Pain Level of Male Urinary Catheterization Using Lidocain Gel and Lidocain Liquid at Emergency Room of RSUD Kabupaten Kediri

Melani Kartika Sari\textsuperscript{a1,*}, Dwi Setyorini\textsuperscript{a}, Akhmad Yusron\textsuperscript{b}
\textsuperscript{a} Stikes Karya Husada Kediri, Jatim, Indonesia
\textsuperscript{b} RSUD Kabupaten Kediri, Jatim, Indonesia
\textsuperscript{*} melastarte@gmail.com
\textsuperscript{*} Corresponding author

A B S T R A C T

Pain during urinary catheterization due to friction between the catheter with urethral mucosa. To reduce the pain, a lubricating gel was used, both containing lidocaine or not. Gel containing lidocaine give better results in reducing pain, but it is relatively expensive so lidocaine liquid was used as alternative. The aim of this study to determine differences in pain levels of male urinary catheterization using lidocain gel and lidocain liquid at emergency room of RSUD Kabupaten Kediri. Research design of this study was quasy experiment with two groups posttest only approach. There are 9 samples respondents in each group were performed by accidental sampling. Data was analysed using Mann Whitney test. Almost all of respondents (78%) in lidocain gels group feel mild pain, and most of respondents (56%) in lidocain liquids group feel mild pain. Lidocain gel method gives better results than lidocain liquid method, because the gel that sprayed can lubricate the urethra more leverage than just lidocain liquid at superficial urethra. Analysis data using Mann Whitney test with computerized obtained \( p \)-value = 0.331 at significance level (\( \alpha \)) = 0.05, where \( p \) value \( \geq \) \( \alpha \) 0.05, then it can be concluded that there was no difference in pain level male urinary catheterization using lidocain gel and lidocain liquid. There is no significant difference in the level of pain in both groups because both use lidocain 2%. The use of lidocain liquid can be an alternative to reduce the pain of urinary catheterization placement with relatively cheaper cost.

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I. INTRODUCTION

Balance fluid of body is an important thing in health status of everybody. In human body there is a mechanism that maintenance body fluids. When balance of fluids body was disrupted it can be make deficit fluids body or excess fluids body. Deficit fluids body was manifested by decreasing turgor skin, decreasing blood pressure, and increasing urin concentration. While excess fluids body was manifested by edema, abnormality breath such as rales or crackels and dyspnea. Nursing care to client with excess fluids body problem is monitoring amount of fluid intake and the amount of fluid that comes out of the body. A method to monitoring balance of fluids body is urinary catheterization. This method also use to observe the residu in urinary bladder (Smeltzer, 2002).

Based on the results of a survey at RSUD Kabupaten Kediri, in 2015 approximately 900 visits at emergency department (IGD) within one month. data on emergency department reports within one month of urine catheterization patients were approximately 60 male patients. Preliminary studies conducted by researchers by interviewing some male patients who installed catheters showed that 85% of them complained of pain when the urine catheter was done.

Pain is a major complaint that is often experienced by patients with urine catheterization because the act of inserting a catheter tube into the bladder has a risk of trauma to the urethra. The risk of trauma in the form of irritation of the urethral wall is more common in men because of the longer
and tortuous urethral conditions of the woman and the urethral wall is easily damaged by friction due to the inclusion of catheter tubes (Kozier & Erb 2009). Because of this pain reason 40% of patients indication of urinary catheter insertion in emergency unit of Kediri District Hospital refused urine catheterization.

To reduce pain during urinary catheter is by using lubricant jelly. There are two alternative jelly used as lubricant that is jelly containing lidocain and jelly without lidocain. RSUD Kabupaten Kediri still use jelly without lidocain in the insertion of urine catheter because the price of jelly containing lidocain relatively more expensive compared with jelly without lidocain. Different with Siderias et al (2009) in the journal "comparison of topical anesthetics and lubricants prior to urethral catheterization in males: a randomized controlled trial" that spraying topical anesthesia into the urethra is prioritized on male catheterization because the results are more significant in reducing pain than regular lubricants. Price of jelly lidocain is relatively expensive, then we made an alternative by using liquid lidocain with the same content percentage with jelly lidocain so the cost can be cheaper. The aim of this research is to know the difference of pain level on male urin catheters using jelly lidocain and liquid lidocain at Emergency Room of Kediri District Hospital.

II. METHOD

The design of this research is quasy experiment with two group posttest design method, which is a research design that only takes measurement on the final result of both intervention groups, that is in lidocain jelly group and liquid lidocaine group. The sample in this study were male patients who will be done urine catheter installation at IGD Kediri District Hospital that meets the inclusion and exclusion criteria of 18 patients divided into 2 groups. The sampling technique used was accidental sampling, which is the technique of selection by finding the subject that happened to be encountered in the same place and time at the data collection (Arikunto, 2009).

Inclusion criteria:
Age 21 - 59 years, The condition of the patient is fully conscious, the size of catheter is 16 fr, and willing to be the respondent.

Exclusion Criteria
Urinary tract pain before catheterization (urinary retention), presence of mental disorders, and contraindications of catheter insertion (acute prostatitis, suspicion of urethral trauma / urethral rupture).

Data collection technique
Data collection techniques were conducted by observation in both groups. The researchers treated both groups according to the established SPO and then observed the patient's pain rate and recorded on the observation sheet.

III. RESULTS AND DISCUSSION

Presentation of data characteristic of respondent include: age, education, occupation, experience of catheter installation, and family assistance. From diagram 1 it is known that in the jelly lidocaine group nearly half of respondents (44%) aged 21-40 years and most (56%) aged 41-59 years, whereas in the lidocaine group the majority (56%) were aged 21-40 years and almost half of respondents (44%) were 41-59 years old.
Diagram 1. Characteristics of respondents by age

From the diagram 2 it is found that in the jelly lidocain group most of the respondents (67%) in high school education level, whereas in the liquid lidocaine group most of the respondents (66%) at high school and college education level.

Diagram 2. Karakteristik responden berdasarkan pendidikan

From diagram 3 it is known that in the jelly lidocain group almost all respondents (89%) work as self-employed and farmers (44.5% each), while in the lidocaine group most respondents work (56%) as entrepreneurs.

Diagram 3. Characteristics of respondents by job

From diagram 4 it is known that almost all respondents have never inserted catheter before, that is as much as 89% of respondents in each group.

Diagram 4. Use and never use of catheter

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Diagram 4 characteristics of respondents based on ever or never inserted catheter before

From the diagram 5 it is known that in the jelly lidocain group most of the respondents (67%) were not accompanied by the family when urinary catheter was installed, whereas in the lidocaine group almost all respondents (78%) were not accompanied by the family when urinary catheters were inserted.

Diagram 5 Characteristics of respondents based on family assistance during catheter insertion

Table 1. Distribution of frequency of respondents by medical diagnosis

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Jelly lidocain group</th>
<th>Liquid Lidocaine group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>%</td>
</tr>
<tr>
<td>Ileus Obstructions</td>
<td>2</td>
<td>22%</td>
</tr>
<tr>
<td>Hernia Inguinalis</td>
<td>3</td>
<td>33%</td>
</tr>
<tr>
<td>Appendicitis</td>
<td>1</td>
<td>11%</td>
</tr>
<tr>
<td>Heart Failure</td>
<td>2</td>
<td>22%</td>
</tr>
<tr>
<td>Renal Failure</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Electric Injury</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Crisis Hypertentions</td>
<td>1</td>
<td>11%</td>
</tr>
<tr>
<td>Multiple Fracture</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Jumlah</strong></td>
<td><strong>9</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Based on Table 1, the data of medical diagnosis of the respondents in the jelly lidocain group is almost half of the inguinal hernia, which is 33% while in the liquid lidocaine group almost half with the medical diagnosis ileus obstruction, ie as much as 33%.

Diagram 6 showed that male urinary catheter pain level using jelly lidocain almost all respondents (78%) had mild pain, whereas using lidocaine liquid most respondents (56%) had mild pain.

**Mann Whitney Test**

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mann Whitney U</td>
<td>31.500</td>
</tr>
<tr>
<td>Wilcoxon W</td>
<td>76.500</td>
</tr>
<tr>
<td>Z</td>
<td>-.972</td>
</tr>
<tr>
<td>Asym. Sign. (2-tailed)</td>
<td>.331</td>
</tr>
<tr>
<td>Exact. Sig. [2*(1-tailed)]</td>
<td>.436a</td>
</tr>
</tbody>
</table>

Table 2: Mann Whitney Test differences in pain level of respondents using jelly lidocain and liquid lidocain.

Table 2 shows the value of \( p = 0.331 \) [Asym. Sign. (2-tailed)] whereas the value of \( \alpha \) used is 0.05, or in other words \( p \geq \alpha \) so that decision \( H_0 \) is accepted which means there is no difference of pain level on the male urin catheter installation between using jelly lidocain with liquid lidocain.

Analyze the difference of pain level on male urinary catheter using jelly lidocain and liquid lidocain can be seen in table 5.4 which shows that \( p = 0.331 \) (Asymp sig. 2-tailed), while the value of \( \alpha \) used is 0.05, or in other words \( p \geq \alpha \) so that the decision \( H_0 \) is accepted which means there is no significant difference in pain level on the male urine catheter installation between using jelly lidocain and liquid lidocain. There is no significant difference between these two methods because both use 2% lidocaine as much as 10 ml only the solvent is different between the jelly and the liquid. In addition, the jelly lidocain method is more practical than liquid lidocaine, but the cost is expensive. While the liquid lidocain method costs less and the effect of anesthetic work faster, but less practical because it must prepare liquid packing in the previous syringe in the bottle / ampoule.

Comparison of pain level based on age characteristic in group of jelly lidocain and liquid lidocain no significant difference. This can be due to the comparison of the percentage of respondent's age which is not much different in both groups. Respondents in the jelly lidocain group were nearly half (44%) aged 21-40 years and most (56%) were 41-59 years old, while in the lidocaine group the majority (56%) were 21-40 years old and almost half (44%) aged 41-59 years.

Comparison of pain level based on previous experience of urinary catheter insertion in the jelly lidocain and fluid lidocain groups was no significant difference. This is because the ratio of percentage of respondents who have never and never installed urinary catheters in both groups is the same. Each small percentage of respondents (11%) had catheter installed and almost all respondents (89%) had never installed a urine catheter.

Comparison of pain levels based on family assistance when urinary catheter insertion in the jelly lidocain and fluid lidocain groups was no significant difference. This can be due to the comparison of the percentage of respondents who are not much different in the two groups between the family accompanied and not accompanied by the family when installed urine catheter. The respondents in the jelly lidocain group were almost half (33%) with the family and 67% of them were not accompanied by the family, while in the small lidocaine group (22%) were accompanied by the family and almost all (78%) were not accompanied by the family.

Although the comparison of male urinary catheter insert pain rate between jelly lidocain and liquid lidocain was no statistically significant difference, but the average jelly lidocain method got better pain response result than liquid lidocain method. This is because the method of jelly lidocain, the provision of jelly directly inserted into the urethra will lubricate the urethral mucosa area so that the maximum reduce the friction between the catheter tube with the urethral mucosa layer. In contrast to the liquid lidocain method, jelly is applied only to the catheter tube surface only, so the jelly can not
coat the maximal urethral mucosa when friction occurs between the catheter tube and the urethral mucosa because many jelly are left outside the urethral meatus when the catheter hose is inserted.

IV. CONCLUSION

The level of pain in male urinary catheter insertion using jelly lidocain almost all respondents are on the criterion of mild pain. Pain Rate on Male Urine Catheter Installation Using liquid Lidocaine most of the respondents are on mild pain criteria. The use of jelly lidocain and liquid lidocaine, both can reduce pain in the installation of male urine catheter at the ERI Kediri District Hospital. On the use of liquid lidocaine it costs less than jelly lidocain.

V. REFERENCES

[10] Notoadmodjo 2010, Metodologi penelitian kesehatan, Rineka Cipta, Jakarta


