

Factors Associated with Hypothermia Post Spinal Anesthesia in the Central Surgical Installation in 2023

Janner Manurung¹, Ahmad Tajudin²

^{1,2} Politeknik Tiara Bunda and Jannerhormat@gmail.com

ABSTRACT

Hypothermy is a condition in which the body's temperature-delivering mechanism has difficulty coping with the stress of cold temperatures. Hypothermy can also mean that the temperature of body parts is below 36 0C (Potter & Perry 2015). In spinal anesthesia will lower the threshold of shivering to the hypothermic core in the first hour or after spinal anesthesia will decrease by about 1-2oC. Shivering usually occurs in the intraoperative period until the postoperative period. The incidence rate varies greatly between 5% and 65%, It is associated with the redistribution of body heat from the core compartment to the periphery and causes hypothermy (Alfonsi, 2009).

Keywords: Hypothermic, Age, BMI, Sex, Duration of Operation, Spinal Anesthesia

1. INTRODUCTION

Spinal (subarachnoid) anesthesia is a regional anesthesia with the action of injecting local anesthetic drugs into the subarachnoid space. Spinal anesthesia is also called intradural spinal block or intrathecal block. Postoperative patients with spinal anesthesia can experience complications of hypothermia [1]–[4]. Hypothermia can cause cardiac dysrhythmias, prolong healing of surgical wounds, shivering, shock, and decreased patient comfort levels. The purpose of this study was to determine the relationship between BMI and duration of surgery to hypothermia in Postoperative Patients with Spinal Anesthesia. The design of this study is a correlational description with a quantitative approach using probability sampling techniques that will involve 33 respondents. The data collection technique uses primary data by conducting observations by measuring temperature, TB, and duration of surgery

[5], stated that the incidence of hypothermia when patients were in IBS was 87.6%, while Setiyanti's research (2016) at Salatiga City Hospital stated that almost 80% of post-anesthesia patients experienced hypothermia. Tamsuri (2007), if a temperature of less than 360C is used as a benchmark, then the incidence of hypothermia is 50-70% of all patients undergoing surgery.

The results of a preliminary study of interviews with Diklat employees at ASM Hospital, South Jakarta in November 2022, researchers obtained results, namely patients with general anesthesia surgery an average of 55 people each month. Surgery with spinal anesthesia an average of 50 people each month. Therefore, researchers chose respondents who underwent surgery with spinal anesthesia at ASM Hospital, South Jakarta as samples used for the study [6].

In 2022, the phenomenon of hypothermia in IBS RS ASM Jaksel was 5 out of 10 patients who underwent surgery with spinal anesthesia. This proves that there are patients who experience hypothermia in IBS RS ASM Jaksel, namely 50% of 10 patients [7].

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Based on the background above, researchers are interested in examining factors related to post-spinal anesthesia hypothermia in IBS at Ali Sibroh Malisi Hospital, Jakarta.

2. METHODS

This study uses an analytical observational research type, namely observing a phenomenon between risk factors and effect factors, then conducting an analysis to determine how far a factor contributes to a particular incident [9].

The research design uses correlational, namely a study to study the dynamics of the correlation between risk factors and effects, by means of an observation approach or data collection at once at a time (Point time approach), for this reason the type of research subject is only observed once where the variables that include the effects are observed at once at the same time [9].

Researchers conducted observations on factors related to post-Spinal Anesthesia hypothermia at IBS RS Ali Sibroh Malisi. The location of this research was conducted at IBS RS ASM South Jakarta in June - July 2023. The population in this study were patients at RS ASM South Jakarta who underwent elective surgery with spinal anesthesia. The number of respondents who met the inclusion and exclusion criteria was 56 people. Data on the characteristics of respondents in this study were taken based on ASA physical status, age, BMI, gender and duration of surgery.

3. RESULTS AND DISCUSSION

Table 1. Frequency Distribution of Respondent Characteristics at IBS RS ASM South Jakarta in June 2023 (n= 33)

Characteristics	Frequency	Percentage (%)
Physical Status		
ASA I	22	66.6
ASA II	11	33.4
Age		
17-25 years	10	30.4
26-45 years	11	33.3
46-55 years	12	36.3
IMT		
Thin	10	30.3
Normal	13	39.4
Fat	10	30.3
Gender		
Man	12	36.4
Woman	21	63.6
Operation Time		
<1 hour	8	24.5
1-2 hours	20	60.5
>2 hours	5	15.0

Based on the table1, it can be seen that the characteristics of respondents who underwent surgery with Spinal anesthesia at ASM South Jakarta Hospital were mostly ASA I physical status, which was 22 people (66.6%). When viewed from the age factor, most respondents were in the age range of 46-55 years (elderly), which was 12 people (36.3%). Another related factor is the BMI factor, most respondents were in the normal BMI category, which was 13 people (39.4%). Other factors also arise from the gender factor and the duration of surgery. Respondents with female gender were more in the IBS of ASM South Jakarta Hospital, which was 21 people (63.6%). The duration of surgery

undergone by respondents was 3, most respondents underwent surgery in the range of less than 1 - 2 hours, the number of respondents in this time range was 20 people (60.5%).

Table 2. Cross Tabulation between Age and Post-Spinal Anesthesia Hypothermia in IBS ASM Hospital, South Jakarta, June 2023 (n=33)

Age	Hypothermia				Total		p value
	yes		No				
	f	%	f	%	f	%	
17-25 years	6	60.00	4	40.00	10	100	0.012
26-45 years	8	72.73	3	27.27	11	100	
46-55 years	10	83.33	2	16.67	12	100	
Total	24	72.73	9	27.27	33	100	

Based on table 2, there was an increase in the frequency and percentage of hypothermia incidents from the age range of 17-25 years, 26-45 years and 46-55 years. The respondents who experienced the most hypothermia were in the age range of 46-55 years, namely 10 people (83.33%).

Table 3. Cross Tabulation between BMI and Post-Spinal Anesthesia Hypothermia in IBS ASM Hospital, South Jakarta, June 2023 (n=33)

Based on highest hypothermia obese	IMT	Hypothermia				Total		p value
		Yes		No				
		f	%	f	%	f	%	
BMI	Thin	10	100.00	-	-	10	100	0.033
	Normal	11	84.62	2	15.38	13	100	
	Fat	9	90.00	1	10.00	10	100	
	Total	30	90.91	3	9.09	33	100	

on table 3, the frequency of occurred in the category, which was 11 people. Meanwhile, when viewed from the percentage, as many as 100% of hypothermia respondents had a thin BMI.

Table 4. Cross Tabulation between Gender and Post-Spinal Anesthesia Hypothermia in IBS ASM Hospital, South Jakarta, June 2023 (n=33)

Gender	Hypothermia				total		p value
	yes		No				
	F	%	f	%	F	%	
Man	7	58.33	5	41.67	12	100	0.045
Woman	17	80.95	4	19.05	21	100	
Total	24	72.73	9	27.27	33	100	

Based on table 4, more female respondents experienced hypothermia than male respondents, namely 17 people (80.95%).

Table 5. Cross Tabulation between Duration of Surgery and Post-Spinal Anesthesia Hypothermia at IBS ASM Hospital, South Jakarta, June 2023 (n=33)

	yes		No		Total		p value
	f	%	f	%	f	%	
< 1 hour	2	25.00	6	10	8	100	0.001
1-2 hours	14	73.68	5	26.32	19	100	
> 2 hours	5	83.33	1	16.67	6	100	
Total	21	63.64	12	36.36	33	100	

Based on table 5, it can be seen that post-spinal anesthesia hypothermia occurred in respondents who underwent surgery for >2 hours with a percentage of 83.33%.

4. CONCLUSION

Based on table 7, it can be seen that post-spinal anesthesia hypothermia occurred in respondents who underwent surgery for >2 hours with a percentage of 83.33%. Based on the research results and discussion above, the following conclusions can be drawn:

1. There is a relationship between age factors ($p = 0.012$) and postoperative hypothermia.
2. spinal anesthesia at IBS RS ASM South Jakarta.
3. There is a relationship between BMI factor ($p = 0.033$) and postpartum hypothermia.
4. spinal anesthesia at IBS RS ASM South Jakarta.
5. There is a relationship between gender factors ($p = 0.045$) and post-spinal anesthesia hypothermia in IBS RS ASM South Jakarta.
6. There is a relationship between the length of surgery ($p = 0.001$) and post-spinal anesthesia hypothermia in IBS RS ASM South Jakarta.
7. Factors related to post-spinal anesthesia hypothermia at ASM Hospital, South Jakarta, namely age, BMI, gender and duration of surgery.

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