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Effectiveness of Analgesic Use in Lymphoma Cancer Patients

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ABSTRACT

Background: Lymphoma is an immunological malignancy originating from lymphotic cells that grow uncontrollably and accumulate in the lymph nodes, so it rarely causes a clinical picture as lymphotic. Lymphoma cancer can occur from several factors such as viral infections, family factors, age, gender. Pain is an uncomfortable sensation of sensory and emotional associated with tissue damage. Pain appears at any stage of the disease and can even be the first symptom felt when a malignancy is diagnosed. The purpose of this study was to determine the effectiveness of analgesics use in lymphoma cancer patients. **Method:** This study design uses cross-sectional which is a type of observational research design. The sample used in this study was 31 patients which is the total of the population.. The independent variable in this study is the use of analgesics, while the dependent variable in this study is the effectiveness of analgesics. **Results**: The results of this study obtained a pain scale before using the drug of 4.55 and after the use of the drug of 3.77, this study also used an analysis test using a paired t-test with a p-value of 0.00 which means there is a significant difference between before the use of analgesics to after the use of analgesics. **Conclusion:** The scale of pain before and after the use of analgesics has significant differences, the results of analytical trials in studies before and after drug use also experienced significant differences.

Key words: Pain, Lymphoma Cancer, Analgesics

INTRODUCTION

Lymphoma is an immunological malignancy that originates from lymphocytes cells that grow uncontrollably and accumulate in the lymph nodes, so it rarely causes a clinical picture as lymphocytes. Clinically and pathologically lymphoma can be divided into two main subtypes, namely Hodgkin lymphoma (Hodgkin disease) and non-Hodgkin lymphoma. The difference between the two sub-types is based on the presence of Reed-Sternberg cell histopathology in Hodgkin's lymphoma (Yeni dkk., 2020).

Malignant lymphoma accounts for 3.37% of all malignancies in the world. Prevalence of Malignant Lymphoma worldwide has increased by an average of 3–4% over the last 4 decades. The prevalence of Non-Hodgkin Lymphoma (LNH) in men is 6% and in women is 4.1% while Hodgkin Lymphoma (LH) is 1.1% in men and 0.7% in women. According to the Indonesian Ministry of Health in 2020, the incidence of cancer in Indonesia was 396,914 new cases, with a death rate of 234,511 due to cancer. Based on the 2018 Basic Health Research, the prevalence of cancer in East Java reaches 2.2% of the population, if converted to the population of East Java, then cancer patients spread on the tip of Java reach 86,000 people. The number of female sufferers is 3.5% of the population, more than men who are only 0.8% of the population (Asfiksia dkk., 2018). The Preliminary Study at Balai Dhika Husada Hospital Jember from January to December 2022 found 168 Lymphoma Cancer cases.

Pain is a sensory and emotional uncomfortable sensation and is associated with 4tissue damage. Pain has a strong motivational effect on behavior, but pain and behavior are not always related or directly related to tissue damage (Widyadari et al., 2021). Almost 50% of lymphoma cancer patients experience pain and cancer patients in 90% of advanced cancer patients experience pain. Seventy percent of cancer pain is caused by the tumor itself through soft tissue, visceral, nerve, or bone. It also comes from body structures caused by tumors (such as muscle spasm due to tumors in the spine). 25% of cancer pain comes from cancer therapy such as chemotherapy, radiotherapy, immunotherapy, and surgery. Cancer suffering will certainly increase if adequate pain relief measures are not taken because the pain itself is also accompanied by common symptoms of cancer such as fatigue, weakness, nausea, constipation and impaired cognitive function (Lukman and Hardjanto, 2010).

Pain can be relieved by administering pain medication or analgesics. Treatment of pain includes pharmacological and non-pharmacological therapies. The World Health Organization (WHO) has issued pain guidelines for the treatment of pharmacological pain known as laddering. Mild pain using Non Steroidal Anti-inflammatory Drugs (NSAIDs) and paracetamol. Moderate pain that does not subside, can be given weak narcotics, such as tramadol. Severe pain needs to be considered with the administration of narcotics such as morphine.

METHODS

This research design uses cross-sectional which is a type of observational research design. This research has received ethical permission from the University of dr. KEPK Ethics Soebandi. The sample used in this study was 31 patients which is the total population. The independent variable in this study is the use of non-steroidal analgesic drugs, while the dependent variable in this study is the effectiveness of analgesic drugs. Analysis of differences in effectiveness using the SPSS application and analysis of hypothesis testing using *paired t test* statistics. The research was conducted in the Medical Records Room of Baladhika Husada Hospital Jember in May 2023.

RESULT AND DISCUSSION

Table 1 Characteristics of patients by age

Age	Frequency	Percentage (%)
30-50	8	25,8%
> 50	23	74,2%
Total	31	100%

Table 2 Characteristics of patients by sex

Sex	Frequency	Percentage (%)
Men	18	58 %
Women	13	42 %
Total	31	100%

Table 3 Use of analgesic drugs in patients with lymphoma cancer pain

Analgesic Drug	Frequency	Percentage (%)
Metamizol	31	100%
Jumlah	31	100%

Tables 1 and 2 show patient characteristics by age and sex, the results of the study found 25.8% (8 patients) aged 30-50 years, 74.2% (23 patients) aged > 50 years. 58% (18 patients) were men, and 42% (13 patients) were women. Table 3 shows that as many as 31 patients used analgesic drugs containing metamizole to treat pain in lymphoma cancer.

Based on the Health Office (2022), the pain in cancer patients experienced by patients varies depending on various factors such as the location of cancer and the cause of cancer, including side effects of treatment. The pain may come on suddenly, last for a while or last longer. The pain that appears is very diverse, ranging from pressure, pain, tingling, numbness, burning or like being pierced by a sharp object. There are many different pain triggers, some come and go intermittently, some are just with activity, and some are continuous. Cancer pain that is not well controlled becomes an obstacle for patients in carrying out daily activities, affects the quality of life of patients, reduces and increases depression and anxiety among cancer patients (Afladhia et al., 2022).

Pain in cancer patients often occurs as a result of the cancer itself or as a result of chemotherapy treatment, pain occurs when there is tissue damage. In this case, the action to control or eliminate pain in cancer patients is to take analgesic drugs, although some areas have received analgesics, the residual pain remains and greatly affects the clinical outcomes of cancer patients (Putri and Juliansyah, 2022). Non-steroidal anti-inflammatory drugs are the most commonly used for pain treatment; treatment response varies from person to person. The results of studies that have been done patients mostly use metamizole injections to treat cancer pain (Heryati et al, 2012). The outcome of using metamizole as an analgesic in treating cancer pain depends on the determination of indications, accuracy of dosage, and duration of drug administration (Kurniawati et al .,2012).

Table 4 Comparison of pain scales before and after the use of analgesic drugs

Analgesic	Pain Scale		Total	Percentage (%)	Decrease %
	Before	After			
Metamizol	3	0	1	3,2%	1,8%
	3	4	1	3,2%	-0,6%
	4	3	2	6,5%	12%
	4	5	1	3,2%	-0,6%
	4	4	5	16,2%	0%
	5	4	21	67,7%	13,4%
Total	142	117	31	100%	

Table 4 explains that the results of the study in 31 patients who used analgesic drugs containing metamizole to treat pain in lymphoma cancer experienced a decrease in different pain scales.

The intensity of pain can be affected in addition to cancer also caused by many psychological factors such as anxiety and stress levels. The intensity of pain in patients can change at any time depending on the influencing factors, holding pain is also influenced by various factors, namely drugs, analgesic drugs can be used for mild pain cancer patients and can only be given to patients who have the efficacy and tolerability of using analgesics. Pain intensity can be measured using the NRS measuring scale to see pain reduction before and after the use of analgesic drugs. The class of analgesic drugs used in this study is metamizole (Heryati et al, 2012).

Based on the 2015 National Formulary, metamizole injection 500 mg/mL is accepted as an additional therapeutic option for pain. The mechanism of action of metamizole is COX-3 inhibitory and activation of the opioidergic and cannabinoid systems. Metamizole inhibits the ability to induce pain in hippocampal neurons, although it is not as effective as the drug morphine (Oliveros, 2011).

Metamizole acts as an antipyretic by blocking both lipopolysaccharide-induced pyrogenic pathways, namely pathways that are dependent and independent of prostaglandins. The antipyretic mechanism is different from other nonsteroidal anti-inflammatory drugs.

Table 5 Analysis of differences before and after administration of analgesic drugs in lymphoma cancer patients

Variabel	Mean	SD	p-value	n
Pain scale before administration of analgesic drugs	4,55	0,623	0,000	31
Pain scale after administration of analgesic drugs	3,77	0,844		

Differences in pain scales before and after administration of analgesic drugs in cancer patients were analyzed using paired t-tests, the results of the analysis obtained a p-value of 0.000 where the value was <0.05. So that between before and after the use of the drug has a significant difference.

This study is showing from the results of the Paired Samples Test, it can be seen that the average difference between the level of pain before and the level of pain after is

2.615. This means that there was a decrease in pain levels after the intervention with an average decrease of 2.6 points. The calculation result is p = 0.000; α=0,05.

CONCLUSION

The use of analgesic drugs in patients with lymphoma cancer pain at Baladhika Husada Hospital Jember is metamizole. The pain scale before using the drug with an average of 4.55 and the pain scale after drug use with an average of 3.77. The use of analgesic drugs is effective in reducing pain in lymphoma cancer patients.

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