



Comparison of Pain Scale and Duration of Early Mobilization after Cesarean Section Surgery Using Eracs Tap Block Method with Eracs without Tap Block

Boyke Marthin Simbolon¹, Tissa Priscillya Deabitha Br Siburian¹, Muhammad Chairul Sp. Bs¹

¹Faculty of Medicine, Dentistry, and Health Sciences,
Universitas Prima Indonesia, Medan

*Corresponding Author: Boyke Marthin Simbolon

E-mail: boykemarthins@yahoo.com



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Abstract

One of the problems for pregnant women is dealing with pain and recovering quickly after surgery. This research focuses on observing pregnant women after surgery to compare the pain scale and duration of early post-operative mobilization using ERACS tap blocks and ERACS without tap blocks. This quantitative research was designed using a cross-sectional approach. The research sample was 40 respondents selected by purposive sampling. The pain scale was measured using the Visual Analog Scale (VAS) and Early Mobilization was measured using an observation sheet. Based on the results of statistical analysis. The *p* value in the results of the Mann-Whitney test analysis on the pain scale for both variables is VAS5 (24 hours) which has a *p* value of 0.028 which is lower than 0.05. Early mobilization shows that catheter removal has a *p* value of 0.002, lower than 0.05. It can be concluded that there is a significant difference between the pain scale and the duration of early mobilization using ERACS tap block and ERACS without tap block.

Introduction

Section Caesarea is one of the delivery procedures performed surgically to deliver a baby through an incision in the abdomen (laparotomy) and uterus (hysterotomy) or abdominal wall and uterine wall. The SC method can be performed if there are medical indications from both the mother and the baby or both, for example such as normal labor that does not progress, large fetuses, fetal distress, placenta previa, inappropriate position of the baby, and other medical indications that can endanger the lives of both mother and baby (Leveno et al., 2018; Siagian et al., 2023; SAPUTRI, 2023; Malika & Arsanah, 2024).

Caesarean section has two anesthesia techniques, namely, Regional Anesthesia and General Anesthesia. Regional anesthesia is a local anesthetic that is given by blocking peripheral nerves which has the aim of relieving pain and pain in large parts of the body such as the arms, legs or abdomen, and regional anesthesia is divided into two parts, namely spinal (subaracnoid) and epidural (extradural) anesthesia where local anesthesia will be given close to the spinal cord in order to block pain from all areas of the body such as the lower abdomen, hips or legs (Shbeer, 2022; Ashwini, 2009). Meanwhile, general anesthesia or general anesthesia is a medical procedure that makes the patient unconscious or does not feel pain during major surgery, general anesthesia works by blocking sensory signals from the nerves of the procedure site to the brain center, general anesthesia procedures usually use intravenous (IV) anesthesia and inhalation anesthesia. (Smith et al., 2023; SANGER, 2019; Wiryana et al., 2023).

SC surgery in general often uses a type of subarachnoid block anesthesia which is a type of anesthesia that is comfortable and good for pregnant women who will undergo a cesarean delivery process (Kassa et al., 2020). Operations using spinal anesthesia have increased, because it is found to be comfortable when undergoing postoperative recovery, but there are also side effects caused by postoperative pain that is very long, resulting in longer recovery of post-cesarean section patients, and other side effects caused by spinal anesthesia, namely nausea, vomiting, hypotension, postoperative dizziness.

So that recently a new method has been popular in cesarean section to reduce pain and accelerate early postoperative mobilization, which is currently developing is the ERACS (Enhanced Recovery After Cesarean Surgery) method, which is a rapid recovery program after cesarean section starting from a series of treatments such as preoperative preparation, during surgery, and recovery after surgery until the patient is declared fit to return home by the doctor. The concept of the ERACS method was originally derived from Enhanced Recovery After Surgery (ERAS) which aims to reduce the surgical stress response, increase recovery, accelerate recovery as early as 24 hours after surgery (Teigen et al., 2020; SALINDRI, 2023).

Based on the results of research data searches, researchers provide examples through journal data that has been researched by “Liana Sidharti”, namely those related to ERACS published in 2023, it was found that most of the data of respondents who had performed cesarean section with the ERACS method did not feel pain (62.7%), experienced nausea and vomiting (70.6%), early mobilization (88.2%) (Sidharti et al., 2023).

After having a caesarean section, mothers feel somatic pain from the abdominal wall incision, and visceral pain caused by the uterus. Discomfort often originates from the abdominal wall (somatic pain). So currently, a new technique is developed, namely an anesthesia technique using the transversus abdominis plane block (TAP BLOCK) method, which is a regional anesthesia technique that involves injecting local anesthetics into the transversus abdominis (TA) plane by blocking the afferent nerves in the abdominal wall of the anterior branch between the T6-L2 nerves, with the provision of a multimodal analgesia regimen, the best among non-opioid techniques so as to relieve pain and pain due to post-cesarean section incision (Wayan et al., n.d.). TAP block is increasingly used in cesarean section because of its good analgesic effect on the abdominal wall, simple operation and high safety (Salem et al., 2021; D’Mello, 2019). The purpose of this study was to understand the comparison of pain scale and duration of early mobilization after cesarean section using ERACS TAP Block with ERACS without TAP Block.

Methods

This study is an observational analytic research design with a cross sectional approach. The data that will be collected will be analyzed using statistical methods, namely SPSS, which aims to see the relationship between the two comparisons of ERACS TAP Block with ERACS without TAP Block. All patient data that meet the criteria will be included in the study using purposive sampling method. The observation sheet will assess the pain scale and early mobilization of eracs tap block with eracs without tap block after that, the collected data will be analyzed using spss. This entire study will be conducted in accordance with research ethics and each participant must obtain clear permission from the institution. The study will be conducted at SARAH Medan General Hospital (RSU) and Royal Prima Marelán Hospital in the period of May - August 2024. The population in this study are pregnant women who will give birth at RSU Sarah Medan and RSU Royal Prima Marelán in the period May - August 2024. The samples of this study were pregnant women doing sectio caesarea with ERACS TAP Block method and ERACS without TAP block at RSU Sarah Medan and RSU Royal Prima Marelán in the period of May - August 2024 meeting other inclusion criteria, The number of pregnant women giving birth by sectio caesarea was 40 people.

Result and Discussion

Characteristics of Respondents Univariate Analysis

Univariate analysis was conducted to determine the frequency of respondents based on the distribution of pain scales and the duration of early mobilization in eracs and eracs tap blocks presented in table 5.

Table 1. Frequency Distribution of Respondents Based on Eracs Pain Scale and Eracs Tap Block

Metode	Painful									
	VAS1 (2 Clock)		VAS2 (4 Clock)		VAS3 (6 Clock)		VAS4 (12 Clock)		VAS24 (24 Clock)	
ERACS	f	%	f	%	f	%	f	%	f	%
No Pain	12	60	6	30	1	5	3	15	4	20
Light	8	40	13	65	12	60	14	70	15	75
Bother			1	5	7	35	3	15	1	5
ERACS TAP BLOK	f	%	f	%	f	%	f	%	f	%
No Pain	13	65	7	35	2	10	6	30	10	50
Light	7	35	12	60	13	65	12	60	10	50
Bother			1	5	5	25	2	10		

Based on table 1. It can be seen that the results of the analysis show the frequency distribution of respondents' pain in the eracs tap block group with eracs observed based on VAS every 2 hours has a pain level in respondents who feel mild pain as many as 8 respondents (40%) in the eracs method, 7 respondents (35%) eracs tap block, no pain is 12 respondents (60%) eracs, 13 respondents (65%) eracs tap block at 4 hours postoperatively who felt no pain as many as 6 respondents (30%), mild 13 respondents (65%), disturbing 1 respondent (5%) on eracs, while on eracs tap block who felt no pain as many as 7 respondents (35%), mild 12 respondents (60%), disturbing 1 respondent (5%), then at 6 hours observed pain who felt no pain.

1 respondent (5%), mild 12 respondents (60%), disturbing 7 respondents (35%) in eracs, in the eracs tap block method who felt no pain 2 respondents (10%), mild 13 respondents (65%), disturbing 5 respondents (25%), at 12 hours who felt no pain 3 respondents (15%), mild 14 respondents (70%), disturbing 3 respondents (15%) in the eracs method, while in the eracs tap block method who felt no pain were 6 respondents (30%), mild 12 respondents (60%), disturbing 2 (10%), in the last observation after 24 hours who felt no pain 4 respondents (20%), mild 15 respondents (75%), disturbing 1 respondent (5%) in the eracs method, while in the eracs tap block method who felt no pain 10 respondents (50%), and mild 10 respondents (50%).

Table 2. Frequency Distribution of Respondents Based on Eracs Early Mobilization and Eracs Tap Block

Metods	Early Mobilization													
	MOB1		MOB2		MOB3		MOB4		MOB5		MOB6		MOB7	
ERACS	f	%	f	%	f	%	F	%	f	%	f	%	f	%
4 Clock	20	100	8	40	10	50								
6 Clock			12	60	10	50	10	50						
8 Clock							10	50	9	45				
10 Clock									11	55	11	55		
12 Clock											9	45	20	100
ERACS TAP BLOK	f	%	f	%	f	%	F	%	f	%	F	%	f	%
4 Clock	20	100			10	50	1	5						
6 Clock			20	100	10	50	11	55						

8 Clock							8	40	11	55				
10 Clock									9	45	12	60		
12 Clock											8	40	20	100

Based on table 2 The results of the analysis show the frequency distribution of early mobilization observed based on how long the respondents can carry out activities on eracs with eracs tap blocks, such as in MOB1 Eracs 20 respondents (100%), Eracs Tap Blok 20 respondents (100%) can lift their legs at 4 hours postoperatively, MOB2 Eracs there are 8 respondents (40%) 4 hours postoperatively, 12 respondents (60%) 6 hours postoperatively can do catheter removal, Eracs Tap Blok can do catheter removal at 6 hours postoperatively as many as 20 respondents (100%), MOB3 Eracs and Eracs Tap Blok can do right-left tilt activities at 4 hours 20 respondents (50%), 6 hours 20 respondents (50%), then MOB4 sitting activities on Eracs 10 respondents (50%) can do after 6 hours postoperatively and there are 10 respondents (50%) 8 hours postoperatively, while on Eracs Tap Blok there is 1 respondent (5%) 4 hours postoperatively, 11 respondents (55%) 6 hours postoperatively, 8 respondents (40%) at 8 hours postoperatively, MOB5 can perform sitting to standing activities in the Eracs method there are 9 respondents (45%) 8 hours postoperative, 11 respondents (55%) 10 hours postoperative, while in Eracs Tap Blok there are 11 respondents (55%) 8 hours postoperative, 9 respondents (45%) 10 hours postoperative, MOB6 who can perform standing to walking activities in the Eracs method there are 11 respondents (55%) 10 hours postoperatively, 9 respondents (45%) 12 hours postoperatively, in Eracs Tap Blok there are 12 respondents (60%) 10 hours postoperatively, 8 respondents (40%) 12 hours, then in MOB7 who can perform postoperative bathing activities Eracs and Eracs Tap Blok there are 40 respondents (100%).

Normality Test

After the data has been collected, a normality test can be carried out to determine whether the data distribution is normally distributed or not. The normality test was carried out using the shapiro-wilk method because the number of samples was less than 50. The basis for making decisions by looking at the value of the results if Asymp. Sig (p) > 0.05 then the data distribution is normally distributed.

Table 3. Normality Test of Pain Scale in Eracs and Eracs Tap Block

Shapiro-Wilk			
VAS	Painful	Statistic	Nilai p
VAS1 (2 jam)	No pain	0,639	0,000
	Light	0,643	0,000
VAS2 (4 jam)	No pain	0,650	< 0,001
	Light	0,639	< 0,001
	Bother	0,750	0,000
VAS3 (6 jam)	No pain	0,750	0,000
	Light	0,639	< 0,001
	Bother	0,640	< 0,001
VAS4 (12 jam)	No pain	0,617	< 0,001
	Light	0,637	< 0,001
	Bother	0,684	0,006
VAS5 (24 jam)	No pain	0,576	< 0,001
	Light	0,625	< 0,001

Table 4. Normality Test of Early Mobilization in Eracs and Eracs Tap Block

Shapiro-Wilk			
Mobilization	Time	Statistic	P-Value
Lifting Legs	4 hours	0.637	< 0.001

Removing Catheter	6 hours	0.615	< 0.001
Turning Side to Side	4 hours	0.641	< 0.001
	6 hours	0.641	< 0.001
Sitting	6 hours	0.640	< 0.001
	8 hours	0.638	< 0.001
Sitting to Standing	8 hours	0.637	< 0.001
	10 hours	0.637	< 0.001
Standing to Walking	10 hours	0.639	< 0.001
	12 hours	0.642	< 0.001
Bathing	12 hours	0.637	< 0.001

Based on tables 3 and 4, a normality test using shapiro-wilk has been carried out on the variable pain scale and early mobilization in the eracs method with eracs tap blocks, it can be seen that the significant value is <0.001. It can be concluded that the data in this study are not normally distributed because the p value <0.05, therefore, further tests are needed using non-parametric using the Mann-Whitney test.

Comparison of Pain Scale and Early Mobilization Using Eracs Tap Block Method with Eracs

Table 5. Mann-Whitney Test of Pain Scale between Eracs Tap Block and Eracs

	VAS2	VAS4	VAS6	VAS12	VAS24
Z	-.322	-.222	-.808	-1.090	-2.199
Asymp. Sig. (2-tailed)	.747	.824	.419	.276	.028

Table 6. Mann-Whitney Test of Early Mobilization between Eracs Tap Block and Eracs

	Lifting Legs	Removing Catheter	Turning Right and Left	Sitting	Sitting to Standing	Standing to Walking	Bathing
Z	.000	-3.122	.000	-.773	-.624	-.316	.000
Asymp. Sig. (2-tailed)	1.000	.002	1.000	.439	.532	.752	1.000

Based on table 5 and table 6 after the Mann-Whitney test (U value) which aims to show the comparison between the two groups, the lower the U value, the greater the difference between groups. Z is a standardized statistical test where the Z value shows how far the U value is observed, a negative value indicates that the ranking of the first group is lower than the second. Asymp. Sig (2-tailed) or p-value that the distribution of the two groups should be $p < 0.05$ indicates a significant difference between the two groups. Table 9 shows that VAS5 (24 hours) has a p value of 0.028 which is lower than 0.05 indicating that there is a significant difference, while for VAS1 (2 hours), VAS2 (4 hours), VAS3 (6 hours), VAS4 (12 hours) with a p value > 0.05 means that there is no significant difference between the two groups. The p-value table data that catheter removal has a p value of 0.002 is lower than 0.05 indicating a significant difference while for lifting legs, tilting right and left, sitting, sitting to standing, standing to walking, and bathing has a p value > 0.05 which means there is no significant difference between the two groups on this variable.

The results of the discussion of pain scale research and the duration of early mobilization of patients using Eracs and Eracs Tap Blok, there is a comparison of the frequency distribution of the most pain scales in Eracs from the level of pain, namely no pain at VAS1 (2 hours) as many as 12 respondents (60%), mild VAS5 (24 hours) as many as 15 respondents (75%). and a disturbing feeling at VAS3 (6 hours) as many as 7 respondents (35%), Whereas in Eracs Tap Blocks who felt the level of no pain at VAS1 (2 hours) as many as 13 respondents (65%), mild

pain at VAS3 (6 hours) 13 respondents (65%), and disturbing pain as many as 13 respondents (65%). Early mobilization after cesarean section experiences rapid recovery so that it can carry out activities such as lifting legs, removing catheters, tilting right-left, sitting, standing, walking and bathing. In the results of the nonparametric test using the Mann-Whitney test, it was found that VAS5 (24 hours) had a p value = 0.028 which means lower than 0.05 which indicates that there is a significant difference in pain scale observations. In the observation of pain scale comparisons, respondents who used the ERACS TAP block method experienced a lower pain scale compared to patients who underwent the ERACS method without TAP block. In the early postoperative hours (for example, 6-12 hours postoperatively), respondents who used the TAP block method experienced a significant decrease in pain levels as measured by the Visual Analog Scale (VAS). While early mobilization obtained the results of the p value (p-value) on catheter removal has a p value = 0.002 lower than 0.05, indicating a significant difference, on the pain scale and early mobilization each respondent has a different feeling, some respondents experience nausea vomiting, postoperative hypotension but for early mobilization, respondents experience rapid recovery within 24 hours postoperatively. Early mobilization is faster in respondents who receive TAP blocks than patients who do not receive TAP blocks..

Conclusion

There was no significant difference in pain scale and early mobilization between eracs and eracs tap block methods. Pain in eracs tap block was much less than eracs at 24 hours postoperative observation measured using visual analog scale (VAS). Early mobilization on eracs tap block was faster, more comfortable, than eracs in the first 24 hours postoperatively.

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