

Correlation Of Age And BMI With The Incident Of Nausea And Vomiting In Patients Post Sectio Caesarian Operation With Spinal Anesthesia In Aliyah Hospital 2

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ABSTRACT

Background. Postoperative nausea and vomiting are one of the complications experienced by patients with anesthesia and surgery. There are many factors that influence this occurrence, including age and BMI, where young age and obese BMI tend to experience postoperative nausea and vomiting. This is based on the fact that older age is easier to control nausea and vomiting than young people and obese BMI has more fat tissue to store anesthetic drugs so that the side effects of drugs can last longer. **Method.** This study used an observational analytic method with a cross sectional approach carried out at Aliyah Hospital 2. The number of samples in this study were 38 people who were taken using total sampling technique. Data collection was obtained from filling in the observation sheet and then the data was analyzed using the Fisher's Exact Test statistical test. The dependent variable in this study was postoperative nausea and vomiting and the independent variables were age and BMI. **Results.** The results of this study found that age did not have a significant relationship with the incidence of postoperative nausea and vomiting at Aliyah Hospital 2 ($p = 0.298$) and BMI had a significant relationship with the incidence of postoperative nausea and vomiting at Aliyah Hospital 2 ($p = 0.019$). **Conclusion.** From this study it can be concluded that the incidence of postoperative nausea and vomiting after spinal anesthesia is higher in patients with older age and excessive BMI.

Keywords: age, body mass index, postoperative nausea and vomiting, spinal anesthesia

INTRODUCTION

Sectio caesarea (SC) is an artificial birth, in which the fetus is born through an incision in the abdominal wall and uterus with the condition that the uterus is intact and the fetus weighs above 500 grams (Wiknjastro, 2016). In 2014, the proportion of births by SC method in poor countries was 6.1%, while developing countries and developed countries had a larger proportion, namely 20.9% and 27.2% (Betran, et al., 2016). The 2018 Riskesdas data in Indonesia shows that the delivery rate reaches 78.73% of the birth rate cesarean section as much as 17.6% (Riskesdas, 2018).

Action of anesthesia is an attempt to relieve pain with certain techniques

used in surgery. One type is spinal anesthesia which is recommended as a way to relieve pain during surgery because the process is fast, comfortable during surgery and has good quality postoperative analgesia and minimal side effects (Pratama, et al., 2020).

The working principle of spinal anesthesia is by injecting local anesthetic drugs into the subarachnoid space so that they mix with cerebrospinal fluid (LCS) or cerebrospinal fluid (CSS) to obtain analgesia at the level of a certain dermatome and the absence of impulse conduction to both the central and peripheral nerves (Butterworth, 2013). The advantages of spinal anesthesia are the ease of action, equipment and side effects are

minimal, patients remain conscious during surgery and require treatment postoperative and minimal analgesia (Chekol, et al., 2021). The most common complications experienced by patients related to anesthesia and surgery are postoperative nausea and vomiting. These complications are very bothersome, and highly preventable. Postoperative nausea and vomiting is defined as nausea and/or vomiting occurring within 24 hours after surgery (Ali, 2010). Types of surgery that are at high risk of postoperative nausea and vomiting include plastic surgery, abdominal surgery and orthopedic surgery (Irawan, et al., 2013).

The occurrence of postoperative nausea and vomiting if left untreated may lead to dehydration, electrolyte disturbances, longer hospital stay, sutures of the surgical wound becoming tense, and the possibility of dehydration, hypertension, increased bleeding under the skin, increased risk of pulmonary aspiration due to reflex, airway, and ulceration of the gastric mucosa occurs (Ali, 2010).

More than 40 million patients undergo surgery in the United States and more than 100,000 (about 30%) patients experience postoperative nausea and vomiting (Gan, et al, 2014). A study in Muhammadiyah Lamongan Hospital reported the incidence of postoperative nausea and vomiting in 68 patients (12%) of all postoperative patients in 2010 (Tewu, 2015). Karnina and Putri's research (2020) which was conducted at Ulin Banjarmasin Hospital also found that out of 149 patients, 28 patients (30.2%) experienced postoperative nausea and vomiting (Karnina and Putri, 2020).

Many factors are thought to influence the incidence of postoperative nausea and vomiting including patient factors (age, sex, body mass index and length of operation), and anesthetic factors (premedication, type of anesthesia, etc.) (Zainumi, et al., 2010). Patients with higher BMI have a higher risk of postoperative nausea and vomiting. Obese patients are 60% more prone to postoperative nausea and vomiting due to excessive adipose (fat content) resulting in storage of anesthetic drugs or excessive production of estrogen by fibrous tissue (Qudsi & Jatmiko, 2016). This is supported by Lekatompesy's research (2022), in his research which said that the percentage of postoperative nausea and vomiting increased at a younger age. From the many variations of research results on the relationship between age and BMI with the incidence of nausea and vomiting, the researchers wanted to conduct a study on the relationship between age and BMI with the incidence of nausea and vomiting in postoperative patients cesarean section with spinal anesthesia at Aliyah 2 Hospital.

METHODS

This is observational analytic research using a systematic approach cross sectional to determine the relationship between age and BMI with the incidence of nausea and vomiting in postoperative patients cesarean section with spinal anesthesia at Aliyah 2 Hospital. The research will be conducted at Aliyah 2 Hospital in August-September 2022.

The population in this study were all respondents who underwent surgery cesarean section with spinal anesthesia at Aliyah 2 Hospital in August-September 2022. The sample for this study were respondents who underwent surgery with spinal anesthesia at Aliyah 2 Hospital. The sampling technique in this study was total sampling. Total sampling is a sampling technique where the number of samples is equal to the number of population.

Data analysis was performed using univariate and bivariate analysis. The statistical test used in this study is Fisher Exact Test.

RESULTS

Table 1 shows distribution characteristics respondent based on age, the most respondents were aged ≥ 25 years, namely 28 (73.7%) respondents and the lowest was age <25 years, namely 10 (26.3%) respondents. Distribution characteristics respondents based on BMI shows that there are 27 (29.0%) respondents in the obese category and patients who are not categorized as obese are 11 (71.0%) respondents. Based on table 2, the distribution of respondents based on the incidence of postoperative nausea and vomiting shows that 5 (13.2%) respondents experienced postoperative nausea and vomiting, while 33 (86.8%) respondents did not experience postoperative nausea and vomiting.

DISCUSSION

Based on sample which obtained at Aliyah 2 Kendari Hospital found that the number of operations

cesarean section with spinal anesthesia from August–September 2022 there were 38 patients who met the inclusion and exclusion criteria. Of the 38 total samples that had passed the research procedure stage which referred to theory and previous studies, it was found that 5 experienced postoperative nausea and vomiting and 33 did not experience postoperative nausea and vomiting, 5 of these samples were eligible to be used as test samples. Based on the results of the study showed that there was no relationship between age ($p > 0.05$) and the incidence of postoperative nausea and vomiting in patient section cesarean section with spinal anesthesia at Aliyah 2 Hospital and there was a relationship between BMI ($p < 0.05$) and the incidence of postoperative nausea and vomiting in patients cesarean section with spinal anesthesia at Aliyah 2 Hospital.

Relationship between Age and Postoperative Nausea Vomiting at Aliyah Hospital 2

Based on table 3, it shows that respondents in the at-risk age category experience nausea and vomiting after operation as many as 0 respondents and who did not experience postoperative nausea and vomiting as many as 10 respondents. While the non-risk age category who experienced postoperative nausea and vomiting were 5 respondents and those who did not experience postoperative nausea and vomiting were 23 respondents. Based on test results Fisher's Exact Test obtained p value = 0.298. The p value > 0.05 indicates that H_0 is accepted and H_a is rejected. So it

can be concluded that there is no relationship between age and the incidence of postoperative nausea and vomiting in patients caesarean section with spinal anesthesia at Aliyah 2 Hospital, Kendari City.

In this study, the age of the most respondents who experienced postoperative nausea and vomiting was aged ≥ 25 years. The results of this study are in line with research conducted by Karnina (2020) with the results of a study of 149 patients who experienced postoperative nausea and vomiting, namely in the age group 25-39 years there were 18 patients and in the age group 18-24 years there was 1 patient. The results of research from Ching, et al (2022) also found that out of 30 patients who experienced postoperative nausea and vomiting, there were 29 people aged over 25 years. This is different from the results of other studies which say that the most age group experiencing postoperative nausea and vomiting is the age of 18-24 years (Ikshan, 2018).

In the results of data analysis it was found that there was no correlation between the age of the respondent and the incidence of postoperative nausea and vomiting. This is also in line with the research by Karnina (2020), Ching (2022), and Sholiha (2016) that there was no relationship between age and the incidence of postoperative nausea and vomiting.

The results of data analysis in this study are not in line with research conducted by Lekatompessy (2022) which shows that there is a relationship between age and the incidence of postoperative nausea and vomiting.

Research Ikshan, et al. (2018) also showed that there was a relationship between age and the incidence of postoperative nausea and vomiting. In a study conducted by Apfel et al, (2012) found that the incidence of postoperative nausea and vomiting generally decreased with age. The mechanism that causes this is a decline in autonomic reflexes with age. Lekatompessy (2022) also stated that the incidence of postoperative nausea and vomiting is more common at a young age. This is possible because older patients control nausea and vomiting more easily than younger patients. However, the relationship between the incidence of postoperative nausea and vomiting with age is still very difficult to explain. This is due to the presence of other uncontrolled risk factors when conducting research such as anesthetic drugs and length of surgery and other risk factors.

Relationship between BMI and Postoperative Nausea Vomiting

Based on table 4, it shows that there were 4 respondents in the obese category who experienced postoperative nausea and vomiting and 7 respondents did not experience postoperative nausea and vomiting. One respondent who was not obese, experienced postoperative nausea and vomiting and 26 respondents did not experience postoperative nausea and vomiting. Based on test results Fisher's Exact Test obtained p value = 0.019. So it can be concluded that there is a relationship between BMI and the incidence of postoperative nausea and vomiting in patients caesarean section with spinal anesthesia.

The results of this study are in line with Kim's research (2020) which reported that obese patients have a significantly higher incidence of nausea and vomiting because obese patients have larger fat reserves. Research in Germany states that obese BMI are more at risk of experiencing postoperative nausea and vomiting. Obese patients are associated with more fat reservoirs so that exposure to anesthesia becomes longer (Seyni Boureima, et al. 2022).

CONCLUSION

Based on the results of the previous research and discussion, it was concluded that there was no relationship between age and the incidence of postoperative nausea and vomiting cesarean section with spinal anesthesia at Aliyah 2 Hospital and there is a relationship between BMI and the incidence of postoperative nausea and vomiting cesarean section with spinal anesthesia at Aliyah Hospital 2.

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Table 1. Characteristics of respondents Based on Age and BMI of Patient Sectio Caesarea

Characteristics	Sum (n)	Percentage (%)
Age		
≥ 25 years old	28	73,7
< 25 years old	10	26,3
Body Mass Index		
Obese	11	29,0
Not Obese	27	71,0

Table 2. Characteristics of respondents Based on incidence of postoperative nausea and vomiting of Patient

Characteristics	Sum (n)	Percentage (%)
Nausea and vomiting		
yes	5	13,2
No	33	86,8

Table 3. Analysis of relationship between age and the incidence of postoperative nausea and vomiting of Patient Sectio Caesarea

Age	postoperative nausea and vomiting				Sum	<i>p</i> value	
	Percentage (%)						
	Yes		No				
n	%	n	%	n	%		
≥ 25 years old	0	0,0	10	26,3	10	26,3	0,298
< 25 years old	5	13,2	23	60,5	28	73,7	
Sum	5	13,2	23	86,8	38	100,0	

(Chi-Square test)

Table 4. Analysis of relationship between Body Mass Index and the incidence of postoperative nausea and vomiting of Patient Sectio Caesarea

Body Mass Index	postoperative nausea and vomiting				Sum	<i>p</i> value	
	Percentage (%)						
	Yes		No				
n	%	n	%	n	%		
Obese	4	10,5	7	18,4	11	28,9	0,019
Not Obese	1	2,6	26	68,4	27	71,1	
Sum	5	13,1	33	86,8	38	100,0	

(Chi-Square test)