

Research Article

The Impact of Sucking Bits of Ice Containing Mint on Nausea and Vomiting During Chemotherapy in Patients with Breast Cancer

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ABSTRACT

Background: Cancer remains as one of the most challenging diseases to be tackled in today's world. Improving treatment methods can contribute to fighting cancer better than before. Breast cancer is one of the most common and significant diseases which problematizes a large number of women. Various methods are used in order to cure breast cancer, including surgery, radiotherapy and chemotherapy. Chemotherapy is one of the oldest and most common treatments for cancer. Nausea and vomiting are the most common side effects of chemotherapy. Due to its limited effect and the risk of anti-nausea medications, one of the critical and relatively safe measures is to use CAM (Complementary and Alternative Medicine). Ice therapy is one of the methods in this regard. **Materials and Methodology:** This study is a clinical trial in which 60 patients were divided randomly into intervention and control groups (each group containing 30 people) based on inclusion criteria. In the control and experimental groups, 30 cc tap water and 30 cc ice containing mint extract were used, respectively, during chemotherapy. First, in both groups, nausea was examined through VAS, and vomiting was examined through the number of incidences. At the end of chemotherapy, nausea and vomiting levels were recorded in both groups. Finally, the data obtained (nausea and vomiting levels) from both groups were compared. **Results:** The results showed that the level of nausea became significantly lower in the intervention group compared to the same rate in control group (P-value: 0.022), but the difference in the number of vomiting incidences in the intervention group and the control group was not significant (P-value: 0.770). **Conclusion:** According to the results, the use of ice containing mint is effective in healing feelings of nausea caused by chemotherapy, while it is not effective in treating vomiting caused by chemotherapy.

Key word:Ice, Mint, Nausea, Vomiting, Chemotherapy, Breast Cancer

INTRODUCTION

Cancer is considered as a major health problem in the United States of America and the rest of the world (1). According to the latest statistics released by the World Health Organization in 2011, cancer is the second leading cause of death after cardiac-vascular diseases in the world (3 and 2). Nowadays, cancer is one of the most important health problems and breast cancer is a major health problem for women around the world (4).

Breast cancer is a significant concern for women, because it is the most common type of cancer after lung cancer and the second leading cause of cancer deaths among women (5). Breast cancer is the cause of 21.4 percent of total malignancies and the most common cancer among women (5). Various studies suggest that the age of developing breast cancer in Iran is about a decade less than other countries (6).

Breast cancer patients suffer from a wide range of physical, psychological and social issues during the process of diagnosis and treatment.(5) Various methods are used in cancer treatment, including surgery, radiotherapy and chemotherapy. Chemotherapy is one of the oldest and most common cancer treatments (2). Chemotherapy is said to affect the quality of life of the patients immensely. This treatment option causes a number of physical, mental, and psychological side effects in patients. The physical effects include diarrhea, hypotension, drowsiness, fatigue, pain, mucositis, dry mouth, constipation, nausea and vomiting, etc. (7 and 2). Nausea and vomiting are among the most common (8-10), troubling and unpleasant side effects of (11 and 9) this disease (12 and 2). Due to the limited effect and dangerous side effects of antiemetics, one of the basic and relatively safe measures in this regard is using CAM. Ice therapy is one of these methods. Ice therapy is based on the idea that coldness by creating vasoconstriction causes mucus to be less exposed to toxic agents (13-15). Consequently, the cold ice bits cause vasoconstriction in the environmental parts of the gastrointestinal tract (esophagus and stomach) and reduce the arrival of chemical materials to these areas, which would result in less irritation in digestive system and would also decrease the level of nausea and vomiting. Mint is used as a flavoring in food, tea, toothpaste, washing solutions and medications. Menthol of mint acts as a stomach-sedating drug, reducing nausea and vomiting by relaxing the muscles of the stomach and causing numbness of stomach wall. Mint also has the effect of sedation. Aromatherapy accompanied by mint treatment has various psychological impacts on the patient along with reducing nausea and vomiting (16). This study was conducted to examine the effect of sucking ice bits containing mint extract on nausea and vomiting during chemotherapy in cancer patients referred to Omid hospital in Mashhad.

MATERIALS AND METHODOLOGY

This study is a clinical trial, in which 60 breast cancer patients who were referred to the oncology department of Omid medical center of Mashhad from September to November 2015 were selected and assigned into two groups randomly. Data collection tools included personal information form of subjects (age, education level, residence, grade of disease), a numerical scale VAS, and vomiting record measure. Inclusion criteria of patients included written consent to participate in research, breast cancer, reflux GG (burping), swallowing ability, and the ability to read, write, and see. The current study was conducted after obtaining written consent to do fieldwork from Medical Sciences of Sabzevar University and presenting it to Omid Hospital of Mashhad University under the supervision of the oncological center. Breast cancer patients were randomly assigned into two groups: control (routine Antinausea diet consumption) and intervention (using the ice containing mint extracts and routine Antinausea diet). First, in both groups (control and intervention), nausea was examined through Graphic Rating Scale (VAS) and vomiting was examined through the number of vomiting incidences. In addition to the routine measures, 30 cc of tap water was given to the control group during chemotherapy and at the end of chemotherapy, nausea and vomiting levels were examined. In addition to routine measures, patients of intervention group received 30 small pieces of ice containing 30 drops of supermint at the size of 1 * 1 containing 1 ml of water and a drop of mint extract 5 minutes before the start of chemotherapy. At the end of chemotherapy, nausea and vomiting levels were recorded in both groups. Nausea and vomiting levels in both groups were compared with each other. Data was collected by using Spss software and was analyzed through t-test.

RESULTS

The sample of this study included 60 patients with breast cancer, who met all the inclusion criteria. Demographic information and clinical characteristics in both groups were as follows:

The mean scores of age and standard deviation of the patients in the control group were 38.7 and 7.74, respectively, while the age mean scores and standard deviation of the patients in the intervention group were 41 and 8.25, respectively. Using the T-test, it can be said that the difference of means were not significant with confidence of 95%. P-value = 0.27 Education level difference in two groups was not significant using Chi-square test with confidence of 95% .P-value=0.606

Table 1: mean and SD of nausea before intervention

Group	Mean	SD
Control	1.533	1.382
Mint ice	1.666	1.241

Using T-Test, the difference in nausea levels was not significant between the two groups before the intervention. P-value: 0.696. Mean and standard deviation of vomiting incidences before the intervention were

Table 2: mean and SD of vomiting before intervention

Group	Mean	SD
Control	0.1	0.305
Mint ice	0.066	0.253

Using T-Test, the difference in vomiting incidences was not significant between the two groups after intervention. P-value: 0.647

The mean and standard deviation scores of nausea incidences after the intervention were respectively

Table 3: mean and SD of nausea incidences after intervention

Group	Mean	SD
Control	2.9	1.787
Mint ice	1.96	1.245

Using T-Test, the difference in nausea levels was significant between two groups. P-value: 0.022

The mean and standard deviation scores of vomiting incidences after the intervention were respectively 0.266 and 0.449 in control group,

Table 4: mean and SD of vomiting after intervention

Group	Mean	SD
Control	0.266	0.449
Mint ice	0.233	0.430

Using T-test, the vomiting level difference between the two groups was not significant. P-value: 0.77

DISCUSSION

This study was conducted to examine the impact of sucking bits of ice containing mint on feelings

Disease grade difference between the two groups was not significant using Chi-square test with confidence of 95%. P-value: 0.447

Mean and standard deviation of nausea levels before intervention were respectively 1.533 and 1.382 in the control group, while mean and standard deviation of nausea levels were respectively 1.666 and 1.241 in the mint ice group.(Table1)

respectively 0.1 and 0.305 in the control group, while mean and standard deviation scores before intervention were respectively 0.066 and 0.253 in mint ice group (Table 2).

2.9 and 1.787 in the control group, while mean and standard deviation scores after the intervention were respectively 1.96 and 1.245 in mint ice group (Table 3).

while the mean and standard deviation scores after the intervention were respectively 0.233 and 0.430 in mint ice group (Table 4).

of nausea and vomiting levels during chemotherapy in patients with breast cancer. The results showed that nausea in the intervention group (ice mint) was significantly lower than that of the control group (P-value: 0.022), but no significant difference was found between the two

groups in terms of vomiting incidences (P-value: 0.770). Following an extensive search for databases, further interventional studies examining the impact of mint ice on nausea and vomiting of chemotherapy patients were not found. Therefore, the results of this study were compared to the results of studies which assessed the impact of mint on nausea and vomiting of other groups of patients. In a study conducted by Tate in 1997, the impact of using peppermint on postoperative nausea and vomiting was measured (17). In another case, in a study conducted by Ferruggiari et al in 2012, it was found that the normal saline mint and peppermint have equal impact on post-operative nausea (18). In another study conducted by Najafi et al in 2013, it was found that inhaling peppermint essence had no impact on nausea and vomiting after abdominal surgery (19). Moreover, in a study conducted by Pasha et al in 2012, it was found that mint extracts had no impact on nausea and vomiting levels during pregnancy (20). In a study carried out by Sadegh Shermeh et al in 2010, it was found that ice massage in Nighan region led to reduced nausea and vomiting levels in cancer patients undergoing chemotherapy (21). In this study, fragments and bits of ice containing mint were used to decrease nausea during chemotherapy, which resulted in reduced levels of nausea in patients. In addition, the experiment led to a sense of satisfaction in patients' general state during the treatment. It is recommended that this process be used in the case of conditional nausea (before chemotherapy), delayed nausea, and for other cancer groups.

Considering the impact of a combination of ice and mint on vomiting incidences, the mean score of vomiting incidences in the intervention group (mint ice) was lower than that of the control group. However, this difference was not significant statistically, suggesting a lack of impact of ice containing mint on vomiting incidences. Due to this reason, it is recommended that factors which affect vomiting (diet, anxiety, etc.) be examined further. Furthermore, the

researchers could focus more on the appropriate level and the process of using mint. As a result, further studies are recommended in this area.

CONCLUSION:

Based on the results of this study, the use of ice bits containing mint extract as a non-invasive, simple, inexpensive and less harmful method is recommended alongside with pharmacotherapy in order to decrease nausea in cancer patients. The results of the study showed that chewing bits of ice containing mint extract had no impact on vomiting incidences in the patients. It is recommended that further and more comprehensive studies be conducted in this regard, with larger sample size and different strategies in using mint.

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