

The Correlation between Chemotherapy (Vesikan) and Extravasation in Cancer Patients in Teguh Pure Hospital in 2018

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ABSTRACT

Patients with cancer will usually be on a long and repeated course of treatment. Specific and systemic drugs are needed to kill cancer cells such as vesikan drugs that have the side effect of extravasation. The purpose of this study was to determine the relationship of chemotherapy drug administration (vesikan) with extravasation events in cancer patients. This type of research is a correlational analytic study with a cross sectional approach. The research was conducted at Murni Teguh Hospital, Medan. The population in this study were 611 people and 10% samples were taken, 61 people. Data were analyzed univariately and bivariately using the chi-square test with a confidence level of 95% ($\alpha = 0.05$). The research results are pointing The majority of respondent drug types are Adriamycin (doxorubicin) (90.2%), minority of respondent drug types are Methotrexate (1.6%). The administration of chemotherapy drugs (vesikan) is significantly related to the incidence of extravasation in cancer patients in Medan Teguh Pure Hospital in 2018, p-value 0.004 < 0.05. It is recommended to nurses to pay more attention to the results of giving chemotherapy drugs to patients and the effects that may arise such as extravasation. Nurses also need to provide health education to cancer patients about the drugs to be given so that patients are better prepared to deal with the side effects of chemotherapy for prescription drugs.

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1. Introduction

Cancer is a group of diseases which is currently getting more sufferers. Society is generally afraid of cancer because of the suffering of patients who are severe, sad, and deadly. Nowadays cancer is one of the diseases which is a serious problem of public health both in the world and in Indonesia. This is because the prevalence of cancer incidence from year to year continues to creep up and is followed by an increasing mortality rate (Rasjidi, 2013).

According to the World Health Organization (WHO), cancer along with cardiovascular disease is a class of non-communicable diseases that causes the greatest death of women in the world. There are 14% of cases of female deaths caused by cancer. Based on research conducted by the International Agency for Research on Cancer (IARC) in 2012 there were 14.1 million new cases of cancer in the world and 8.2 million deaths from cancer. The biggest cause of death is lung cancer, which is 1.59 million deaths while breast cancer causes 512,000 deaths (Globocan-IARC, 2012).

In men there are 7,410,376 cases of cancer (except non-melanoma skin cancer) in the world. Lung cancer became the most common cancer with a prevalence of 16.8% or as many as 1,241,601 events while the mortality rate was 23.6% or 1,098,702 deaths. Then followed by prostate cancer (14.8%), colorectal (10.1%), and stomach (8.5%). Meanwhile in women there were 6,657,518 cases of cancer (except nonmelanoma skin cancer), cancer with the highest prevalence rate, namely breast cancer with 1,671,149 cases or 25.1% with a mortality of 521,907 or 14.7%. Then followed by 9.2% colorectal cancer, and cervical uterus 7.9% (Globocan-IARC, 2012).

Based on the 2013 Riskesdas data, the prevalence of cancer is 4.3 per 1000 population in Indonesia. Cancer is the number 7 cause of death (5.7%) after Stroke, TB, Hypertension, Injury, Perinatal, and DM. According to the Hospital Information System (SIRS), the highest type of cancer in hospitals throughout Indonesia inpatients in 2012 was breast cancer (18.4%) (Ministry of Health Republic of Indonesia, 2014).

The results of Riskesdas (2013) show the prevalence of cancer in North Sumatra Province is 0.7 per 1000 population. The prevalence of cancer in women is higher than in men and the prevalence of cancer in cities tends to be greater than in villages (Kemenkes RI, 2014).

From the recapitulation data of Puskesmas in Medan City, the order of the number of cases of cancer patients is 449 cases of breast cancer, followed by 99 cases of prostate cancer, 75 cases of

cervical cancer, 47 cases of colorectal cancer, 46 cases of lung cancer and 46 cases of nasopharyngeal cancer 39 cases (Prawira, 2015).

Broadly speaking, cancer management is divided into two, local therapy (conservative surgery, modified radical mastectomy, radical mastectomy with reconstruction) and systemic therapy (chemotherapy, hormonal therapy and bone marrow replacement) (Smeltzer and Bare, 2012)

Extravasation damages irreversibly progressive tissue within hours to days. As for the risk factors that can cause extravasation of chemotherapy drugs with peripheral intravenous use are brittle blood vessels, small diameter, reduced elasticity, edema, blood vessel location, types of chemotherapy drugs, radiation marks. This can be detrimental to the patient because it can cause burns, pain, risk of infection, dysfunction and can cause permanent damage. Extravasation increases the patient's pain, medical expenses, and can extend the patient's hospital stay. The cost of treatment with chemotherapy has been very expensive (Cicilia, 2015).

The incidence of extravasation ranges from 0.5% -6% in patients receiving peripheral chemotherapy. This incidence is not the correct value because a lot of data is not reported, the data available are usually only obtained from large hospitals. The incidence of extravasation via the intravenous route is on average 0.1% to 6% via peripheral venous pathways. The incidence through central venous catheters is 0.3% to 4.7%. The incidence of extravasation in adults is estimated between 0.1% and 6%. Incidence of extravasation is greater in women (56%) than men (42%), most found in the age group of 50-64 years. The incidence of chemotherapy extravasation is 7% (NEIS, 2012).

Vesikan is a type of chemotherapy drug given to patients can cause tissue necrosis if it comes out of a vein or inadvertently in administration through peripheral veins. Doxorubicin and other vesicles cause necrosis by binding to DNA (Dioxyribonucleic acid) in healthy tissues when extravasated (Cassagnol & McBride, 2011).

High potential risk factors for extravasation according to the Gplpland Oncology Nurse Group include small veins, multiple drugs, general vascular disease (peripheral vascular disease, diabetes, hypertension), lack of paramedical knowledge, types of drugs, and frequency of chemotherapy. Extravasation is one of the frightening complications that occur during the administration of chemotherapy drugs (NEIS, 2012).

Murni Teguh Hospital Medan is a private hospital more devoted to dealing with cancer and heart disease. Data on the number of patient visits in the oncology unit Murni Teguh Hospital Medan with 7,166 visits, in January 2016 with 699 visits, in February 2016 with 749 visits, in March 2016 with 750 visits, in April 2016 with 784 visits, in May 2016 with 799 visits, in June 2016 with 774 visits, in July 2016 there were 773 visits, in August 2016 there were 916 visits, in September 2016 there were 922 visits. The number of patients who regularly make visits to the Pure Teguh Hospital in Medan is 796 people.

Data in 2015 showed that most cancer cases in Medan Pure Teguh Hospital were 94 cases of breast cancer, 82 cases of cervical cancer, 52 cases of prostate cancer, 33 cases of nasopharynx cancer and 24 cases of lung cancer. According to data from the oncology department, all cancer patients who visited Medan Teguh Hospital were treated with chemotherapy. Based on documentation that in 2015 cancer patients undergoing chemotherapy, the number of patients experiencing extravasation there were 3 people, while in 2016 as many as 4 people (4.6%) with complaints complaining of heat, and redness at the location of the puncture of the infusion. Based on the minimum standard of extravasation rates, Pure Teguh Medan Hospital is 0.5%.

Nurses play the role of care executor and educator. As the executor of care the role of the nurse is to provide professional nursing services. In acting as an educator, patients are taught to understand the signs and symptoms of chemotherapy drug extravasation so that they can detect the signs of extravasation early.

2. Research methods

This study is a correlational analytic study with a cross sectional approach that aims to determine the relationship between the administration of chemotherapy drugs (vesikan) with extravasation events in cancer patients in Teguh Pure Hospital in 2018. The location of this study was conducted at Murni Teguh Hospital, Medan Jalan Jawa No. 2 Gang Buntu, Medan Timur District. This research was conducted on January 25, 2018

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- February 7, 2018. The population in this study were all cancer patients undergoing chemotherapy at Murni Teguh Hospital Medan as many as 611 people. The sample of this study was taken as much as 10%, as many as 61 people.

The operational definitions of the research variables are as follows:

- The administration of chemotherapy drugs is the process of treating cancer patients by nurses by providing vesic drugs in accordance with the stage of cancer suffered by the patient.
- Extravasation event is the occurrence of irritant wounds from the vein to the surrounding tissue due to the administration of chemotherapy drugs.

The administration of chemotherapy drugs to cancer patients is categorized as follows:

Vesikan, the patient was injected through intravenous chemotherapy drugs namely adriamycin (doxorubicin), epipirubicin, Vinorelbine (Navelbine).

The incidence of extravasation in cancer patients is categorized as follows:

- No extravasation occurs, if during or after chemotherapy drugs the patient does not experience signs and symptoms such as pain, burning sensation, skin becomes pink or bright red, skin changes are more apparent, hardening of the skin, swelling, necrotic sores, widened ulcers occur necrotic tissue thickening.
- Extravasation occurs, if during or after chemotherapy drugs are found signs and symptoms such as pain, burning sensation, skin becomes pink or bright red, skin changes are more apparent, hardening of the skin, swelling, necrotic sores, widened ulcers, thickening of tissue necrotic. The types of data used in this study are primary data and secondary data. Primary data obtained directly from respondents' answers to questions raised through the questionnaire. Secondary data is data obtained from Murni Teguh Hospital, Medan, which is related to the number of cancer patients, and other data that support this research. Data collection is carried out when the patient is undergoing chemotherapy with drug injections, by looking at the injection scars in cancer patients. Next, the researchers made observations on the injection site whether the wound occurred due to the administration of chemotherapy drugs (vesikan) or not. This research was conducted after researchers obtained permission from the education department of the S-1 Study Program of Nursing at the North Sumatra Medan College of Health Sciences and submitted a request for a research permit to the Head of Murni Teguh Hospital, Medan. After getting approval, the researcher then met with the respondent and explained the intent and purpose of the study.

The collected data is then processed manually using the following steps:

- Editing*
In this editing step the researcher checks the questionnaire. Data checking is also carried out in order to find out the number of respondents, and sort by the number of respondents.
- Coding*
In this step the writer gives code to the research variables making it easier to process data, such as the respondent's name is changed to numbers 01, 02, 03, and so on
- Tabulating*
To simplify data analysis and draw conclusions, data is entered into a frequency distribution table, and the percentage is calculated for each variable studied, making it easier to present the data obtained.

2.1 Data Analysis Techniques

The data analysis technique of this research is by:

- Univariate analysis
Perform analysis on each variable to determine the frequency distribution of the studied variables.
- Bivariate analysis
Next, analyze the data by conducting a test that is used to determine the relationship between the administration of chemotherapy drugs (Vesikan) with the incidence of extravasation in cancer patients using the chi-square test.

2.2 Acceptance or rejection of research hypotheses

Acceptance or rejection of the research hypothesis is as follows:

- H_0 is accepted and H_a is rejected, if the significant value (probability = p) > 0.05, then there is no relationship between chemotherapy (Vesikan) and extravasation in cancer patients at Teguh Pure Hospital in 2018.

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- b. H_0 is rejected and H_a is accepted, if the significant value (probability = p) < 0.05 , there is a relationship between the administration of chemotherapy drugs (Vesikan) with the incidence of extravasation in cancer patients at Teguh Pure Hospital in 2018.

3. Results and Discussion

3.1 Characteristics of Respondents

Based on the results of the study, the characteristics of respondents can be seen in the following table.

Table 1
Frequency Distribution of Respondents Based on the characteristics of the Pure Teguh Hospital in 2018

No	Age	f	(%)
1	28-37 years old	7	11.5
2	38-47 years old	20	32.8
3	48-57 years old	24	39.3
4	58-67 years old	9	14.8
5	68-76 years old	1	1.6
Total		61	100.0
No	Gender	f	(%)
1	Male	7	11.5
2	Girl	54	88.5
Total		61	100.0
No	Education	f	(%)
1	Elementary school	3	4.9
2	Middle School	4	6.6
3	High school	28	45.9
4	College	26	42.6
Total		61	100.0
No	Profession	f	(%)
1	Housewife	35	57.4
2	Doctor	1	1.6
3	Civil servants	22	36.1
4	entrepreneur	2	3.3
5	Employee	1	1.6
Total		61	100.0
No	Suku	f	(%)
1	Java	23	37.7
2	Nias	1	1.6
3	Batak	20	32.8
4	Malay	3	4.9
5	Manado	1	1.6
6	Chinese	5	8.2
7	Karo	2	3.3
8	Aceh	2	3.3
9	India	3	4.9
10	Padang	1	1.6
Total		61	100.0
No	Diagnosis	f	(%)
1	Breast cancer	55	90.2
2	Nasopharyngeal Cancer	5	8.2
3	Hodgkin lymphoma	1	1.6
Total		61	100.0
No	Cancer Stage	f	(%)
1	Stage 1	2	3.3
2	Stage 2	18	29.5
3	Stage 3	36	59.0
4	Stage 4	5	8.2
Total		61	100.0
No	History of Chemotherapy	f	(%)
1	Number 1	5	8.2
2	2nd	7	11.5
3	The 3rd	11	18.0
4	To 4	15	24.6
5	5th	4	6.6

No	Age	f	(%)
6	6th	14	23.0
7	8th	5	8.2
Total		61	100.0

Based on the table above shows that of the 61 respondents studied the majority were 48-57 years old as many as 24 people (39.3%), minority aged 68-76 years as many as 1 person (1.6%). Based on sex, showed that the majority of respondents were female as many as 54 people (88.5%), the minority of respondents were male as many as 7 people (11.5%).

Based on education, it shows that the majority of respondents have a high school education of 28 people (45.9%), the minority of respondents have an elementary school education of 3 people (4.9%). Based on work shows that the majority of respondents work as housewives as many as 35 people (57.4%), the minority of respondents work as doctors and each employee as much as 1 person (1.6%). Based on ethnicity, shows that the majority of respondents are Javanese as many as 23 people (37.7%), minority ethnic Nias, Manado, and Padang each as much as 1 person (1.6%).

Based on the diagnosis of cancer shows that the majority of respondents were diagnosed with breast cancer as many as 55 people (90.2%), the minority of respondents were diagnosed with Hodgkin lymphoma cancer as much as 1 person (1.6%). Based on the stage of cancer, showed that the majority of the palladium suffered by respondents was stage 3 as many as 36 people (59.0%), the minority had stage 1 cancer as many as 2 people (3.3%). Based on the history of chemotherapy, it shows that the majority of the history of chemotherapy to 4 as many as 15 people (24.6%), minority history of chemotherapy to 1 and 8 as many as 5 people (8.2%).

3.2 Giving Chemotherapy Drugs

a. Types of Vesikan Medicine

Based on the results of the study, types of vesikan drugs given to respondents can be seen in the following table.

Table 1
Frequency Distribution of Respondents by Type of Vesikan Drugs at Teguh Pure Hospital in 2018

No	Types of Vesikan Medicine	f	(%)
1	Adriamycin (doxorubicin)	55	90.2
2	Epipirubicin	3	4.9
3	Vinorelbine (navelbine)	2	3.3
4	Methotrexate	1	1.6
Total		61	100.0

The above table shows that the types of vesikan drugs given to the majority of respondents were Adriamycin (doxorubicin) as many as 55 people (90.2%), the minority of respondent drug types were Methotrexate by 1 person (1.6%).

b. Chemotherapy Medications 2

Based on the research results, 2 chemotherapy drugs given to respondents can be seen in the following table.

Table 2
Frequency Distribution of Respondents Based on Giving Chemotherapy Drug 2 at Teguh Pure Hospital in 2018

No	Chemotherapy Medications 2	f	(%)
1	Bleomycin (Bleocin)	1	1.6
2	Curacyl	11	18.0
3	Cyclophosphamide (Cyclovid)	27	44.3
	Docetaxel		
4	Gemcitabine	15	24.6
5	Mabthera	2	3.3
6	Sindaxel	1	1.6
7.8		4	6.6
Total		61	100.0

The table above shows that the majority of the 2 chemotherapy drugs given to respondents were Cyclophosphamide (Cyclovid) by 27 people (44.3%), the minority of the 2 chemotherapy

drugs given to respondents were Bleomycine (Bleocin) and Mabthera each of 1 people (1, 1, 1 6%).

c. Chemotherapy Drugs 3

Based on the results of the study, 3 respondents' chemotherapy drugs can be seen in the following table.

Table 3

Frequency Distribution of Respondents Based on the Administration of Chemotherapy 3 in Pure Teguh Hospital in 2018

No	Chemotherapy drugs 3	f	(%)
1	Curacyl	2	5.9
2	Cyclophosphamide (Cyclovid)	15	44.0
3	Docetaxel	10	29.4
4	Doxorubicin	1	2.9
5	Herceptine	3	8.8
6	Mabthera	1	2.9
7	Vinblastine	1	2.9
8	Vincristine	1	2.9
Total		34	100.0

The above table shows that the majority of chemotherapy drugs 3 given to respondents were Cyclophosphamide (Cyclovid) as many as 15 people (44.0%), the minority of chemotherapy drugs 3 given to respondents were Doxorubicin, Mabthera, Vinblastine and Vincristine each as many as 1 person (44.0%) 2.9%).

d. Chemotherapy Medications 4

Based on the results of the study, 4 respondents' chemotherapy drugs can be seen in the following table.

Table 4

Frequency Distribution of Respondents Based on the Administration of Chemotherapy Drug 4 at Teguh Pure Hospital in 2018

No	Chemotherapy Medications 4	f	(%)
1	Dacarbanzine	1	16.7
2	Vincristine	4	66.6
3	Zometa	1	16.7
Total		6	100.0

The table above shows that the majority of chemotherapy drugs 4 respondents were Vincent as many as 4 people (66.6%), the minority of chemotherapy drugs 3 respondents were Dacarbanzine and Zometa each as much as 1 person (16.7%).

e. Extravasation Events

Based on the results of the study, the incidence of extravasation in respondents can be seen in the following table.

Table 5

Frequency Distribution of Extravasation Events to Respondents in Murni Teguh Hospital in 2018

No	Extravasation	f	(%)
1	No extravasation occurred	52	85.2
2	Extravasation occurred	9	14.8
Total		61	100.0

The table above shows that the majority of respondents did not experience extravasation of 52 people (85.2%), while respondents who experienced extravasation were 9 people (14.8%).

3.3 The Correlation between Chemotherapy (Vesikan) and the Extravasation in Cancer Patients

The results of the relationship between chemotherapy (vesikan) drug administration and the incidence of extravasation in cancer patients can be seen in the following table.

Table 6.

Cross-linking Drug Administration of Chemotherapy (Vesikan) with Extravasation in Cancer Patients in Pure Teguh Hospital in 2018

No	Type of medicine	Abnormal Reaction				amount		<i>p-value</i>
		No extravasation occurred		Extravasation occurred				
		f	%	f	%	F	%	
1	Adriamycin (Doxorubicin)	49	89.1	6	10.9	55	100.0	0.004
2	Epirubicin	2	66.7	1	33.3	3	100.0	
3	Vinorelbine (Navelbine)	0	0.0	2	100.0	2	100.0	
4	Methotrexate	1	100.0	0	0.0	1	100.0	

The above table shows that of the 55 respondents given adriamycin (doxorubicin) chemotherapy the majority did not occur as much as 49 people extravasation (89.1%). Of the 3 respondents who were given epirubicin chemotherapy drugs the majority did not occur extravasation of 2 people (66.7%). Of the 2 respondents who were given the chemorelbine (navelbine) chemotherapy drug all experienced extravasation of 2 people (100.0%). Of the 1 respondent who were given the chemotherapy drug Methotrexate there was no extravasation (100.0%). The patients with the most extravasation were patients who were given the drug chemotherapy adriamycin (doxorubicin).

Bivariate test results using Chi-Squared obtained p-value of 0.004 <0.05 means that there is a significant relationship between the provision of chemotherapy drugs (vesikan) with the incidence of extravasation in cancer patients at Teguh Pure Hospital in 2018.

3.4. Discussion

a. Giving Chemotherapy Drugs (Vesikan) to Cancer Patients

Based on the results of research on the administration of chemotherapy drugs (vesikan) in cancer patients shows that the type of vesikan drug given to the majority of respondents is Adriamycin (doxorubicin) as many as 55 people (90.2%), the minority of respondent drug types is Methotrexate by 1 person (1, 6%). The majority of chemotherapy drugs 2 respondents were Cyclovid by 23 people (37.7%), the majority of chemotherapy drugs 3 given to respondents were Cyclovid by 12 people (35.2%), the majority of chemotherapy drugs 4 respondents were Vincristine by 4 people (66, 6%).

According to the researchers, vesikan is a type of chemotherapy drug given to patients that can cause tissue necrosis if it comes out of a vein or inadvertent administration of peripheral veins. Doxorubicin and other vesicles cause necrosis by binding to DNA (Dioxyribonucleic acid) in healthy tissue cells when extravasated. Administration of vesic drugs in chemotherapy treatment at Medan Teguh Pure Hospital is adjusted to the stage of cancer suffered by the patient. The higher the stage of the cancer sufferer, the higher the dose of the dose given so that the drug can fight cancerous cells.

The results of research conducted by Cecilia (2015) that for the risk factors for the type of drug that is neutral as much as 23.3%, irritants 33.3% and as much as 43.4%.

Cytostatic drugs in chemotherapy for many cancers are given intra venously both bolus and drip. Because these drugs are carcinogenic, they need safe handling of chemotherapy. The most feared when extravasation occurs is the entry of drugs into the tissue that can damage the tissue, this can cause discomfort and harm the patient (Mouridsen, 2012).

Chemotherapy drugs that are given intravenously can be given bolus or drip. Chemotherapy drugs are carcinogenic, so safe treatment is needed in administering chemotherapy. The administration of chemotherapy drugs must be given by nurses who have gained knowledge and skills regarding chemotherapy (BCCA, 2013).

b. Incidence of Extravasation in Cancer Patients

The results of the study of the incidence of extravasation in cancer patients in Medan Teguh Pure Hospital showed that the majority of respondents did not experience extravasation by 52 people (85.2%), while respondents who experienced extravasation were 9 people (14.8%).

According to researchers, the results of this study indicate that patients undergoing extravasation are still high in the chemotherapy treatment of cancer patients. Extravasation events can occur even if conditions are closely monitored. The absence of a standard protocol for administering chemotherapy drugs, and carelessness can be a trigger for extravasation. In addition, the patient's factor also influences the occurrence of extravasation, which is skin tissue that is susceptible to vesic drugs.

The incidence of extravasation ranges from 0.5% -6% in patients receiving peripheral chemotherapy. This incident is not a true value because a lot of data is not reported (Rosdiana, 2009).

Based on Cecilia's research (2015) that of 29 cancer patients who underwent chemotherapy, there were 1 patients who experienced extravasation, namely complaining of redness at the location of the puncture of the infusion. According to Mubarak's research (2013) the incidence of extravasation in the chemotherapy ward at the Dr. General Regional Hospital Sardjito Yogyakarta by 12.7%. Incidence of extravasation in hospitals is not expected to occur because hospitals must be able to provide services that are safe and without complications.

The incidence of extravasation via the intravenous route is on average 0.1% to 6% via the peripheral venous line. The incidence rate through central venous catheters is 0.3% to 4.7% (Cassagnol & McBride, 2014). The incidence of extravasation in adults is estimated to be between 0.1% and 6% (Schrijvers, 2013). Incidence of extravasation is greater in women (56%) than men (42%), most found in the 50-64 years age group. The incidence of chemotherapy extravasation is 7% (NEIS, 2012).

Patients with cancer will usually take long and repeated treatments. Specific and systemic drugs are needed to kill cancer cells. Cancer drugs are also called sitostatics. Cancer treatment can use radiation as well as chemotherapy. Chemotherapy can be done via oral, skin, intravenous, intramuscular, intrathecal, intra-cavity, intraabdominal. Cytostatics is carcinogenic and requires special treatment, because the effects of cytostatics if not given properly, for example through intravenous veins in non-patent blood vessels can cause extravasation at the injection site.

Extravasation is leakage of drugs or fluids into subcutaneous tissue from veins or vascular tissue, especially damaging tissue and skin necrosis. Extravasation damages irreversibly progressive tissue within hours to days. As for the risk factors that can cause extravasation of chemotherapy drugs with peripheral intravenous use are brittle blood vessels, small diameter, reduced elasticity, edema, blood vessel location, types of chemotherapy drugs, radiation marks. This can harm patients because it can cause burns, pain, risk of infection, dysfunction and can cause permanent damage (Mouridsen, 2012). Extravasation increases the patient's pain, medical expenses, and can extend the patient's hospital stay. The cost of treatment with chemotherapy is very expensive.

c. The Correlation Between Chemotherapy (Vesikan) Drug With Extravasation In Cancer Patients

Based on the results of research on the relationship of chemotherapy drug administration with the incidence of extravasation in cancer patients, the value of $p = 0.004 < 0.05$ means that there is a significant relationship between giving chemotherapy drugs (vesikan) with extravasation events in cancer patients in Teguh Pure Hospital in 2018. According to researchers, from the results of this study indicate that the most patients who occur extravasation are patients who are given the drug chemotherapy adriamycin (doxorubicin). Incidence of extravasation can also depend on the number of drugs obtained, the duration of treatment and the general health condition of the cancer sufferer. Vesikan drugs have the ability to cause the formation of blisters or blisters and / or cause tissue damage. In addition, the drug can also cause pain in the injection position or along the vein, with or without causing an inflammatory reaction. Some drugs have the potential to cause ulcers in tissue tissue, due to the large concentration of exposed drugs. If you are not careful, it can cause excavation.

According to Smith's research (2009), the administration of chemotherapy drugs for vesic drugs should be given through central venous access, because vesic drugs can cause extravasation of chemotherapy drugs if given through small peripheral venous access. It is better if the drug is given through peripheral veins, use peripheral venous access which is big, elastic and doesn't manipulate movement much. Meanwhile, the results of the study found that nearly two-thirds of the samples used peripheral venous access in metacarpal and half used vesicant chemotherapy drugs.

In contrast to the results of Cecilia's research (2015) that from the research conducted, there is no relationship between the type of drug with the incidence of extravasation of chemotherapy drugs.

Oestreicher (2007) says that the risk factors for extravasation are the device, drug, location, patient and doctor involved. This is in accordance with what the researchers found in this study

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because the results obtained that the samples using metacarpal veins and those using irritant type drugs experienced extravasation events. Geddie's research (2013) says nurses are responsible for managing anti-cancer drugs, managing side effects, and nurses must be critical in responding to them. The role of nurses is very important in the management of prevention of extravasation, nurses as executors or providers of nursing care must be able to provide holistic services that look at all aspects both biological, psychological, social, and cultural.

Gilbar's research (2006) shows that the class of drug vinca alkaloids can be given slowly and safely with a small volume and can be written with a small volume also to prevent extravasation. In this study, almost 50% of respondents used vesikan or vinca alkaloid type, this group can cause extravasation, so that accurate treatment is needed in the administration of chemotherapy drugs ranging from venous preparations to be used, drug dilution, to administration and checking of blood vessels during giving.

4. Conclusion

Based on the results of research that has been done and has been presented previously can be concluded as follows:

- The majority of respondent drug types Adriamycin (doxorubicin) (90.2%), a minority of respondent drug types Methotrexate (1.6%).
- Majority respondents did not experience extravasation (85.2%), a minority of respondents experienced extravasation (14.8%).
- The administration of chemotherapy drugs (vesikan) is significantly related to the incidence of extravasation in cancer patients in Medan Teguh Murni Hospital in 2018. p-value 0.004 < 0.05.

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