



A Study to Assess the Effect of Aromatherapy on Chemotherapy-Induced Nausea(CIN) Among Patients With Cancer in Selected Hospitals at Mangalore

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ABSTRACT

Aim : To assess the effect of aromatherapy on chemotherapy-induced nausea in selected hospital at Mangalore. **Materials and methods :** An evaluatory approach with repeated measures two group pre test post test time series design study was conducted. A purposive sampling technique was used to select 40 patients having CIN , and randomly assigned 20 each to experimental and control group. The subjects were asked to rate the CIN which they experience during or after anticancer chemotherapy in Nausea Assessment Tool. Aromatherapy was administered once in every 15 minutes for duration of one hour. Post intervention test was conducted after the administration of aromatherapy for one hour after each session of aromatherapy in the experimental group and without intervention in the control group. The pretest and post test scores were compared and analysed through descriptive and inferential statistics. **Results :** The findings of the study revealed that using the repeated measures of ANOVA (RM ANOVA) the computed $F(4,95) = 40.61$, $p=0.001$ was significantly greater than the tabled value $F(4,95)= 2.31$, $p<0.05$ which showed that aromatherapy is effective in reducing CIN. **Conclusion :** There was significant reduction in CIN after the administration of aromatherapy which indicate that aromatherapy is a cost-effective, non-invasive, non-pharmacological alternative in the management of CIN.

KEYWORDS

EFFECTIVENESS, CHEMOTHERAPY-INDUCED NAUSEA, COMPLEMENTARY THERAPY, AROMATHERAPY

Introduction

Cancer is a major public health issue and represents a significant burden of disease. At any given point of time, in India it is estimated that there are approximately 2-2.5 million cases of cancer and in each year around 7-9 lakhs new cases are detected and nearly half of these cases die each year.¹ Chemotherapy-induced nausea and vomiting (CINV) is a common side-effect of many [cancer](#) treatments.² Aromatherapy is a form of [alternative medicine](#) that uses plant materials and aromatic plant oils, including [essential oils](#), and other aromatic compounds for the purpose of altering one's [mood](#), [cognitive](#), psychological or physical wellbeing.³

Objectives

- To determine the level of pre interventional and post interventional Chemotherapy –Induced Nausea in the experimental and control group
- To find the effectiveness of aromatherapy on chemotherapy induced nausea among patients with cancer in the experimental group.
- To compare the level of chemotherapy induced nausea among experimental and control group.
- To determine the association between chemotherapy induced nausea and selected demographic variables.

Hypotheses

All hypotheses will be tested at 0.05 level of significance.

H₁: The mean post interventional level of Chemotherapy –Induced Nausea will be significantly lower than the mean pre interventional level of Chemotherapy-Induced nausea in Experimental group.

H₂: There will be a significant difference in the level of chemotherapy induced nausea in the control and experimental group.

H₃: There will be a significant association between the level of chemotherapy induced nausea and selected demographic variables in the experimental group and control group.

Method

An evaluatory study was conducted from February 1st to February 28 among 40 cancer patients with Chemotherapy-Induced Nausea. The inclusion criteria of the study was clients with cancer who are on anti cancer chemotherapy treatment and those who are experiencing CIN. Exclusion criteria of the study was critically ill patients and those with allergy and sinusitis. A purposive sampling technique was used to select 40 patients having CIN , and randomly assigned 20 each to experimental and control group. An evaluatory approach with repeated measures two group pre test post test time series design was used.

Data collection instrument:

Section 1: Baseline proforma consisted of 10 items pertaining to age, gender, occupation, previous experience of chemotherapy, site of cancer, stage of cancer, type of previous treatment, combination of drugs used and dose, type of antiemetic administered, present chemotherapy cycle.

Section 2: Self rating Nausea assessment tool regarding feeling of discomfort, feeling of sweating, excessive salivation, decreased appetite, score of nausea on VAS.

Data collection process: Formal permission was obtained from the concerned authority prior to the data collection. The purpose of the study was explained to them and written consent was obtained. Patients with cancer who reported nausea during or after anticancer chemotherapy were selected by purposive sampling and were randomly assigned to experimental and control group. Baseline characteristics of these subjects were obtained and the subjects were asked to rate

the chemotherapy induced nausea in Nausea Assessment Tool which they experience during or after anticancer chemotherapy. Aromatherapy was given for the experimental group once in 15 minutes for a duration of one hour. Post test was conducted in the experimental and control group immediately after the intervention for one hour.

Results

The mean of pre interventional chemotherapy-induced nausea score of experimental group $\bar{X}_1 = 11.45$ was higher than the mean post interventional CIN score $\bar{X}_2 = 7.5$ in the experimental group. (Table-1)

Table – 2 : Shows that using the repeated measures of ANOVA (RM ANOVA) the computed $F_{(4,95)} = 40.61$, $p=0.001$ was significantly greater than the tabled value $F_{(4,95)} = 2.31$, $p<0.05$ which showed that aromatherapy is effective in reducing chemotherapy- induced nausea in the experimental group.

Table- 3 : Shows that shows that computed 't' value on O_3 ($t_{38} = 3.57$), O_4 ($t_{38} = 2.81$), O_5 ($t_{38} = 4.6$) and $p=0.001$ is significantly higher than the tabled value ($t_{38}=2.02$), $p <0.05$ indicating there is a significant difference in the CIN between the experimental and control group. The computed 't' value on O_1 ($t_{38} = 0.20$), $p=0.001$ is significantly lower than the tabled value ($t_{38}=2.02$) , $p <0.05$ indicating that there is no significant difference in the chemotherapy induced nausea score of experimental and control group between the first and second observation.

There was no significant association between the pre test chemotherapy-induced nausea score and selected demographic variables.

Discussion

Previous reviews shows that the present study is congruent with the findings of the study conducted in Kerala to find the anxiolytic and anti emetic effects of aromatherapy in cancer patients on anticancer chemotherapy in which the result is computed with 't' test which showed that the aromatherapy is effective in experimental group. The 't'test value $t_{(28)}$ was 3.33 which is greater that table value and can be inferred that aromatherapy is effective in experimental group.⁴

This findings are supported by study conducted in Mashhad Medical University in Mashhad, Iran to assess chemotherapy – induced nausea and vomiting, using Mentha spicata and Mentha piperita inwhere the intensity of nausea was significantly reduced in Metntha spicata and Mentha piperita group compared with placebo($p<0.005$).⁵

Conclusion

The results of the present study shown that there was significant reduction in chemotherapy-induced nausea after the administration of aromatherapy. Hence it can be concluded that aromatherapy is a cost-effective, non-invasive, non-pharmacological alternative in the management of chemotherapy-induced nausea.

Table 1: Range, Mean, Standard Deviation of Pre Test and Post Test CIN Score of Experimental Group and Control Group

n=20+20

Groups	CIN			
	Range		Mean± SD	
	Pre test	Post test	Pre test	Post test
Experimental Group	8-16	5-10	11.45 ± 1.95	7.5±1.3
Control Group	8-16	7-14	11.10 ± 2.12	9.8±2.06

Table 2: Effectiveness of Aromatherapy on Chemotherapy-Induced Nausea Score in the Experimental Group n=20

Observation	CIN			P value
	Mean	SD	RM ANOVA F value	
O_1 (Pre interventional)	11.45	1.91	40.61	0.001
O_2	10.45	2.30		
O_3	8.75	1.51		
O_4	7.7	1.65		
O_5	7.15	1.3		

$F_{(4,95)}=2.45$, $p<0.05$

Table 3: Comparison of Level of Chemotherapy-Induced Nausea Between Experimental Group and Control Group. n=20+20

Time of Observation	CIN				
	Group	Mean	SD	t value	p value
$O_1 -O_2$	Experimental	1.05	1.46	0.20	0.001
$O_1 -O_2$	Control	0.90	1.08		
$O_1 -O_3$	Experimental	2.75	1.94	3.57	0.001
$O_1 -O_3$	Control	1.20	0.83		
$O_1 -O_4$	Experimental	3.70	2.02	2.81	0.001
$O_1 -O_4$	Control	2.10	2.07		
$O_1 -O_5$	Experimental	4.30	1.06	4.60	0.001
$O_1 -O_5$	Control	2.15	1.22		

$t_{38}=2.02$ $p<0.05$

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