Keywords: sectio caesarea, blood pressure, spinal anesthesia.

Introduction:
Surgery is a treatment that uses invasive techniques by opening or displaying the body part to be treated through an incision that ends with wound closure and suturing. Every surgical procedure cannot be separated from anesthesia. Broadly speaking, anesthesia is divided into three, general anesthesia, regional anesthesia, and local anesthesia. Surgery is performed for several reasons such as diagnostic (biopsy, exploratory laparotomy), curative (excision of tumor mass, removal of inflamed appendix), refractive (repairing multiple wounds), reconstructive, and palliative[1].

The high prevalence of Sectio Caesarea (SC) delivery contributes to the increasing problems caused by spinal anesthesia. SC is one of the most commonly performed surgeries for childbirth. SC is a type of fetal delivery through an open abdominal incision (laparotomy) and an incision in the uterus (hysterectomy)[2].
According to RISKESDAS in 2018, the number of SC deliveries among women aged 10-54 years in Indonesia reached 17.6% of all deliveries. There are also several disorders / complications of labor in women above reaching 23.2% with details of transverse / breech fetal position by 3.1%, bleeding by 2.4%, seizures by 0.2%, premature rupture of membranes, by 5.6%, prolonged partus by 4.3%, umbilical cord entanglement by 2.9%, placenta previa by 0.7%, placenta left behind by 0.8%, hypertension by 2.7%, and others by 4.6% [3].

Spinal anesthesia is a technique that has analgetic properties that relieve patient pain but still maintain patient consciousness. Spinal anesthesia is a technique that is widely performed in a variety of surgical procedures. More than 80% of surgeries are performed using spinal anesthesia techniques compared to general anesthesia. The post-anesthesia recovery period is known as a time with a high risk for complications [4].

The most common hemodynamic complication in spinal anesthesia is hypotension. This is a physiological change that often occurs in spinal anesthesia. The incidence of hypotension in spinal anesthesia reaches 8 - 33%. The main cause of hypotension in spinal anesthesia is due to sympathetic blockade. Hypotension can be defined as a decrease in systolic blood pressure of more than 20-30% or defined as systolic blood pressure less than 100 mmHg. The incidence of hypotension in SC is closely related to the use of anesthesia, especially spinal anesthesia. Hypotension that is increasingly aggravated in the mother will result in decreased consciousness, gastric aspiration into the lungs to respiratory arrest and cardiac arrest [2].

The causes of hypotension in spinal anesthesia are caused by factors including the type of local anesthetic, degree of sensory block, age, gender, weight, physical condition of the patient, patient position, surgical manipulation and duration of surgery [6].

Method:
This type of research is quantitative observational analytic. Quantitative research with analytic observational research type, which is observing a phenomenon between risk factors and effect factors, then analyzing to determine how far the contribution of a factor to the existence of a particular event.

The research design uses a cross sectional study. Cross sectional is a study to study the dynamics of the correlation between risk factors and effects, by means of an observation or data collection approach at one time (point time approach), namely the type of research subject is only observed once where the variables that include the effect are observed at the same time.

The sampling technique in this study used total sampling of 52 sectio caesarea patients. Total sampling is a sampling technique where all members of the population are sampled. This research has been approved by the Harapan Bangsa University research ethics review board with approval number No. B.LPPM-UHB/210/03/2024 on March 28, 2024. This research instrument uses observation sheet.

Study Design
This analysis uses primary data from the results of observation sheets conducted on respondents, namely section caesarea patients at RSUD Dr. Soedirman Kebumen. With inclusion criteria, namely respondents in a state of consciousness and can communicate well, section caesarea patients, patients with ASA I and ASA II.
Data Collection and Outcome Measurement

In this study, there were several stages of data collection, namely preparation, administration, explanation, collection, and processing. Data was collected using the observation sheet and the processing included coding, editing, scoring, processing, and cleaning.

This study focuses on the description of blood pressure after spinal anesthesia injection in sectio caesarea patients.

Statistical analyses

All statistical analysis in this study used SPSS statistics with Version 23.0; IBM. The data analysis method is carried out with the aim that the research data which is still in the form of rough data becomes easier to read and interpret. The data analysis method used in this study was analyzed using univariate analysis. The purpose of this analysis was to see the magnitude of the proportion of the variables studied which consisted of demographic data (age, history of labor, blood pressure) at RSUD Dr. Soedirman Kebumen.

According to Notoatmojo (2012) univariate analysis aims to explain or describe the characteristics of respondents based on the characteristics of each variable. To find out characteristics of each research subject by calculating the distribution and percentage of each group.

Result

Table 1. Age Characteristics and Delivery History of Respondents in the Central Surgical Installation of RSUD Dr. Soedirman Kebumen

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>F (52)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17-25 Years</td>
<td>20</td>
<td>38.5</td>
</tr>
<tr>
<td>26-35 Years</td>
<td>25</td>
<td>48.1</td>
</tr>
<tr>
<td>36-45 Years</td>
<td>7</td>
<td>13.5</td>
</tr>
<tr>
<td>History SC</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.1 provides information that most of the respondents in this study were pregnant women aged 26-35 years as many as 25 respondents (48.1%), in the history of SC respondents with the first time SC as many as 35 people (67.3%).

Table 2. Overview of respondents' blood pressure after spinal anesthesia injection in sectio caesarea patients

<table>
<thead>
<tr>
<th>Variable</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAP minutes 5</td>
<td>63</td>
<td>97</td>
<td>81.71</td>
</tr>
<tr>
<td>MAP minutes 10</td>
<td>60</td>
<td>93</td>
<td>81.87</td>
</tr>
<tr>
<td>MAP minutes 15</td>
<td>60</td>
<td>126</td>
<td>85.10</td>
</tr>
<tr>
<td>MAP minutes 20</td>
<td>68</td>
<td>126</td>
<td>83.94</td>
</tr>
</tbody>
</table>

Table 4.2 provides information that all respondents' MAP within 20 minutes in this study was normal (100.0%).

Discussion

Description of blood pressure after injection spinal anesthesia in caesarea section patients at dr soedirman hospital kebumen.

1. Age and delivery history of the respondents.

Table 4.1 shows that the characteristics of respondents based on age Most of them were 26-35 years old as many as 25 respondents (48.1%) and based on the history of childbirth 35 respondents (67.3%) had just given birth for the first time using the sectio caesarea method.

This study is in accordance with [7], that the characteristics of patients based on age for ages 17-25 years are...
20 respondents (38.5%), for ages 26-35 years are 25 respondents (48.1%) and for ages 36-45 years are 7 respondents (13.5%). As for the characteristics of labor history, patients with SC history were 35 respondents (67.3%), for respondents with 2 SCs there were 17 respondents (32.7%).

Age is a unit of time to measure the time of existence of an object or living or dead creature. For example, a person's age is called 15 years measured from the time he was born until the time his age is calculated, age is included in the internal factors that affect blood pressure. Age correlates with experience, experience correlates with knowledge, understanding of a disease or event so that it will shape perceptions and attitudes [8].

Researchers assume that age is one of the factors that can affect changes in blood pressure in patients undergoing sectio caesarea surgery. There are several other factors that can affect changes in blood pressure, such as BMI, height of sympathetic block, gender, patient position, spinal anesthetic agent factors [9,10].

2. Blood pressure picture of respondents after spinal anesthesia injection.

Table 4.2 shows that the MAP of respondents is generally normal. The lowest blood pressure was found at the 10th minute, 60 mmHg and the highest at the 20th minute, 126 mmHg.

The results of the general blood pressure picture provide information that most of the blood pressure is normal as many as 50 respondents (96.2%), hypotensive blood pressure as many as 2 respondents (3.8%).

This study is in line with [11], Most of the respondents who experienced hypotension in section caesarea patients under spinal anesthesia in the 5th minute were 16 people with a percentage (34.8%), where those who experienced mild hypotension were 13 people with a percentage (28.3%), moderate hypotension were 2 people with a percentage (4.3%), severe hypotension were 1 person with a percentage (2.2%).

Mean arterial pressure (MAP) also known as mean arterial pressure is a compensatory mechanism in maintaining cerebral perfusion pressure. There are two indications of events on MAP, namely the occurrence of hypotension and hypertension. Hypertension is a condition where there is an increase in systolic blood pressure of more than 140 mmHg and diastolic blood pressure of more than 90 mmHg in two measurements. While hypotension is a condition where a person's blood pressure (systole) is below 100 mmHg or a decrease in systole blood pressure of more than 20-30% [12–14].

Hemodynamic changes after spinal anesthesia occur in the early minutes because the time required for anesthetic drugs to cause nerve blockade with a certain level is 5-10 minutes. Spinal anesthesia can trigger a decrease in systemic vascular resistance (SVR) and or cardiac output, often leading to hypotension.[15]

Hemodynamic changes occur due to vasomotor sympathetic nerve blockade which is aggravated by the suppression of the aorta and also the inferior vena cava by the enlarged uterus when the patient is supine [9,16]. A significant decrease in maternal blood pressure will endanger the mother and fetus, if the decrease in blood pressure and cardiac output is
Hypotension due to spinal anesthesia can be defined as a condition where there is a decrease in systolic blood pressure >10.30% in the first 30 minutes after induction of spinal anesthesia, or a decrease in mean arterial pressure of more than 30% within 10 minutes after the action, or a condition where there is a decrease in blood pressure until fluid or vasopressor intervention is required within 20 minutes after spinal anesthesia or absolute systolic pressure reaches 90-100 mmHg or a decrease in blood pressure of 25-30% of pre-anesthetic blood pressure [18].

The researcher assumed that the incidence of hypotension in sectio caesarea patients was normal due to vasodilation after the injection of spinal anesthesia in the subarachnoid space.

Limitations and Future Research

When the patient was in the reception room, the patient did not stay long in the reception room and was immediately put into the operating room. So that researchers do not have enough time to do inform consent and also explain research procedures to respondents.

Conclusion

1. The characteristics of the most respondents in this study were age 26-35 years as many as 25 respondents (48.1%), and in the history of sectio caesarea with the first time SC as many as 35 people (67.3%).
2. In general, respondents did not experience changes in blood pressure after spinal anesthesia injection but some patients experienced hypotension.

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