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An Assessment of Postoperative Pain Management Undergoing Cesarean Section

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Abstract

Postoperative pain management of cesarean patients has become a major medical and nursing challenge in all over the world. Due to the various constraints postoperative pain management of cesarean patient in Bangladesh got greater attention from the scientific community and policy makers. An observational study was conducted to assess the strategy, effectiveness, and safety of postoperative pain management in patients undergoing cesarean section in the obstetric unit in a district hospital, Hobigonj, Bangladesh during the period from February 2022 to August 2022. We recorded patient's demographics, postoperative pain orders, and analgesia regime on the day of surgery. Anesthesia team, which included one of the investigators, assessed the overall pain since the time of surgery by visual analogue scale (VAS) and also recorded any complications since the time of surgery and patients' satisfaction with the pain management. A total of 150 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 89.7%, 4 and 6 in 9.5%, and 7 and 10 in 0.8% of patients. The VAS on movement was 1–3 in 60.1%, 4–6 in 33.1%, and 7–10 in 6.8% of patients. Patients' opinion regarding postoperative pain management was satisfactory in 76.60% of patients and unsatisfactory in 23.40% of patients. In the conclusion, we can say, the regime for postoperative pain management was mostly started and followed by both the teams at the hospital and was not adequately satisfied.

Keywords: Cesarean section, postoperative pain assessment, visual analogue scale.

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 post-operative pain relief. It is not surprising; therefore, that what patients often fear most about a surgical procedure is the pain they will experience afterward. Most people suffer from post-operative pain of varying intensity that undergoes operation. Inadequate treatment of pain causes needless suffering and may develop complications. John J. Bonica again said that, "Inadequate or improper application of knowledge and therapies currently available is certainly one of the most important factors resulting in inadequate relief of pain." The goal for 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.1 in the final analysis the ultimate determinant of the adequacy of pain relief will be the patient's own perception of pain. 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. Cesarean delivery 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. Moreover, these women want to be alert and energetic enough to care for, interact with, and breastfeed their newborn. The aim of our study was to observe the pain management strategy used in our hospital for elective cesarean section patients. In our observations, we reviewed broad areas of 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.

OBJECTIVES

1. **General Objective**
   a) To assess the strategy, effectiveness, and safety of postoperative pain management in patients undergoing cesarean section in the obstetric unit.

2. **Specific Objectives**
   a) To know more about post-operative pain management scenario in private clinics, Bangladesh.
   b) To know more about analgesics used in Private clinics, Bangladesh.

MATERIALS AND METHODS

An observational study was conducted to assess the strategy, effectiveness, and safety of postoperative pain management in patients undergoing cesarean section in the obstetric unit in a district hospital, Hobigonj, Bangladesh during the period from February 2022 to August 2022. On the day of surgery, data entered in the predesigned questionnaire included patients' names, hospital numbers, the technique of 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 the different position was made, and 95% confidence interval for the patient satisfaction was also computed.

RESULTS

One hundred and fifty patients had an elective cesarean section during one (1) year study period. The postoperative analgesia regime was started by the obstetric team in 81% of patients and in rest by the anesthesia team. The follow-up of these patients for the pain management was done by obstetric team in 94% and rest by the acute pain management service (APMS).

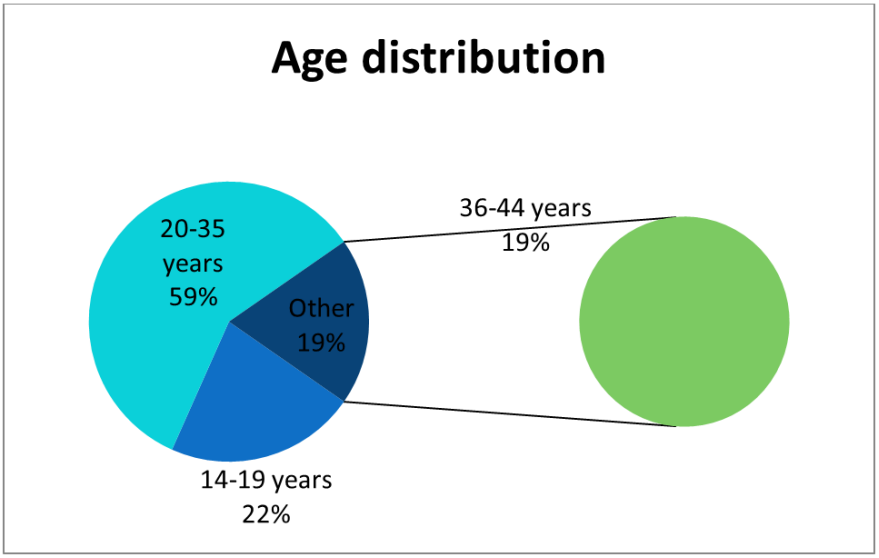

Figure 1: Age distribution of study participants (n=150)

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

Table1: Socioeconomic and demographic characteristics of post-cesarean section women in Private clinics

Variables		
	Frequency	**Percent (%)**
Age		
14-19 years	33	22.00
20-35 years	88	58.66
36-44 years	29	19.33
Years of education		
Service	22	14.66
Unemployed	128	85.33
Socioeconomic Class		
Poor	59	39.33
Middle class	69	46.00
Wealthy	22	14.66

Table shows that 85.33% study participants are unemployed and the poor class was 39.33 participants.

Table 2: Characteristics of postoperative pain among post-cesarean section women in the clinics

Variables	Post-cesarean section women	
	Frequency	**Percent**
Pain at surgical site		
Yes	44	29.33
No	106	70.66
Pain Intensity		
Mild	21	47.72
Moderate	19	43.18
Severe	4	9.09
Moment when feeling pain		
Movement	29	65.90
Rest Always	15	34.09

29.33% percent women suffered Pain at surgical site. Among them severe pain was 9% and mild and moderate were 48 and 43 % respectively. 66 % can move with moderate pain and the remaining are always rest.

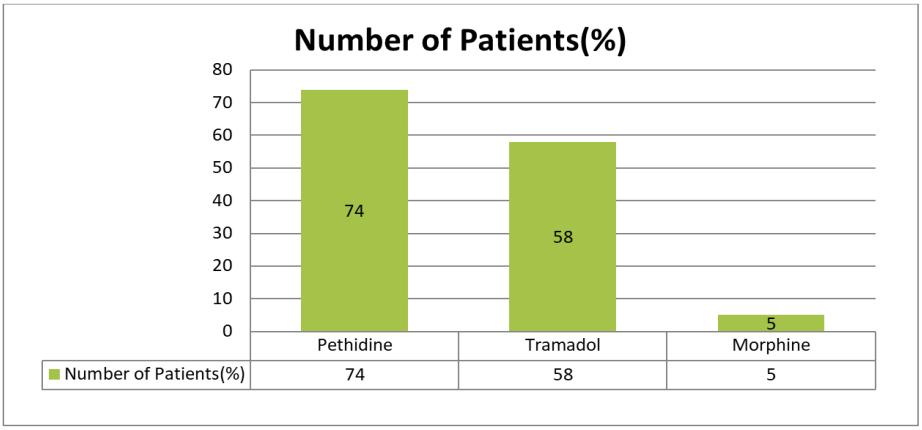

Figure 2: Percentage of patients receiving different types of opioid as intravenous infusion (*n* = 150)

Figure shows 74 percent of the study participants had taken Pethidine and 58% and 5% taken Tramadol and Morphine respectively.

Table 3: Percentages of patients receiving different types of co-analgesia medications (*n* = 150)

Co analgesia used	Frequency	Number of patients (%)
Dicofenac sodium (100 mg suppository)	112	74.50
Tablet paracitamol (1 g)	7	5.50
Both (tablet and Suoousitory)	31	21.00

Table shows 74.50 % study participants used Dicofenac sodium (100 mg suppository) as a co-analgesia and 5.5 only used Tablet paracitamol (1 g) as a co-analgesia. However, 21% participants used both.

Table 4: Distribution of satisfaction level of the study participants (n=150)

Variables	Satisfaction level	
	Frequency	Percent
Highly satisfied	32	21.33
Satisfied	69	46.00
No Satisfaction	49	32.66

21.33% participants were highly satisfied. However, 33% were not satisfied with the post-operative pain management service. 46% participants were moderately satisfied.

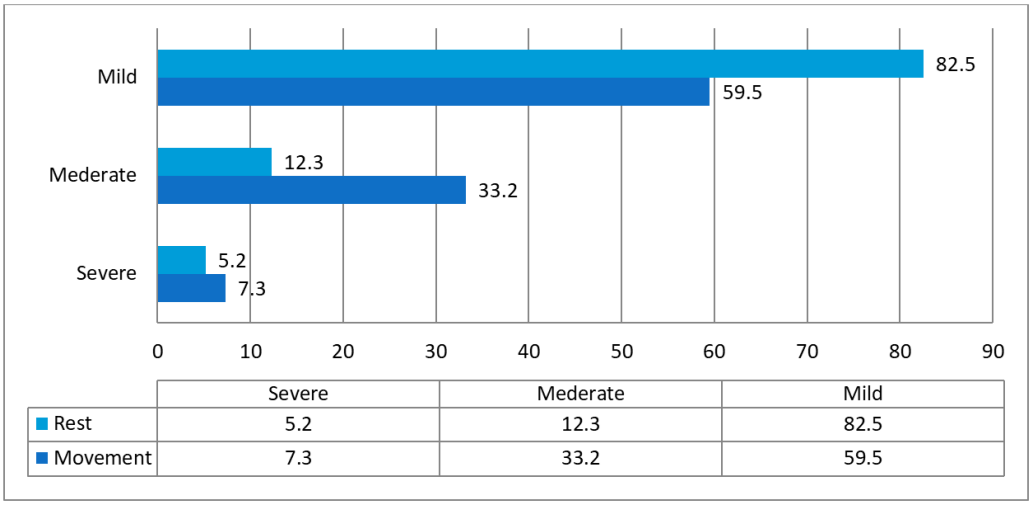

Figure 3: Percentage of patients having mild, moderate, and severe pain scores at rest and movement

Analysis of overall pain score since the time of surgery showed mild pain (VAS 0–3) in 82.5%, moderate pain (VAS 4–6) in 15.3%, and severe pain (VAS 7–10) in 2.2 % of patients at rest. On movement, pain score was mild in 59.5%, moderate in 33.2%, and severe in 3.3% of patients. Patients' opinion regarding their pain management was satisfactory for 46.00% (n = 150; 95% C.I.: 88.3%, 95.0%), while 32% (49) of patients were not satisfied. Out of 49 patients not satisfied with postoperative pain management, 26 (50%) had severe pain on movement, while 2 had severe pain at rest. Upon further look at the VAS scores for these patients, we found 1 patient with VAS of 10, 4 with VAS of 8, and 7 with VAS of 7 at movement. The patient who had VAS of 10 at movement was the only one with severe pain (VAS 8) at rest.

DISCUSSION

High-quality pain relief is important after cesarean section to promote early recovery and optimize mothers' ability to care for their newborns. Surveys have shown that parturients consider pain during and after cesarean section as their most important concern. Despite 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 [2]. Historically, surgeons have prescribed postoperative pain medications when writing general postoperative orders. Marks and Sachar noted that 73% of postoperative patients experienced distressing pain due to inadequate doses of analgesics prescribed at infrequent intervals by physicians [3]. Loper *et al.*, have demonstrated an inadequate knowledge of healthcare providers regarding analgesics leading to ineffective pain control [4]. 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 [5]. There is no "gold standard" for post-cesarean pain management. There are many options, the choice of which is at least partly determined by drug availability, regional and individual preferences, resource limitations, and financial considerations [6]. The issue of cost and availability of 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 [7]. The administration of epidural and intrathecal opioids is a popular means of augmenting intraoperative anesthesia and optimizing postoperative analgesia [8]. 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., fentany l 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 [9]. In contrast, the lower lipid solubility of morphine delays the onset of action and prolongs its duration, hence making it suitable for postoperative pain management. In developing countries, surgeon-prescribed, nurse-administered intermittent intramuscular administration of analgesics is the method used for postoperative pain management [10]. In our unit, an intravenous opioid infusion supplemented with anti-inflammatory analgesics is the most common type of postoperative management regime used. Pethidine was the drug of choice and was used in a fixed dose of 10 mg/h, irrespective of the weight and individual demand of the patient [11]. Described a regularly controlled infusion of pethidine at a rate of 0.3 mg/kg/h. Stapleton *et al.*, [12]. 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 hrs study period. Rutter *et al.*, [13]. In conclusion, our postoperative pain management was modernly adequate in terms of patients' safety but it was not fully satisfactory. To meet International Standards of Pain Management, an ideal post-cesarean analgesic regimen requires proper utilization of resources to formulate a method which is cost-effective, simple to implement, and has minimal impact on staff workload. We recommend expanding the services of acute pain service to develop nurse based; anesthesiologist 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, the 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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