

Original Article

Comparison the use of pure jelly lubricant with xilocain gel in the installation of urine catheters for the patient's level

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Abstract

Aims : This research aims to compare the use of pure jelly with xilocain gel in the installation of urine catheter for the patient's pain level.

Design : The research design used was a quasy experiment using a post test only control group design technique.

Methods : This method compared two intervention groups without a pretest. Sample collection using purposive sampling technique. A sample of 60 respondent. The instrument used is numeric rating scale. Data analysis using Mann Withney test.

Results : The results of the research pure jelly mean rank is 44.18 and xilocain gel mean rank is 16.82, with result *p-value* 0.001 this shows there is a difference in thelevel of pain of patients on the use of pure jelly with xilocain gel in the installation of urinary catheter in General Hospital Soreang

Conclusions : It is expected that the result of this study can be considered as one form of development of science based on the evidance of based practice in the management of catheter insertion than the use of xilocain gel can be input into the SPO (Standard Operating Procedure) in order to reduce pain in patients who have urine catheter, and can be inserted in the one pain management carried out by nurses.

KEYWORDS : Pain level, Pure Jelly, Xilocaine gel, Urine Catheter

INTRODUCTION

The act of inserting a catheter is an action that aims to remove or empty the bladder from the bladder. Catheter insertion can be performed in emergency cases, for example in patients with urinary retention due to obstruction in the urinary tract, or not in patients with emergencies, for example in patients requiring observation or monitoring (1). Catheterization is indicated for several reasons, namely to determine the amount of urine remaining in the bladder after the patient urinates (2).

One of the reasons for the installation of a urinary catheter is that there is a disruption in the elimination pattern such as urinary incontinence, where according to WHO (Word Health Organization) data, 200 million people in the world experience urinary incontinence, requiring the installation of a urinary catheter (3).

According to the Kidney and Urological Disease Advisory Board in the United States the number of incontinence sufferers reaches 13 million, this number is actually still small because there are still many cases that have not been reported

At the time of insertion of the catheter the patient will feel pain, pain is a sensory sensation from the subjective experience experienced by each individual and different perceptions from one person to another, pain causes an uncomfortable, unpleasant feeling related to potential tissue damage (4). The existence of uncomfortable and unpleasant feelings will affect the patient psychologically so that it affects the patient's belief in the disease and his recovery. Pain can be defined as something that is difficult to understand and a complex phenomenon although universal, but still a mystery. Pain is one of the defense mechanisms of the human body that indicates the experience of problems. Pain is an individual's belief and how the individual responds to the pain he is experiencing (5).

METHODS

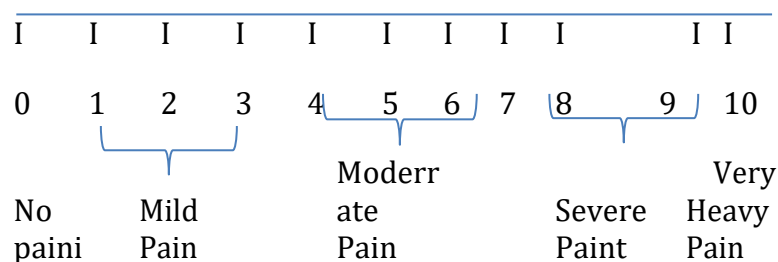
The research method used is a quasi-experimental using a post-test only control group design technique where this method compares two intervention groups without a pre-test (6). The purpose of this study was to determine the effect of using Pure Jelly Lubricant and xylocaine Gel on differences in pain levels due to catheter placement.

The design in this study is to reveal a cause and effect relationship by involving two groups. The first group were patients who had to be catheterized using pure jelly lubricant, and the second group were patients who had to be catheterized using xylocaine Gel lubricant.

The population in this study were patients who had to have a urinary catheter inserted in the Emergency Room and the inpatient room of the Soreang Hospital.

The sampling technique used purposive sample. The number of samples for this study were 30 patients for the pure jelly group and 30 patients for the xylocaine gel group.

In this study, the instrument used was a numerical pain scale, to determine the extent of the respondent's pain level at the time of catheter insertion. The questionnaire or pain scale used is a numerical scale of 0 to 10 (7).



RESULTS

1. Univariate Analysis

- a. An overview of the average pain level of Urine Catheter Installation using Pure Jelly Lubricants (Tabel 1)

Variable	Mean	S.D	Minimal	95%LU
	Median		Maximal	
Pain level	3.80 4.00	1.186	0 – 6	3.36 – 4.24

The results of the analysis in table 1 obtained the average pain level of respondents who used Pure Jelly lubricant 3.80 median 4.00 (95% LU: 3.36-4.24). The standard deviation of 1.186 is the lowest pain level is 0 and the highest pain level is 6. From the estimated interval, it is concluded that 95% is believed that the average pain level of respondents who use Pure Jelly Lubricant is between 3.36 to 4.24.

- b. An overview of the Pain Level of Urine Catheter Insertion with Using Xilocain Gel (Table 2)

Variable	Mean	S.D	Minimal	95%LU
	Median		Maximal	
Pain Level	1.03 1.00	0.999	0 – 3	0.66 – 1.41

the average pain level of respondents who used xylocaine gel 1.03 median 1.00 (95% LU: 0.66 – 1.41). The standard deviation is 0.999, the lowest pain level is 0 and the highest pain level is 3. From the estimated interval, it is concluded that 95% is believed that the average pain level of respondents who use xylocaine gel is between 0.66 to 1.41.

2. Bivariate Analysis

The bivariate analysis used in this study was the independent non-parametric test statistical test, namely the Mann-Withney test.

Table 3 Differences in Respondents' Mean Pain Levels According to the Type of Lubricant Given.

Type of Lubricant	N	Mean Rank	P-Value
Pure Jelly	30	44.18	0.001
Xylocaine gel	30	16.82	

the mean rank of pure jelly lubricant is 44.18 while the mean rank of xylocaine gel is 16.82. Statistical test results obtained p-value = 0.001, meaning that at 5% alpha there is a significant difference between the level of pain in the use of pure jelly lubricant and the level of pain in the use of xylocaine gel.

DISCUSSION

Based on the results of the study, the average pain level of respondents who were catheterized using pure jelly lubricant was 3.80 median 4.00 (95% LU: 3.36-4.24). The standard deviation of 1.186 is the lowest pain level is 0 and the highest pain level is 6. From the estimated interval, it is concluded that 95% is believed that the average pain level of respondents who use pure Jelly Lubricants is between 3.36 to 4.24. Respondents who experienced pain showed varying results from each respondent as obtained from the results of the study, namely 1 person with no pain, 10 people with mild pain and 19 people with moderate pain.

In accordance with the statement (7) stated that the ability of adults to interpret the pain that is felt is very difficult. They sometimes suffer from many diseases with vague / unclear symptoms. Different diseases sometimes cause the same symptoms.

The appearance of pain is closely related to the receptors and the presence of stimulation. Pain receptors are scattered on the skin and mucosa where pain receptors respond if there is stimulation or stimulation, the stimulation can be in the form of chemicals such as histamine, bradykinin, prostaglandins and various acids that are released when there is damage to the tissue due to lack of oxygen. Other stimulation can be thermal, electrical, or mechanical (2).

Based on the results of the study, the average pain level of respondents who used xylocaine gel was 1.03 a median of 1.00 (95% LU: 0.41 – 0.79). The standard deviation is 0.999, the lowest pain level is 0 and the highest pain level is 3. From the interval estimation, it is concluded that 95% is believed that the average pain level of respondents using Xylocaine gel is between 0.66 to 1.41. Respondents who experienced pain showed varying results from each respondent who was catheterized using xylocaine gel, as obtained from the results of the study as many as 12 respondents did not feel pain, 18 people felt mild pain.

Xylocaine gel is a jelly that contains 2% Lidocaine Hydrochloride which functions as an analgesic. This drug works by blocking pain-causing signals so as to prevent the onset of pain with indications indicated for the treatment of problems of the genital/anal area, pain during certain medical procedures, minor burns, itching caused by hemorrhoids, scratches, eczema, insect bites, pain during certain medical procedures and other conditions (PT Astra Zeneca).

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In the use of xylocaine gel, many respondents did not feel this pain because the content contained in this gel is indicated as an analgesic, which is more effective than ordinary lubricating jelly.

Based on the results of research from all respondents who underwent catheter insertion a total of 60 people, 30 people used pure jelly lubricant, 30 others used xylocaine gel using the Mann-Whitney non-parametric test, it was found that the mean rank of pure jelly lubricant was 44.18 While the mean rank of Xylocaine gel is 16.82 Statistical test results obtained p-value = 0.001, meaning that at alpha 5% there is a significant difference between the level of pain in the use of pure jelly lubricant and the level of pain in the use of xylocaine gel. In the use of xylocaine gel, many respondents said that there was no pain, namely up to 12 people, saying that there was mild pain as many as 18 people. Meanwhile, in the use of pure jelly, only 1 respondent said there was no pain, 10 people had mild pain and 19 people said moderate pain. This shows a significant number.

Pain is felt when the pain receptors induce afferent peripheral nerve fibers, namely A-delta fibers and C fibers. A-delta fibers have myelin, inducing pain quickly, with sharp sensations, clearly localizing the source of pain and detecting pain intensity. C fibers do not have myelin, are very small in size, convey poorly localized, visceral and persistent impulses (7).

Pain stimuli are received by receptors in the skin and viscera. Necrotic cells will release K⁺ and intracellular proteins that can cause inflammation. Pain-causing mediators will be released. Leukotriene, prostaglandin E₂ and histamine will sensitize receptors, besides that tissue lesions also activate blood clotting thereby releasing bradykinin and serotonin (8).

When C and A-delta fibers convey stimuli from peripheral nerve fibers, they will release biochemical mediators that are active in the pain response, such as potassium and prostaglandins, which are released when tissue is damaged. Transmission of painful stimuli continues along the spinal cord. In the dorsal horn, neurotransmitters such as substance P are released, causing a synaptic transmission from the peripheral nerves to the spinothalamic tract nerves. Furthermore, information is conveyed quickly to the thalamus center (7).

CONCLUSION

The need for attention in the use of xylocaine gel in catheter placement because the material contained in it contains Lidocaine Hydrochloride 2% which functions as an analgesic that can overcome pain caused by wounds caused by friction of foreign bodies, where pain is one of the signs of infection. Pain is a defense mechanism of the body, pain arises when there is damaged tissue and this will cause the individual to react by moving the painful stimulus (7). The catheter insertion procedure is a stimulus that stimulates pain receptors. Muscle spasm is a common cause of pain and is the basis of the syndrome / collection of clinical symptoms (Jevuska, 2008). For this reason, it is very necessary to use this xylocaine gel or the like to be included in the standard operating procedure for catheter insertion.

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