



Description of Types of Drugs ERACS (Enhanced Recovery After Caesarea Section) Induction Medications In Patients After A Caesarean Section

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Introduction

Section caesarea delivery is a surgical process with the aim of delivering the fetus through an incision in the abdominal wall and uterine wall. The selection of the section caesarea method is based on medical indications, such as placenta previa, abnormal presentation or location of the fetus, and other things that can endanger the mother and fetus [1]

In addition to not feeling pain yet, mothers still need to take care of their incisions and need adequate rest after giving birth. Therefore, a solution is needed so that the mother can take maximum care of herself and her baby post-surgery. Currently, many obstetrics departments around the world are starting to implement or applying enhanced postoperative recovery ERACS to reduce

Abstract

Background: Today, cesarean sections are renowned for ERACS (Enhanced Recovery After Cesarean Surgery). Less discomfort and faster recovery make surgery more comfortable than older methods. **Purpose:** ERACS was adapted from ERAS (Enhanced Recovery After Surgery) for gastrointestinal surgery. It reduces hospital stay and post-surgery problems, enhancing patient satisfaction. In September 2023, this quantitative non-experimental descriptive survey included all adult patients getting general anesthesia and 70 respondents. **Methods:** This method collects data to evaluate theories about populations. This study describes ERACS induction and type medicines in post-caesarean section patients at Hermina General Hospital Yogyakarta. **Results:** 38 women aged 26–35 (54.3%) participated in this study. Based on other respondent traits. **Conclusion:** 37 respondents had blood pressure <130 and <90 mmHg, 40 had a pulse of 80-100x/min, 65 had spo2 >95%, 46 had ASA 1, and 100% used morphine and fentanyl at 0.1mg and 25mcg doses, respectively.

the length of hospitalization for elective caesarean sections [2]

This ERACS protocol aims to reduce morbidity and accelerate the healing process. This protocol allows patients to ambulate faster with minimal pain, which is approximately 2 hours after surgery (Sardimon et al., 2022). In addition, this ERACS protocol has the advantage of reducing the dose of anesthesia which aims to accelerate the body's metabolism and facilitate healing. fast, with a smaller needle to reduce the effects of injury from injections and with this ERACS method, pain relief can be better, surgery is faster, the fasting period is short and there is no need to spend a lot of money on hospitalization [3].

According to several studies, the recovery time of ERACS surgery can provide good results, namely shortening the total duration of postoperative care and improving patient recovery time or activity performance compared to recovery after surgery with conventional spinal anesthesia or general anesthesia. Comparing the duration of cesarean section with ERACS method, which is ≤ 2 days after delivery, and the duration of cesarean section with conventional spinal anesthesia method, which is 2 days after delivery. 3-5 days after delivery [4]. A study conducted found that the ERACS protocol can help reduce hospital length of stay (LOS) by 7.8 percent, or a total of 4.86 hours [5].

Preliminary studies conducted at Hermina General Hospital found that the ERACS method of delivery was introduced in September 2021 so that the demand for cesarean delivery using the ERACS method continues to increase with approximately 294 patients using the ERACS method. The drugs used in the ERACS method include opioid drugs such as fentanyl and morphine as additional injections, and additional drugs such as ondansetron, metoclopramide, and dexamethasone, which are designed to reduce the side effects of the opioid drugs used [6].

Based on the description above, the use of the Enhancing Recovery After Cesarean Surgery (ERACS) method in the recovery of post-cesarean section patients requires an explanation of the type of induction drug. Therefore, the researcher raised the title "Overview of Induction Drug Dosage Types with the ERACS (enhanced recovery after cesarean surgery) Sectio Cesarean Method in Post Sectio Cesarean Patients at Hermina General Hospital Yogyakarta".

Methods

This study applied an analytical correlation design on a cross sectional approach.

The population in the study were all post abdominal surgery patients totalling 50 Determination of the sample with total sampling of 50 patients. The study received Ethical Clearance with number. B.LPPM-UHB/27/01/2024

Results

Table .1. Frequency distribution of characteristics of post sectio caesarea patients at Hermina General Hospital Yogyakarta.

Age	Frequency	Presentation (%)
17-25 years old	23	32.9
Age 26-35 years	38	54.3
35-45 years old	9	12.9
Total	70	100

Based on table 1, it shows that on average most women are aged 17-25 years as many as 23 respondents (32.9%), then respondents aged 26-35 years as many as 38 respondents. (54.3%) and respondents aged 35-45 as many as 9 respondents (12.9%). Women aged less than 20 years usually have an

pulse	Freq uency	Presentation (%)
>100 x/min	38	54.3
80-100 x/min	21	30.0
<60 x/min	11	15.7
Total	70	100

immature psychological condition and poor financial capacity, while women over 35 years old tend to experience a decrease in reproductive ability (Siagian et al., 2021).

Table 2: Blood Pressure of pre sectio caesarea patients induced by ERACS method.

Blood pressure	Frequency	Presentation (%)
<90 and <55mmhg	40	57.1
<130 and <90 mmhg	20	28.6
>140 and >95 mmhg	10	14.3
Total	70	100

Table 2 shows that the average blood pressure in *pre sectio caesarea* patients with intervals <90 and <55 mmHg as many as 40 respondents (57.1%), at blood pressure <130 and <90 mmHg as many as 20 respondents (28.6%) and blood pressure >140 and >95 mmHg as many as 10 respondents' respondents (14.3%).

Table 3. Blood pressure of post sectio caesarea patients

Blood pressure	Frequency	Presentation (%)
<90 and <55 mmhg	11	15,7
<130 and <90 mmhg	37	52,9
>140 and >95 mmhg	22	31,4
Total	70	100

Based on table 3 shows that the average blood pressure in post sectio caesarea patients with intervals <90 and <55 mmHg as many as 11 respondents (15.7%), at blood pressure <130 mmHg and <90 mmHg as many as 37 respondents (52.9%) and blood pressure >140 and >95 mmHg 22 respondents (31.4%).

Table 4. Pulse Rate of *pre sectio caesarea* patients

Based on table 4. shows that the average pulse rate in pre sectio caesarea patients with ERACS method induction >100x/min was 38 respondents (54.3%), then 80-

100x/min was 21 respondents (30%), and <60x/min was 11 respondents (15.7%).

Table 5 Pulse Rate of post sectio caesarea patients

Nadi	Frequency	Presentation (%)
>100 x/min	21	30,0
80-100 x/min	40	57,1
<60 x/min	8	11,4
Total	70	100

Table 5 shows that the average pulse rate in post sectio caesarea patients with ERACS method induction was >100x/min as many as 21 respondents (30.0%), then 80- 100x/min as many as 40 respondents (57.1%), and pulse <60x/min as many as 8 respondents (11.4%).

Table 6. Spo2 of pre sectio caesarea patients

Spo2	Frequency	Presentation (%)
>95%	62	88.6
<95%	8	11.4
Total	70	100

Table 6 shows that the average Spo2 in pre sectio caesarea patients with ERACS method induction >95% as many as 62 respondents (88.6%) and <95% as many as 8 respondents (11.4%).

Table 7. Spo2 of post sectio caesarea patients

Spo2	Frequency	Presentation (%)
>95%	65	92,9
<95%	5	7,1
Total	70	100

Table 7 shows that the average Spo2 in post sectio caesarea patients with ERACS spo2 induction method >95% as many as 65 respondents (92.9%) and <95% as many as 5 respondents (7.1%).

Table 8. ASA in post sectio caesarea patients

ASA	Frequency	Presentation (%)
ASA 1	46	65.7
ASA 2	24	34.3
Total	70	100

Table 8 shows the average ASA in post sectio caesarea patients with ERACS method induction. ASA 1 as many as 46 respondents (65.7%) and ASA 2 as many as 24 respondents (34.3%).

Table 9 types of induction drugs used in post sectio caesarea patients.

Types of drug combinations	Frequency	Percentage (%)
Morphine and fentanyl	70	100
Total	70	100

Table 9 shows that the average use of morphine and fentanyl is 100% using a combination of morphine with a dose of 0.1mg and fentanyl with a drug dose of 25mcg. The use of morphine and fentanyl as additional narcotics during induction procedures is proven to reduce postoperative patient pain.

Discussions

Overview of Induction Drug Dosage Types with the ERACS (enhanced recovery after caesarean surgery) Sectio Caesarean Method

Based on the results of research at Hermina General Hospital conducted from September 2022 to January 2023 with data collection time in July to August 2023 with post sectio caesarea patients induced by the ERACS method. the following results were obtained Age is one of the benchmarks for a mother's readiness to give birth, where the ideal age for the process of pregnancy and childbirth is 20-35 years. Women under the age of 20 tend to have an immature psychological state

and weaker economic opportunities, while women over 35 tend to experience a decrease in reproductive efficiency (Siagian et al., 2021). The optimal reproductive age of a mother is 20-35 years, because at this age the uterus is ready to accept pregnancy, mentally mature and able to take care of children and herself. At the same time, those under 20 years of age and over 30 years of age increase the risk of pregnancy and childbirth (Anita, 2017). sectio caesarea at the age of 20-35 years can be caused by complications during childbirth, which can cause death or illness in the mother and child (Hijriani et al., 2020).

Hospital services are hospital services. Research Findings This is in accordance with research conducted by (Ripal et al., n.d.) on the description of pain levels in post-caesarean section patients who received morphine and fentanyl in the orchid room of Cibinong Hospital. The additional use of morphine and fentanyl has been shown to reduce pain during induction procedures in postoperative patients [7,8] Morphine is a powerful opioid pain reliever that can relieve severe pain that cannot be treated with non-opioid drugs. Morphine works by binding to and activating opioid receptors in the central nervous system, which increases the pain threshold and reduces postoperative pain. Due to its sedative properties, morphine is often used for pain relief during and after surgery [9].

Fentanyl directly affects the central nervous system by acting on opioid receptors. Fentanyl is available in parenteral, transdermal and transmucosal formulations, but only parenteral and transdermal formulations are available in Indonesia [10]. Consider the side effects of fentanyl, including respiratory depression and cardiac arrest, which can be fatal. Fentanyl has the greatest anesthetic effect, but less histamine release, direct cardiac depression and seizures. Fentanyl

depresses the respiratory center, suppresses the cough reflex and pupillary contraction, and slows the heart rate. At therapeutic doses, fentanyl has relatively little effect on the cardiovascular system. However, some patients experience orthostatic hypotension and syncope. Fentanyl works primarily as an agonist μ receptors. The cardiovascular system had no changes in heart muscle contraction or vascular muscle tone [11].

The results of this study are also in line with research conducted by Perioperative pain management is an important part of the ERACS protocol because extensive pain makes it difficult for mothers to care for their babies, delays early mobilization, and causes anxiety and depression. Multimodal perioperative pain management includes various techniques and medications that should be used to reduce pain, improve recovery, and reduce opioid use. Long-acting neuraxial opioids (morphine) are the best standard drug for pain relief during and after cesarean section, but are associated with several side effects, including pruritus, nausea, and respiratory depression (Snyder, 2019). Evidence suggests that approximately 50% of women experience neuraxial morphine after administration of mild respiratory depression.

Anesthesiologists seek to optimize pain management and ensure effective pain control for patients while limiting opioid use to avoid potential opioid overexposure [12]

Limitation

This research is limited to data treatment data, constraints in the data collection process, such as the time of conducting this research only on patients of Hermina General Hospital Yogyakarta so that data collection becomes increasingly inaccurate and waves of monitor saturation and patient conditions change. patients who

were uncooperative at the time, data collection due to excessive anxiety.

This research is cross sectional, which is only studied in one limited time and only to prove the conditions that occur at the time of the study and changes that may have occurred and will occur cannot be observed [13–15]. This study is cross-sectional in nature, i.e. it is studied only in a limited period of time and only shows the conditions that exist at the time of the study and changes that may have occurred and are happening cannot be observed. This study can be further expanded by replacing the sample with all patients who gave birth by caesarean section in the city of Yogyakarta, so that patients who gave birth at maternity clinics can also be sampled.

Conclusions

The characteristics of respondents based on the type of post sectio caesarea induction drugs induced by the ERACS method show that the average use of morphine and fentanyl is 100% using a combination of morphine with a dose of 0.1mg and fentanyl with a drug dose of 25mcg.

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