) as a co-analgesia and 6% only used Tablet paracetamol (1 g) as a co-analgesia. However, twenty-one percent of the participants used both.

Table 4: Distribution of satisfaction levels of the study participants (n=200)

Variables	Satisfaction level	
	Frequency	Percent
Highly satisfied	42	21
Satisfied	92	46
No Satisfaction	66	33

Twenty-one percent of participants were highly satisfied. However, 33 percent were not satisfied with the postoperative pain management service. Forty-six percent of participants were moderately satisfied.

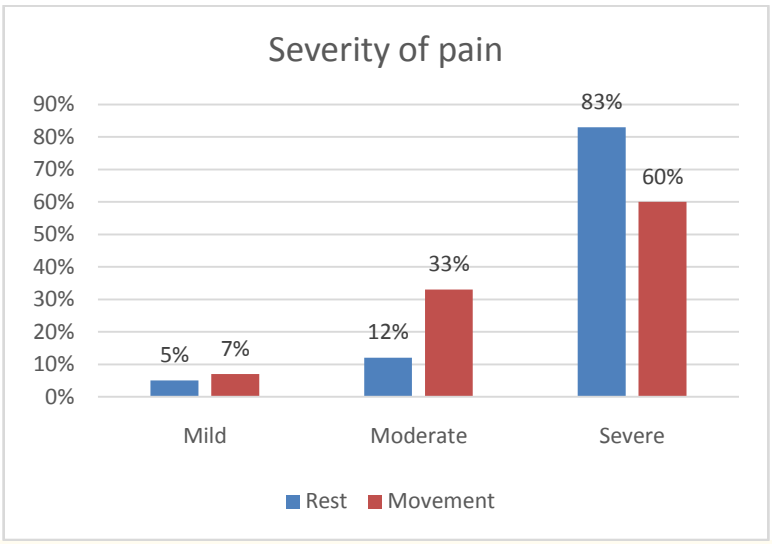

Figure 3: Distribution of patients having mild, moderate, and severe pain scores at rest and movement (n=200)

Analysis of overall pain scores since the time of surgery showed mild pain (VAS 0–3) in 83%, moderate pain (VAS 4–6) in 12%, and severe pain (VAS 7–10) in 5% of patients at rest. On movement, the pain score was mild in 7%, moderate in 33%, and severe in 60% of patients.

V. Discussion

High-quality pain relief is important after surgery to promote early recovery and optimize the ability to care for the patients. Surveys [2] have shown advances in postoperative pain management, postoperative pain relief and satisfaction are still inadequate in some patients because of individual variability and limitation from side effects of analgesic drugs or techniques. [3] Historically, surgeons have prescribed postoperative pain medications when writing general postoperative orders. Marks and Sachar[4] noted that 73% of postoperative patients experienced distressing pain due to inadequate doses of analgesics prescribed at infrequent intervals by physicians. Loperet al.[5] have demonstrated an inadequate knowledge of health care providers regarding analgesics leading to ineffective pain control. In our study, we observed that in the majority of cases, postoperative orders were prescribed and followed up by the obstetrics team. One way to meet the demands of managing postoperative pain is the introduction of an anesthesiology-based acute pain service.[6] There is no "gold standard" for post-cesarean pain management. There isa number of options, the choice of which is at least partly determined by drug availability, regional and individual preferences, resource limitation, and financial considerations.[7] The issue of cost and availability of the drugs are the main barriers to effective pain control in developing countries. Regional anesthesia provides anesthetists with an effective and convenient route of opioid administration and in many developed countries, it is employed as a method of postoperative pain management

after cesarean sections.[8] The administration of epidural and intrathecal opioids is a popular means of augmenting intraoperative anesthesia and optimizing postoperative analgesia.[9] In our part of the world, the only preservative-free narcotic available for the intrathecal and epidural route is fentanyl, which is routinely used in our unit for cesarean sections performed under spinal anesthesia. While intrathecal fentanyl is widely given due to its intraoperative analgesic effect unless used in high doses (e.g., fentanyl 40–60 μg), the effects are too short-lived to be adequate for postoperative pain relief and they do not alter 24 h opioid consumption.[10] In contrast, the lower lipid solubility of morphine delays the onset of action and prolongs its duration, hence making it suitable for postoperativepain management. In developing countries, the surgeon prescribed, nurse administered intermittent intramuscular administration of analgesics is the method used for postoperative pain management.[11] In our unit, an intravenous supplemented with anti-inflammatory analgesics is the most common type of postoperative management regime used. Pethidine was the drug of choice and used in a fixed dose of 10 mg/h, irrespective of the weight and individual demand of the patient. [12] described a regularly controlled infusion of pethidine at a rate of 0.3 mg/kg/h. Stepletonetal.[13] assessed another regimen for the intravenous infusion of pethidine. They gave a loading dose of 1 mg/min for 45 min followed by 0.53 mg/min for 28 min. A maintenance infusion of 0.4 mg/min was used for the remainder of the 32 h study period. Rutter et al.[14] In the conclusion, we can recommend that analgesics used in postoperative pain management weremodernly adequate in terms of patients' safety but it was not fully satisfactory due to the unavailability of analgesics and the high price of the analgesics.Especially, doctors recommend pethidine but poor patients can't afford it. In order to meet International Standards of Pain Management, an ideal post-cesarean analgesia regimen requires proper utilization of resourcesto formulate a method that is cost-effective, simple to implement, and has minimal impact on staff workload. We recommend expanding the services of acute pain services to develop nurse based; anesthesiologists supervised acute pain services in cooperation with surgeons. This also needs upgrading the role of ward nurses by providing them with proper training to assess pain intensity, administer analgesics, monitor efficacy and adverse events, and be able to participate in collecting data for audits.

Limitations of the study

This study was conducted in one community. So, study results can't give an exact scenario for the whole country. On the other hand, we conducted this study with a limited sample size due to some unavoidable circumstances, in that perspective; this result can raise a question of Generalizability.

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