

## THE EFFECTS OF WARM COMPRESS TO VOIDING REFLEXES ON POST OPERATIVE SPINAL ANESTHESIA

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### ABSTRACT

**Background:** Spinal anesthesia commonly leads to urinary retention because of patient unable to feel the bladder sensation and to initiate for voiding after the surgery. Bladder and sphincter muscles are unable to respond for voiding reflexes. One of the nursing intervention to prevent this problem by using warm compression on suprapubic area for postoperative patient undergoes spinal anesthesia.

**Purpose:** This study was to examine the effect of a warm compress to the recovery of voiding reflexes on postoperative patient undergo spinal anesthesia at Pertamina Bintang Amin Hospital, Bandar Lampung

**Methods:** A quasi-experimental study was conducted using intervention and control groups with a simple random sampling technique. There were 30 postoperative patients with spinal anesthesia were recruited in this study at Pertamina Bintang Amin Hospital Bandar Lampung.

**Results:** The mean score of the intervention group was 6.67 hours (6-8), and the control group was 7.13 hours (5-9).

**Conclusion:** Applying warm compress is necessary to the recovery of voiding reflex on a postoperative patient with spinal anesthesia.

**Keywords:** warm compress, voiding reflex, spinal anesthesia

### INTRODUCTION

Patients who get surgery are getting increasingly nowadays, and anesthesia must be used to eliminate patient consciousness during the operation. Several types of anesthesia used for surgery including general anesthesia, local anesthesia and regional anesthesia (Purnama, 2013; Sari, Sutiyono, & Wahyudi, 2012). Every patient with invasive procedures, for instance, surgical procedures will undergo an anesthesia procedure. General anesthesia is a procedure of relieving pain when performing surgery and various other processes that cause pain in the body. Anesthesia consists of general and spinal anesthesia (Mangku & Senapathi, 2010; Flora, Redjeki, & Wargahadibrata, 2014; Akhrita, 2011). Medication and anesthesia techniques generally can be lead to urinary retention, because the client is unable to feel that the bladder is full and unable to start or inhibit voiding. Spinal anesthesia can be affected by urine output because it decreases patient consciousness for voiding (Kozier, 2010; Zuhri, 2010; Hasanudin, & Maliya, 2017).

In postoperative recovery, warm compress therapy is also carried out where the function of giving warm compress therapy is to meet comfort needs, reduce or relieve pain, reduce or prevent muscle spasms, and provide warmth (Putra, 2010; Yus, 2012; Men, Utomo, & Rahmalia, 2015). Warm compress with a temperature of 41°C-43°C can be applied by attaching a rubber bag filled with warm water to a painful area of the body. Physiologically, the body's will response the heat to increase tissue metabolism and capillary permeability. This response from heat is used for therapeutic purposes in various conditions, and it occurs in the body (Anugraheni, & Wahyuningsih, 2013; Sani, 2013; Supriadi, 2017).

The study conducted by Yani. And Khasanah (2012), Rohimah (2015) concerning the differences effectiveness of giving warm compresses and early mobilization to the recovery of bladder in women *post section Caesarea* at Salatiga Hospital showed that warm compresses were sufficient for the bladder recovery process with the fastest time was 68 minutes, and the recovery of bladder was 244 minutes. Pertamina Bintang Amin Hospital is one of

the hospitals in the Bandar Lampung region that provides surgical services to the people of Bandar Lampung and its surroundings, including surgical procedures under spinal anesthesia. The hospital medical record showed that in January to December 2017 there were 315 surgical patients with spinal anesthesia among them there were 73 patients (23.17%) with urinary retention (Medical Record Pertamina Bintang Amin Hospital Bandar Lampung, 2017).

## RESEARCH METHODS

This study was conducted one hour after the patient in the surgical ward from the recovery room. A quasi-experimental study was conducted using intervention and control groups with a simple random sampling technique was applied. After informed consent was obtained from the patients, they were randomly assigned to two groups. The intervention groups were 15 patients and the same number for the control group. The patients in intervention groups were applied warm compress with a rubber bag filled with a warm water temperature of 41°C-43°C within 20 minutes. The warm compress was used in the suprapubic area. Both groups were assessed how long it took needed to feel the urge to voiding. The bladder training is released when it is completed, and

there is a desire to voiding and every one hour on the intervention group and control group even though the patients did not felt the urge to voiding. The inclusion criteria were undergone spinal anesthesia, 20 to 44 years old, ASA I and II physical status, using medication; bupivacaine anesthesia, able to communicate verbally and patients treated in the intensive care room, and there were skin injuries/damage in the area supra pubic exclusion criteria were excluded.

## RESEARCH RESULTS

Total sample in this study consists of 5 (16.6%) female and 10 (33.3%) male among intervention group and 8 (26.6%) female and 7 (23.3%) male from the control group. The age range from intervention group in 20-25 years old were eight people (26.6%), 27-30 years old were four people (13.3%), and 31-44-year-old were three people (10%). Furthermore, from the control group the ages ranged from 20-25 years old were eight people(26.6%), 27-30 years old were three people (10%) and 31-44 years old were four people (13.3). Therefore, their educational level for the intervention group was 9 (30%) mostly high school as well as from the control group were 11 (36.6%).

**Table 1. Demographic Characteristic Postoperative Among Patient Undergo Spinal Anesthesia (N=30)**

| Variables       | Intervention | Control   |
|-----------------|--------------|-----------|
| Age             |              |           |
| 20-25           | 8 (26.6)     | 8 (26.6)  |
| 27-30           | 4 (13.3)     | 3 (10)    |
| 31-44           | 3 (10)       | 4 (13.3)  |
| Gender          |              |           |
| Female          | 5 (16.6)     | 8 (26.6)  |
| Male            | 10 (33.3)    | 7 (23.3)  |
| Education Level |              |           |
| High School     | 9 (30)       | 11 (36.6) |
| Diploma         | 3 (10)       | 1 (3.3)   |
| Bachelor        | 3 (10)       | 3 (10)    |

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**Table 2. Recovery of Voiding Reflexes Among Patient Undergo Spinal Anesthesia (N=30)**

| Variable     | n  | ≤ 6 hours | >6 hours | Mean±SD    | p-Value | Mean Rank | Sum Of Ranks |
|--------------|----|-----------|----------|------------|---------|-----------|--------------|
| Intervention | 15 | 7         | 8        | 6.67±0.724 | 0.010   | 11.53     | 173.00       |
| Control      | 15 | 7         | 8        | 7.13±1.506 |         |           |              |

\*p value <0.05 (Mann u Whitney test)

Table 2 show that the mean score recovery of voiding reflexes in postoperative patient undergo spinal anesthesia in intervention groups were 6.6 (SD ± 0.724) which were voiding less than 6 hours as many as 7 respondents and more than 6 hours were 8 respondents, and the mean score in control groups were 7,13 (SD: 1,50) which voiding less than 6 hours as many as 7 respondents and more than 6 hours were 8 respondents with p-value 0.010 (<0.05) which means there was an effect of giving warm compresses to the recovery of voiding reflexes in postoperative patients undergo spinal anesthesia.

## DISCUSSION

The present study aimed to examine the effect of a warm compress to the recovery of voiding reflexes on postoperative patient undergoes spinal anesthesia at Pertamina Bintang Amin Hospital, Bandar Lampung. This is similar to the result of Sari, Ekwantini, and Prayogi (2017), there were 16 respondents (80%) who recovered their voiding reflexes ≤8 hours and four other respondents (20%) had reflex recovery time longer or > 8 hours in intervention groups with p-value was 0,022.

The rapidity of the voiding process in patients given warm compress due to warm compress therapy can increase and facilitate circulation. The moist warm compress can effectively provide sensory stimuli that can help patients relax abdominal muscles. The attainment of warm compress can accelerate post-surgical recovery (Kozier & Berman, & Synder, 2010). There was a difference in arising time interval from voiding reflexes in patients postoperative undergo spinal anesthesia in the intervention and control group due to warm compress

therapy. The spinal block anesthesia causes urinary retention, the client is not able to feel voiding and possible muscles neither the bladder and urethral sphincter muscle able to respond urge to voiding (Mulroy, Bernard, McDonald & Salinas, 2009).

Warm compress has several influences, namely dilating blood vessels and improving blood circulation in the tissues, the effect of warm compresses on the muscles can reduce pressure and dilation of blood vessels that are results in increased blood circulation and capillaries. This effect is expected causes dilatation of afferent arterioles and increases blood flow into the glomerulus thereby increasing GFR. Spinal anesthesia decreases 5-10% GFR. Therefore it is hoped that the administration of warm compresses can increase GFR to help with urine output (Morgan, Mikhail, & Murray, 2006).

The effect of giving warm compress to the body can cause vasodilation of blood vessels and improve circulation. This process will increase the metabolic circulation of the remaining anesthetic medication that is still left in circulation thus that it can reduce the effect of anesthesia. The decreasing effect of the anesthetic medication it impacts on restoring sensory and motor impulses path between the bladder, spinal cord and brain, as a result, it can lead to the presence of voiding reflexes (Sjamsuhidajat & Jong, 2005).

## CONCLUSION

There was a difference in arising time interval from voiding reflexes in postoperative patients undergo spinal anesthesia in intervention and control group factors of respondent characteristics for instance age, gender, and physical status ASA. The

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use of warm compress is commonly only applied to a particular part of the body. By giving heat from compress mild, blood vessels dilated and it will facilitate blood circulation.

Warm temperature is relatively useful for the treatment, increase blood flow to the injured part. When the warm heat is applied for 1 hour or more, the blood flow will be decreased due to vasoconstriction and the body will try to control the loss temperature from the area. Lifting and re-applied warm compress periodically will restore the effects of vasodilation.

This study is expected to be used as non-pharmacological interventions in postoperative patients undergo spinal anesthesia, In addition, this study can be used as nursing intervention to prevent urinary retention and to give comfort in post-spinal anesthesia patients.

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