MANAGEMENT OF CHEMOTHERAPY-INDUCED NAUSEA AND VOMITING USING GINGER AROMATHERAPY IN CANCER PATIENTS: CASE STUDY AND LITERATURE REVIEW

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Abstract

Nausea and vomiting are prevalent symptoms of antineoplastic chemotherapy. More than 50% of patients with cancer have reported that chemotherapy-induced nausea-vomiting (CINV). One of the complementary therapies that can reduce nausea and vomiting in patients undergoing chemotherapy is ginger aromatherapy that able to change the mood, reduce psychological symptoms such as stress and also provide a comfortable feeling that can reduce nausea and vomiting in patients undergoing chemotherapy. The purpose this study to evaluate the effect of ginger aromatherapy in breast cancer patients undergoing chemotherapy. Method used case study of 2 respondents with a ginger aromatherapy intervention by giving 5-10 drops of inhaler stick by inhalation for 5-10 minutes and repeated every 30 minutes for 4 times then, evaluate 12 hours later. It is also used review of research journals by Google Scholar, PubMed, Ebscho, and NCBI with the keywords. After intervention before and after giving ginger aromatherapy there was a decrease in nausea and vomiting scores according to the Rhodes Index of Nausea Vomiting and Retching (RINVR). The use of ginger aromatherapy yielded positive results to reduce nausea and vomiting complaints in breast cancer patients undergoing chemotherapy.

Keywords: *Ginger aromatherapy, nausea, vomiting, chemotherapy*

INTRODUCTION

Breast cancer is a disorder in the growth of normal breast cells where abnormal cells arise from normal cells, multiply and infiltrate lymph tissue or blood vessels[1–3]. One of the treatments for breast cancer is chemotherapy. Chemotherapy is a treatment in which the drug is given to spread throughout the body and can reach cancer cells that have spread[4,5]. The goal of chemotherapy is to kill the DNA in abnormal cells and cause the cells to self-destruct[6,7].

The use of chemotherapy drugs also has side effects, one of which is excessive nausea and vomiting. The side effects of chemotherapy are not the same for everyone. A person undergoing chemotherapy may experience extreme nausea and vomiting after undergoing chemotherapy while other patients may not experience any side effects[8,9]. Nausea is the unpleasant sensation of feeling like throwing up and is often associated with pallor, cold sweats, stomach pain and intestinal contractions, and reflux of small intestine contents into the stomach[10]. While vomiting is a response from the digestive tract in which food is expelled from the stomach to the mouth by force or force[11]. Nausea and vomiting are also considered as an event that occurs in three stages namely nausea, retching (movements and sounds before vomiting), and vomiting[12].

Previous studies have stated that more than 60% of patients undergoing chemotherapy complain of nausea and vomiting due to stimulation of the vomiting center by the Chemoreceptor Trigger Zone as a side effect of drugs used during chemotherapy[13]. The main risk factors associated with chemotherapy-induced nausea and vomiting are factors related to the chemotherapy drugs used and the individual characteristics of the patient. Drug-related factors are the potency of the drug in causing nausea and vomiting which is influenced by the type of drug, dose, combination, and method of drug administration[14].

Aromatherapy is a therapy or treatment by using smells derived from plants, flowers, trees that smell good and delicious which can be used to maintain and improve health that is calming[15]. One of the complementary therapies that can reduce nausea and vomiting in patients undergoing chemotherapy is ginger aromatherapy using an inhaler stick that is easy to apply and can change moods, reduce psychological symptoms such as stress and also provide a comfortable feeling that can reduce nausea and vomiting in children. patients undergoing chemotherapy because each ginger essential oil has benefits and medicinal properties that are anti-bacterial, anti-viral, diuretic, sedative and stimulating. This inhalation method is a very efficient method and inhalation is a procedure that is considered very instant and has immediate benefits that can be experienced by its effects compared to other methods[16].

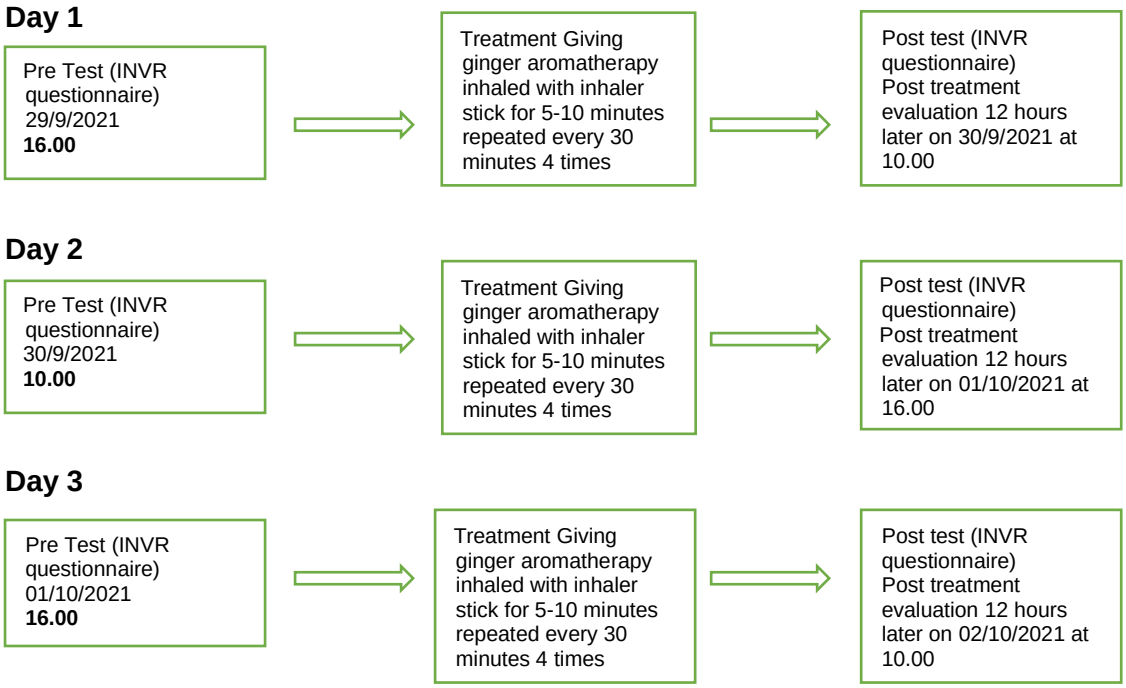
Antiemetic administration as pharmacological therapy to reduce nausea and vomiting is carried out in the premedication process before chemotherapy[17,18]. However, after giving anti-emetics for some time, nausea and vomiting still occur, so the provision of complementary therapy using ginger aromatherapy is expected to be able to reduce nausea and vomiting so that it can increase patient comfort during cancer treatment. Therefore, the researchers conducted this study to determine the effectiveness of ginger aromatherapy in reducing nausea and vomiting complaints in breast cancer patients undergoing chemotherapy[19].

MATERIAL AND METHODS

The method used in writing this journal is used review of research journals related to ginger aromatherapy to reduce complaints of nausea and vomiting in patients undergoing chemotherapy. A literature review is a method of identifying an article, evaluating and interpreting journals or articles analyzed by researchers by revealing relevant questions from the research objectives to be achieved related to the topics and phenomena of concern[20]. In the search for journals using Indonesian and English published in the last 7 years and relevant to the topic, the search was carried out using Google Scholar, PubMed, Ebscho, and NCBI with keywords or keywords according to the problem in the research. The keyword used is “Nausea Vomiting in breast cancer patients undergoing chemotherapy”. Two cases studies

also be done in cancer patient undergoing chemotherapy by giving a ginger aromatherapy. This study used the Rhodes Index of Nausea Vomiting and Retching (RINVR)instrument to measure the score for nausea and vomiting. The measurement using the RINVR instrument consists of 8 items with the smallest total score of 0 and the highest total score of 32. The categories are score 0 = normal, score 1-8 = mild nausea and vomiting, score 9-16 = moderate nausea and vomiting, score 17-24 = severe nausea and vomiting, and a score of 25-32 = very severe nausea and vomiting[21]. This study also had inclusion criteria, namely breast cancer patients who had complaints of nausea and vomiting who underwent chemotherapy, patients with moderate to mild nausea and vomiting. While the exclusion criteria used were breast cancer patients with poor mental conditions and decreased consciousness.

Framework Intervention



Case Description

In the first patient who was given ginger aromatherapy on the first day of chemotherapy by means of aromatherapy inhaled using an inhaler stick for 5-10 minutes, repeated every 30 minutes 4 times[22,23]. The intervention was carried out in 3 treatments in 1 day to 3 days after chemotherapy and every day through evaluation before and after using the INVR questionnaire[24,25]. The results of the evaluation of nausea and vomiting before presenting aromatherapy on the first day with a score of 11, the second day 10, and the third day 7. After giving ginger aromatherapy, there was a decrease in nausea and vomiting on the first day with a score of 9, the second day with a score of 4, and the third day with a score of 3. The results of the evaluation of nausea and vomiting are presented in table.

Table 1. The results of the assessment of nausea and vomiting scores before and after given ginger aromatherapy

	Skor		
Give ginger aromatherapy	**Day 1**	**Day 2**	**Day 3**
Before presenting ginger aromatherapy	11	10	7
After presenting ginger aromatherapy	9	4	3

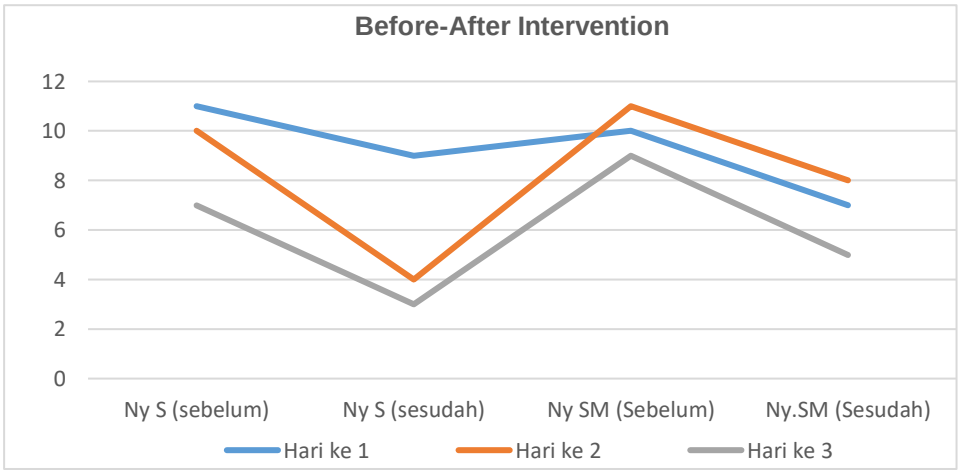
Based on table 1, it can be said that the nausea and vomiting felt by the patient after being given ginger aromatherapy gradually decreased every day[26–28]. So that the administration of ginger aromatherapy can be done as a non-pharmacological technique in handling nausea and vomiting in chemotherapy breast cancer patients. undergo

Likewise, the same condition occurred in the second patient. With the same intervention framework, get the results of the intervention evaluation that nausea and vomiting before giving aroma therapy on the first day with a score of 10, the second day 11, and the third day 9[29]. After giving aroma therapy, there was a decrease in nausea and vomiting on the first day with a score of 7, the second day with a score of 8, and the third day with a score of 5. The results of the evaluation of nausea and vomiting are presented in the following table:

Table 2. The results of evaluation of nausea and vomiting before and after given ginger aromatherapy

	Skor		
Give ginger aromatherapy	**Day 1**	**Day 2**	**Day 3**
Before presenting ginger aromatherapy	10	11	9
After presenting ginger aromatherapy	7	8	5

Based on table 2, it can also be said that there was a decrease in nausea and vomiting in cancer patients undergoing surgery. The decline is happening every day and getting better. Based on the application of the intervention to the two patients above according to the table, it can be said that the data from the two patients experienced a decrease in nausea and vomiting complaints up to the third which can be seen in the graph below:



Based on the data in table 2, it can be seen showing that the value of negatif ranks (0), which shows that no respondents experienced a decrease in knowledge score after

intervention, a positive score ranks (13) which indicates that all respondents experienced an increase in knowledge score and Ties value (0) indicating that none of the respondents had a fixed score before and after being given intervention.

DISCUSSION

From the graph above, nausea and vomiting using the INVR instrument is in accordance with Mutia Dwi Sagita's research with research before and after testing using a stick inhaler with ginger aromatherapy given 4 times with 5-10 minutes showing a decrease in nausea and vomiting scores from moderate to mild scores in the same time[30]. This indicates that there is effectiveness in giving ginger aromatherapy to breast cancer patients undergoing chemotherapy with complaints of nausea and vomiting[31]. Management to relieve symptoms or symptoms caused by the process of taking supportive actions[32,33]. Supportive therapy for nausea and vomiting is usually anti-nausea and vomiting drugs[34]. However, a non-pharmacological approach is also needed. Non-pharmacological techniques in the management of side effects of therapy, namely the provision of complementary therapies[35,36]. Complementary therapies can be in the form of relaxation, hypnosis, aromatherapy, distraction, acupressure and acupuncture[37]. Aromatherapy is a non-pharmacological complementary therapy method that is noninvasive, noninvasive, inexpensive, simple, effective, and without significant and detrimental side effects in reducing nausea and vomiting.

The symptoms of nausea and vomiting in chemotherapy patients are not only influenced by neuropathophysiological factors, but can be influenced by psychological factors and other accompanying symptoms, such as disease progression, current treatment or other non-specific factors that can affect the patient's behavior[38]. Implementation of the effect that is not optimal in the initial cycle can cause a feeling for the patient to the program he is undergoing. This affects the patient's emotional response (anxiety) which can cause nausea, vomiting, and vomiting. Ginger aromatherapy can be an option to increase comfort in patients undergoing chemotherapy in overcoming the effects of chemotherapy[39–42].

The content in ginger is zingiberena (zingirona), zingiberol, bisabilena, kurkumen, zingirol, flandrena, vitamin A, which can block serotonin, a neurotransmitter that is synthesized in serotonergic neuro-neurons in the central nervous system and enterochromaffin cells. which can provide a comfortable feeling so that it can overcome nausea and vomiting. The results of a study on the benefits of ginger in cancer patients who received therapy using a randomized double-blind method in 644 concluded that ginger supplementation significantly reduced the effects[43]. Based on the results of the same study), that the average nausea of post-chemotherapeutic respondents who were given the ginger aromatherapy was lower than the average post-chemotherapy nausea respondents who were not given ginger intervention.

This is in accordance with the opinion that ginger aromatherapy can be an option to increase comfort in patients undergoing therapy in overcoming the effects of therapy. The existence of a very good content in ginger itself causes the aroma of ginger as a good choice as a supportive therapy for surgery[44].

The results of the study are also similar to the results of research on the effect of giving ginger aromatherapy using inhaler sticks to nausea and vomiting in breast cancer patients undergoing chemotherapy at RSUP DR. M. Djamil Padang with results from 22 respondents. Ginger aromatherapy was given using an inhaler stick by inhalation which was carried out 4 times and an evaluation was carried out 12 hours later and the result was a decrease in the average value of nausea and vomiting[45].

CONCLUSION

Management of inpatient care in cancer patients undergoing chemotherapy with the main problem of nausea and vomiting, after being given an intervention in the form of ginger aromatherapy was reduced quantitatively. This makes breast cancer patients undergoing chemotherapy feel comfortable because nausea and vomiting are reduced by enjoying ginger aromatherapy.

Based on this study, it can be found that there is an effectiveness of giving ginger aromatherapy to breast cancer patients who undergo surgery with complaints of nausea and vomiting. It can be seen that before and before giving ginger aromatherapy there was a decrease in the intensity of nausea and vomiting in patients from mild. Nausea and vomiting in breast cancer patients who underwent previous chemotherapy before being given ginger aromatherapy who experienced moderate nausea and vomiting and before being given ginger aromatherapy included mild nausea and vomiting. The results of this case study provide good support to be applied in health services both in hospitals and communities for cancer patients.

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