

KEJADIAN *DIARRHEA* PADA PASIEN KANKER SERVIKS SETELAH PENATALAKSANAAN KEMOTERAPI

(The Incident of Diarrhea among Cervical Cancer Patients Post Chemotherapy Treatment)

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ABSTRAK

Pendahuluan. Kanker serviks merupakan penyakit terbanyak kedua yang diderita oleh perempuan. Kemoterapi merupakan pengobatan utama untuk kanker serviks. Kemoterapi mempunyai beberapa efek samping, salah satunya adalah *diarrhea*. *Diarrhea* menyebabkan penderita kanker serviks lebih menderita. Penelitian ini bertujuan untuk menganalisis faktor yang menyebabkan *diarrhea* pada penderita kanker serviks setelah mendapatkan kemoterapi. **Metode.** Penelitian ini menggunakan metode analitik deskriptif dengan desain retrospektif. Populasi dalam penelitian ini adalah pasien yang telah menjalani kemoterapi pertama. Sampel didapatkan sebanyak 21 orang dengan teknik *purposive sampling*. Variabel independen meliputi obat kemoterapi, jenis kemoterapi, stadium kanker, stress, dan makanan. Variabel dependen adalah *diarrhea*. Data dikumpulkan dengan menggunakan kuesioner, kemudian dianalisis menggunakan *chi square* dengan tingkat signifikansi $\alpha \leq 0,05$. **Hasil.** Uji statistik menunjukkan bahwa obat dan jenis kemoterapi tidak berhubungan dengan kejadian *diarrhea* ($p:0,598$ dan $p:0,336$). Sedangkan faktor yang berhubungan dengan kejadian *diarrhea* yaitu stadium kanker ($p:0,022$), *stress* dan jenis diet ($p:0,00$). **Diskusi.** Dapat disimpulkan bahwa kejadian *diarrhea* pada pasien kanker serviks pasca kemoterapi dipengaruhi oleh faktor stadium kanker, *stress*, dan makanan. Berdasarkan hasil tersebut diperlukan pendidikan kesehatan tentang jenis makanan yang dapat menyebabkan *diarrhea*, prosedur kemoterapi dan efek sampingnya, dan peningkatan dukungan untuk pasien dengan kanker serviks.

Kata kunci: kanker serviks, kemoterapi, *diarrhea*

ABSTRACT

Background: Cervical cancer is second most diseases suffered by women. Chemotherapy is primary treatment for cervical cancer. Chemotherapy has some side effect, and one of them is diarrhea. Diarrhea make cervical cancer suffered more. The purpose of this research was to analyze the factors that caused diarrhea among cervical cancer patients after chemotherapy. **Method:** This research uses descriptive analitic method with retrospective design. The population in this research is all patients who had post first chemotherapy. Sample in this study were 21 respondents, with purposive sampling. Variable independent were type of chemotherapy drugs, character of chemotherapy, staging, stress and dietary. Variable dependent was diarrhea. Data collected using questionnaire. Data were analyzed using chi square test with level of significant $\alpha \leq 0,05$. **Results:** The result of the study reveals that the type of the chemotherapy drug and the character of chemotherapy has no correlation with the incident of diarrhea with p value ($p:0,598$ and $p:0,336$). The factors that has correlation with diarrhea were stage of cancer ($p:0,022$), stress and dietary ($p:0,00$). **Conclusion:** It can be concluded that incident of diarrhea was related to staging, stress and dietary. Thus, very important to give health education about dietary causing diarrhea, chemotherapy procedural and it's sides effects, and also increase supports for patient with cervical cancer.

Keyword: cervical cancer, chemotherapy, diarrhea

INTRODUCTION

Indonesia is one of developing countries which have sufficient serious problems about cancer. Two types of cancer with the highest incidence on women are breast cancer and cervical cancer. Cervical cancer management requires integrated treatments of various disciplines, clinical basis, in terms of diagnosis and therapy. Chemotherapy is the treatment of cancer using drugs or hormones (Rasjidi 2007). Chemotherapy is effective towards spreading or even localized disease. Treatment with chemotherapy manage to increase the cure rate of cancer, but there are some therapeutic effect accompaniments such as bone marrow depression, gastrointestinal reactions, impaired

liver and kidney function, cardiotoxicity, pulmototoxicity, neurotoxicity, allergic reactions, alopecia, melanosis, and thrombophlebitis. In long term, the effects could lead to carcinogenesis and infertility (Wan Desen Sun Yatsen University, cancer center (2008). The research reported about 7% to 10% of cancer patients admitted to hospital due to diarrhea post therapy (Ferrell et al. 2010). The diarrhea during post-chemotherapy has not been well managed because diarrhea occurred at home. Diarrhea on cervical cancer patients post chemotherapy can not be underestimated because it threatens patient's lives, if it is left unchecked and will worsen the patient's medical condition as well. Factors related to the incidence of diarrhea in patients

with post-chemotherapy for cervical cancer can't be explained yet.

In the world wide, cervical cancer still have a huge number of cancer incidents among women after breast cancer. Cervical cancer is the leading cause of cancer death in women of reproductive age in developing countries (Rasjidi 2007). Based on data from WHO (2010), a woman dies from cervical cancer every two minutes in the world, or about 30 people per hour. Cancer incidence in Indonesia is not yet known with certainty, because there has been no population-based registry. Globocan (2002), the IARC (International Agency for Research on Cancer) estimates the incidence of cervical cancer is 16 per 100,000 women (Dinkes 2012). According Kuntarti (2011), in Indonesia every 1 hour a woman dies from cervical cancer, this is because in Indonesia more than 70% of cervical cancers are found after entering an advanced stage IIB or above (OAGIN, 2011). Data of East Java Health Office shows increase in the numbers of patients with cervical cancer last three years. Distribution of cervical cancer hospitalized in 2011 were as many as 790 cases and the death number were 29 patients (Dinkes 2012).

Dr. Soetomo General Hospital is a type A hospital which has good and adequate facilities for the treatment of cancer. Cervical cancer patients who were treated at Dr. Soetomo General Hospital generally in stage IIa upwards so that they need chemotherapy. The results of interviews in 5 patients with cervical cancer who received chemotherapy show that, all of patients complained about nausea, vomiting, hair loss, fatigue, and diarrhea. Majority of patients said they had suffered diarrhea at homes around three days post chemotherapy. Diarrhea is generally classified into six categories: secretory, exudative, dysmotility, osmotic, malabsorbtive, and diarrhea due to side effects of treatment (Benson, B., & Stein 2009). Diarrhea in chronic diseases could be due to medication, diet, tumor, radiotherapy, intestinal obstruction, concomitant diseases such as IBS (inflammatory bowel disease), malabsorption, infections (Rasjidi 2010a). Other factors can cause diarrhea due to stress trigger chemicals such as serotonin which affects the brain when you're anxious and it can alter bowel movements. Cervical cancer patients are vulnerable to the stress. The incidence of stress in patients with cervical

cancer can be caused by cervical cancer disease or long and painful treatment procedures. Chemotherapy increases the stress of cervical cancer patients because it has various side effects (Wan Desen (Sun Yatsen University, cancer center 2008). Diarrhea associated with chemotherapy is called CID (chemotherapy-induced diarrhea). It can cause exudative diarrhea due to damage of the intestinal mucosa (Bisanz 2010). Some type of chemotherapy used in patients with cervical cancer monotherapy are cisplatin, carboplatin, 5-Fluorouracil (5-FU®), methotrexate, paclitaxel, gemcitabine, doxetel (Rasjidi 2007). Drug types 5 - Fluorouracil (5-FU®) does have toxicity, especially in the gastrointestinal mucositis and stomatitis, and diarrhea resulting. Other types of chemotherapy drugs that can cause diarrhea is Xeloda, Irinotekan (CPT-11), and Iressa (gefitinib). Series of chemotherapy regiments depending on the stage of cervical cancer and patient performance status (Rasjidi 2010a). The effect of diarrhea appears as a result of toxicity of chemotherapy drugs (Benson, B., & Stein 2009).

The involvement of relevant agencies and medical personnel are needed as well as public awareness so that, the incidence and mortality of cervical cancer can be minimized, especially by changing the pattern of lifestyle and early detection screening. Cancer can happen to everyone, on any part of the body but it can be prevented. There are some concrete actions cancer prevention, for instance avoiding cigarette smoke, limit alcoholic drinks, increasing exercise, eating healthy foods. Chemotherapy is the main alternative for the treatment of cervical cancer whether they are curative, palliative or adjuvant. Some various negative side effects caused by chemotherapy are unavoidable. Diarrhea can cause the patient not able to move outside the home, increasing weakness, dehydration, and contribute to a feeling of lack of control and depression all of which affect the self-care of patients, and causes the of decrease patients quality of life (QoL) and it go worse into life threatening if it is untreated. The role of nurses could be very important to recognize, educate and manage diarrhea and manifestations (Ferrell et al. 2010). It is important for nurses to recognize the onset of diarrhea in patients post chemotherapy. The purpose of this study was

to analyze factors associated with the incidence of diarrhea in cervical cancer patients post chemotherapy. The factors examined included: types of chemotherapy, drugs of chemotherapy, stage of cancer, stress, and diet.

METHOD

This research used descriptive analytic design. The population in this study were patients with cervical cancer who received chemotherapy in Merak Ward Dr. Soetomo General Hospital. Samples in this study were 21 respondents based on the inclusion and exclusion criteria taken by purposive sampling. The independent variable were type of chemotherapy, chemotherapy drug, stage of cancer, stress, and diet. The dependent variable was the incidence of diarrhea. The study was conducted at Merak ward Dr. Soetomo General Hospitals for 2 months between January to February 2013. The research instrument was a questionnaire with enclosed statement. Tests to measure the level of stress are the questionnaire DASS 42 (Depression Anxiety Stress Scale 42)(Lovibond 1995). The data were analyzed using fisher's exact test and chi square.

RESULT

Table 1 Characteristic of demography

Demography	Category	f	%
Age	20-30 years old	1	5
	31-40 years old	2	10
	40-50 years old	11	52
	>50 years old	7	33
Marrital Status	Married	20	95
	Widow	1	5
Job	Housewife	5	24
	Officials	2	10
	Farmer	11	52
	Private	3	14
Education	Elementray	15	71
	Yunior High School	2	10
	Senior High School	4	19
Child number	1-2	3	14
	>2	18	86
Contraception	Pills	3	14
	IUD	8	38
	Injection	5	24
	None	5	24
N		21	100

Demographic data showed most respondents were aged 40-50 years (52%), and married (95%). The majority of respondents worked as farmers (52%), with primary level of education background (71%), the number of their children >2 (86%), and mostly they used IUD (38%).

Table 2 Analysis of chemotherapy drugs and incident diarrhea

Chemotherapy Drug	Diarrhea (-)		Diarrhea (+)		Σ	%
	f	%	f	%		
	Cisplatin	12	57	4		
Paclitaxel and carboplatin	3	14	2	10	5	24
Total	15	71	6	29	21	100

Fisher's Exact Test : p = 0,598

The types of drugs are given based on clinical cervical cancer cells to the mechanism of action of anti-tumor drugs. Results of the analysis of Fisher's Exact Test was obtained p = 0.598 ($\alpha < 0.05$), it means there is no relationship between the type of chemotherapy with diarrhea.

Table 3 Analysis type of chemotherapy and incident diarrhea

Type of Chemotherapy	Diarrhea (-)		Diarrhea (+)		Σ	%
	f	%	f	%		
	Neoadjuvant	7	33	1		
Primary	8	38	5	24	13	62
Total	15	71	6	29	21	100

Fisher's Exact Test : p = 0,336

Chemotherapy is given based on the purpose and timing of chemotherapy drugs. Results of the analysis of fisher's exact test was obtained p = 0.336 ($\alpha < 0.05$), it means there is no relationship between the nature of chemotherapy with diarrhea.

Table 3 Analysis of cancer stadium and incident diarrhea

Cancer Stadium	Diarrhea (-)		Diarrhea (+)		Σ	%
	f	%	f	%		
	Stadium II	9	43	0		
Stadium III	6	28	5	24	11	52
Stadium IV	0	0	1	5	1	5
Total	15	71	6	29	21	100

Chi Square p = 0,022
Koefisien Kontingensi = 0,516

Cervical cancer staging by histopathologic and clinical characteristic cervical cancer cells. Results of the analysis of Chi Square p = 0.022 contingency coefficient = 0.516, it means there is a relationship between the stage of the cancer with the incidence of diarrhea.

Table 5 Analysis stress and incident diarrhea

Stress	Diarrhea (-)		Diarrhea (+)		Σ	%
	F	%	f	%		
	Normal	9	43	0		
Mild	6	29	5	23	11	52
Moderate	0	0	1	5	1	5

Severe	0	0	2	10	2	10
Total	15	71	6	29	21	100

Chi Square p = 0,000
Koefisien Kontingensi = 0,685

Stress is not specific response to the of the body disrupted and impact on physical, psychological, intellectual, social and spiritual from cervical cancer and its treatment procedure. Results of the analysis of Chi Square p = 0.000, contingency coefficient = 0.685, it means there is a relationship between stress and the incidence of diarrhea

Table 5 Analysis Diet Type and incident diarrhea

Type of Diet	Diarrhea (-)		Diarrhea (+)		Σ	%
	F	%	f	%		
	Low Risk	15	71	1		
Moderate Risk	0	0	3	14	3	14
High Risk	0	0	2	10	2	10
Total	15	71	6	29	21	100

Chi Square p = 0,000
Koefisien Kontingensi = 0,662

Dietary risk of diarrhea in patients post chemotherapy include high fiber foods, spicy foods, high-fat foods, food contains a lot of gas. Results of the analysis of Chi Square p = 0.000, contingency coefficient = 0.662, it means there is a relationship between the type of diet with diarrhea.

DISCUSSION

Type of drug does not determine the incidence of diarrhea after chemotherapy. 4 of 16 respondents who use cisplatin experienced diarrhea. 2 of 5 respondents using paclitaxel + carboplatin, have diarrhea. According to Hoff at. All., (2011) in Bizans et al. (2010), there are several types of chemotherapy drugs that cause diarrhea including paclitaxel group as much as 38% (Bisanz 2010). Type of drug cisplatin has no direct effect on gastrointestinal. The side effects of cisplatin include: nefrotosik, ototoxicity, hypomagnesemia, nausea, vomiting, anaphylactic reaction, myelosuppression and anemia (Rasjidi 2007). Cisplatin can cause diarrhea if the gift exceeded the limits of patient toxicity (Benson, B., & Stein 2009). Almost all classes of anti-tumor drug (antimetabolite, antibiotic class, metabolite protein inhibitors, topoisomerase inhibitors, hormone class, class of molecular targets) are toxic chemical structure and a different mechanism. Chemotherapy cause immunosuppression and weaken the general condition of the patient due to side effects of the type of chemotherapy drugs given so that

affect the metabolism of the gastrointestinal tract and also lead to parasitic infections (Giardia lamblia, Entamoeba histolytica, cryptosporidium), fungi (candida), bacteria (Clostridium difficile, shigella, salmonella) , viruses (rotavirus, cytomegalovirus, herpes simplex, hepatitis, Norwalk virus) into the gastrointestinal thus causing diarrhea.

There are more respondents who did not experience diarrhea, perhaps because most of them used the chemotherapy drug cisplatin than the respondents who received the chemotherapy drug paclitaxel + carboplatin types. This is because cisplatin (DDP) is the primary drug of cervix cancer (Rasjidi 2009). The amount of the percentage of respondents who experienced diarrhea after receiving carboplatin + paclitaxel compared with cisplatin literacy accordance with the theory that the chemotherapy drug paclitaxel causes diarrhea incidence by 38% (Bisanz 2010). Respondents who use chemotherapy first series, indirectly related to drug toxicity type of cisplatin which is still low and can be tolerated by the patient.

Drug characteristics do not determine the incidence of diarrhea post chemotherapy. 1 of 8 respondents with neoadjuvant chemotherapy has diarrhea. 5 of 13 respondents with primary chemotherapy characteristic get diarrhea from 13 respondents. Chemotherapy characteristics based on the objective type of chemotherapy treatment of cervical cancer, is adjuvant, neo adjuvant or primary. There are more respondents with primary chemotherapy have diarrhea because primary chemotherapy characteristic is curative so that it has high toxicity. There are fewer respondents who obtained neo adjuvant chemotherapy suffer have diarrhea, this may be because the majority of respondents with neo adjuvant cervical cancer stage II so that the general condition is better than those who received primary chemotherapy with stage of cancer.

The higher the stage of cervical cancer, the more increasing incidence of diarrhea post chemotherapy. Respondents with stage II were 9 respondents, none had diarrhea. One respondent with stage IV experienced diarrhea. 5 respondents with cervical cancer stage III have diarrhea. According to research, stage is an estimate of the possible spread of disease (Benson, C. R., & Pernoll 2009). Based on the FIGO, stage III carcinoma has spread to

the pelvic wall, whereas in stage IV tumors have spread far (Dunleavy 2009). Cervical cancer stage III to IV relating to the general condition of the patient that is drop of patients health due to the decrease metastasis of cancer cells to other organs so that will affect a patient's ability to tolerate the side effects of chemotherapy drugs and immune suppression due to infection that occurs easily after chemotherapy. Advanced-stage patients will experience tortured feeling by the disease. Patients experience physical weakness, as well as the side effects of the therapy include diarrhea post chemotherapy.

The higher stress, the incidents of diarrhea will more increase. Respondents in normal level of stress, have no diarrhea. A total of 6 respondents experience stress post-chemotherapy and 100% had diarrhea, that is 1 person with mild stress, 3 people with moderate stress, and 2 people with severe stress. Higher stress experienced by respondents at the younger age category 20-30 years and 31-40 years. The stress totally impact on individuals against physical, psychological, intellectual, social, and spiritual, stress can also disturb physiological equilibrium (Hawari 2011). Stress experienced by patients with cervical cancer can trigger the production of serotonin in the brain that can improve the work of the gastrointestinal tract, bowel movements increase and eventually cause diarrhea. Chemotherapy can be a source of stress for cervical cancer patients, (Wan Desen (Sun Yatsen University, cancer center 2008). If the patient has severe anxiety towards chemotherapy then psychological response after chemotherapy appears to be more severe. Stress has a direct effect on diarrhea, and side effects of chemotherapy drugs can also cause stress to the patient. Respondents suffering from stress express that they are fear to undergo their first chemotherapy and reactions afterwards. Measurement of patient stress was measured using the DASS. Item of statements often expressed respondents with stress is irritable because of trifles. The lack of family support towards a widow stress of chemotherapy, causing diarrhea post chemotherapy.

The more risky type of diet consumed, the more increasing incidence of diarrhea post chemotherapy. There are some respondents whose diet is at risk of diarrhea, 1 of 15 respondents with low risk and moderate risk

diet have diarrhea. While all respondents who have heavy risk diet experienced diarrhea. One of the causes of diarrhea patients with cancer is diet (Benson, B., & Stein 2009) (Rasjidi 2010b). Stern (2003) suggest diet foods to avoid cervical cancer patients post chemotherapy, such as: milk, cheese, yogurt, ice cream, coffee, tea, soft drinks, chocolate, glucose, acidic juices, juice sorbitol, high-fiber foods, and cause gas, irritation, high-cholesterol foods, spicy foods, and pasta (Ferrell et al. 2010). These various kinds of food are classified to facilitate the respondents and the social conditions of the respondent. The higher the dietary risks of respondents, the higher the risk of diarrhea will be experienced by respondents. Great number of respondents who experienced diarrhea with diet high risk because patients do not know the foods to avoid post-chemotherapy. Respondents educational background were mostly graduates of elementary, relates to the ability of respondents receive information diarrhea prevention and treatment of post-chemotherapy. Generally, people had diarrhea after being at home. Consumption of food to distract post chemotherapy nausea, such as spicy foods and acidic taste can trigger diarrhea.

CONCLUSION AND RECOMMENDATION

Conclusion

Types of drugs, and the nature of the chemotherapy drugs are not associated with the incidence of diarrhea post chemotherapy. The higher the stage of cancer of the cervix, the more increasing the incidence of diarrhea post chemotherapy. Stress experienced by patients increases the incidence of diarrhea post chemotherapy. Type of risky diet that is consumed, increase the incidence of diarrhea post chemotherapy.

Recomendation

It should be given continuous information on cervical cancer patients about management of diarrhea, health education about cervical cancer, chemotherapy procedures, and the side effects there of, and taking care patients with diarrhea post chemotherapy.

Patients need to get emotional support in anticipation of the psychological needs. Patients need to consume a diet that is not at

risk to prevent diarrhea. Hospital need to improve cross-sectoral cooperation between health centers on palliative care by conducting home visit to anticipate problems after chemotherapy. For further research can investigate other side effects experienced by patients after chemotherapy with larger samples and the method of cohort.

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