

Research Article



An Experimental Study to Assess Effectiveness of Acupressure on Relief of Chemotherapy Induced Nausea and Vomiting among Cancer Patients in Selected Hospital, Punjab.

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ABSTRACT

Despite the development of effective antiemetic drugs, nausea and vomiting remain the main side effects associated with cancer chemotherapy. Acupressure at the P6 point is a value-added technique in addition to pharmaceuticals. The study was undertaken with the objectives to assess the effect of acupressure on the relief of chemotherapy induced nausea and vomiting among cancer patients. Quantitative research approach was used. The sample of 40 subjects was randomized into two groups: Experimental and control group. Using Multinational Association of Supportive Care in Cancer antiemesis tool, the reduction of chemotherapy induced nausea and vomiting was measured and comparison made between two groups to see the effectiveness of acupressure on relief of chemotherapy induced nausea and vomiting. In experimental and control group the mean score of number of times feeling nausea, severity of nausea and number of vomiting episodes during first 24 hrs following chemotherapy (i.e. Acute nausea) was 0.50, 2.2, 0.2 and 0.50, 3.25, 0.55 respectively. This result revealed that there is no statistically significant difference between experimental and control group during day 1st. In delayed nausea i.e. 2-5 days the mean score of number of times feeling nausea, severity of nausea and number of vomiting episodes were 0.4, 2.2, 0.18 respectively in experimental group. Whereas in control group mean score of number of times feeling nausea, severity of nausea and number of vomiting episodes were 0.95, 5.35, 0.45 respectively. It was found to be statistically significant difference between intervention and control groups in number of times feeling nausea, severity of nausea and number of episodes of vomiting.

Keywords: Experimental study, Acupressure, Cancer, Nausea and vomiting.

INTRODUCTION

Cancer is a group of diseases characterized by uncontrolled and growth spread of abnormal cells.

There were an estimated 14.1 million cancer cases around the world in 2012, of these 7.4 million cases were in men and 6.7 million in women. This number is expected to increase to 24 million by 2035.¹

There are many treatments of cancer & chemotherapy is the most common treatment. Chemotherapy may be used alone for some types of cancer or in combination with other treatments such as radiation or surgery. While chemotherapy can be quite effective in treating certain cancers, chemotherapy drugs reach all parts of the body, not just the cancer cells. Because of this, there may be many side effects during treatment includes bone marrow suppression, increased susceptibility to infection, nephrotoxicity, anorexia, alopecia, nausea and vomiting.² Chemotherapy-induced nausea and vomiting is classified as either "acute" within 24 hrs post chemotherapy or "delayed" that occurs on days 2–5 of the chemotherapy cycle.

Historically, antiemetic treatment has been improved first by the introduction in 1981 of high-dose metoclopramide which reduced the amount of emesis second by the development of serotonin (5-HT₃) antagonist in the early 1990s, potentiated by concomitant use of corticosteroids which further improved control of emesis.

Acupressure at the P6 point is a value-added technique in addition to pharmaceuticals. It is an ancient healing art that uses the fingers to press key points on the surface of the skin to stimulate the body's natural self-curative abilities.

So acupressure seems to be a good way to complement antiemetic pharmacotherapy, as it is safe, convenient and with minimal costs involved. These make it a cost-effective intervention.

MATERIALS AND METHODS

The present study was conducted in selected hospital of Punjab which is a multi speciality and super speciality hospital.

The target population was the cancer patient undergoing chemotherapy. Using purposive sampling technique, the sample of 40 cancer patients undergoing chemotherapy were selected. Sealed envelope method was used for randomization of the subjects in experimental and control group.

Research design: Randomized post-test only control group design.

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Structured questionnaire to collect demographic data and MASCC (Multinational Association of Supportive Care in Cancer) Antiemesis tool (MAT) was used to assess nausea and vomiting.



Description of intervention

- An acupressure teaching booklet was prepared to teach the patient and a significant family member about the acupressure technique which was validated by acupressure experts.
- The researcher provided an acupressure teaching booklet to the experimental group and teach them about acupressure and role of self acupressure on p6 point to relieve nausea and vomiting.
- The researcher gave demonstration on how to locate and give acupressure on p6 point.
- Then patients were asked to re-demonstrate it on the researcher.
- Before chemotherapy the researcher gave acupressure to subjects in experimental group on p6 point for 5 minutes on both arms.
- And after chemotherapy this procedure was repeated.
- The patients were instructed to give self-acupressure on p6 point for 5 minutes before each meal (total 4 times in a day) and anytime sensation of nausea is felt by the subjects of experimental group.
- Frequency and severity of nausea and vomiting was assessed for 5 days in both experimental and control group using Multinational Association of Supportive Care in Cancer- Anti-emesis tool and recorded in daily log book maintained by the subjects.
- Discharged patients were contacted telephonically.

The analysis of data was done by using descriptive and inferential statistical i.e. by calculating percentage, mean score, standard deviation and tests of measurement i.e. is 't' test, fisher exact test, ANOVA test.

RESULTS

In experimental and control group the mean score of number of times feeling nausea, severity of nausea and number of vomiting episodes during first 24 hrs following chemotherapy (i.e. Acute nausea) was 0.50, 2.2, 0.2 and 0.50, 3.25, 0.55 respectively.

This result revealed that there is no statistically significant difference between experimental and control group during day 1st.

Table 1: Comparison of mean Number of times feeling nausea, severity of nausea and Number of episodes of vomiting during first 24 hrs following chemotherapy in experimental and control group (N= 40)

Day 1 during first 24 hrs.	Experimental group Mean(SD)	Control group Mean(SD)	't'
Number of times feeling nausea	0.50(0.76)	0.50(0.69)	ONS
Severity of nausea	2.2(3.24)	3.25(4.10)	0.89NS
Vomiting episodes	0.2(0.41)	0.35(0.49)	1.05NS

NS=Non- significant

In delayed nausea i.e. 2-5 days the mean score of number of times feeling nausea, severity of nausea and number of vomiting episodes were 0.4, 2.2, 0.18 respectively in experimental group. Whereas in control group mean score of number of times feeling nausea, severity of nausea and number of vomiting episodes were 0.95, 5.35, 0.45 respectively. Number of times feeling nausea and severity of nausea increases in control group from day 1st to day 5th whereas in experimental group it decreases continuously. Episodes of vomiting in experimental group decreases from day 2nd to day 4th and get stabilized on day 5th but in control group it increases continuously. It was found to be statistically significant difference between intervention and control groups in number of times feeling nausea, severity of nausea and number of episodes of vomiting.

Table 1 reveals that the difference between mean score of number of times feeling nausea, severity of nausea and number of vomiting episodes of experimental and control group has been found to be statistically non significant at $p < 0.05$. Hence it is concluded that acupressure has no impact on acute nausea and vomiting.

Table 2 reveals that the No. of times feeling nausea experienced by experimental group and control group was compared for 2-5 days. The average mean score was 0.4 and 0.95 respectively showing statistically significant difference i.e. $t = 2.41$ at $p < 0.05$. Hence it is concluded that application of acupressure decreases frequency of nausea in experimental group.

Table 3 reveals that the severity of nausea experienced by experimental group and control group was compared for 2-5 days. The average mean score was 2.2 and 5.35 respectively showing statistically significant difference i.e. $t = 2.92$ at $p < 0.01$. Hence it is concluded that application of acupressure on P6 point decreases the severity of delayed nausea in experimental group.

Table 4 shows that the No. of episodes of vomiting experienced by experimental group and control group was compared for 2-5 days. The average mean score was 0.18 and 0.43 respectively showing statistically significant difference i.e. $t = 1.78$ at $p < 0.05$. Hence it is concluded that the application of acupressure on P6 point decreases the delayed vomiting episodes in experimental group.



Table 2: Comparison of mean number of times feeling nausea during 2-5 days in experimental and control group

N = 40

2-5 Days number of times feeling Nausea	Experimental group Mean(SD)	Control group Mean(SD)	t'
Day 2	0.65(0.75)	0.70(0.66)	0.223 ^{NS}
Day3	0.35(0.49)	1.00(0.73)	3.28*
Day 4	0.35(0.67)	1.2(0.89)	3.4*
Day5	0.25(0.55)	0.90(0.97)	2.6*
The whole period	0.4(0.62)	0.95(0.813)	2.41*

* = Significant at p < 0.05; NS = Non-significant

Table 3: Comparison of mean score of severity of nausea during 2-5 days in experimental and control group

N= 40

2-5 Days Severity of nausea	Experimental group Mean(SD)	Control group Mean(SD)	t'
Day 2	3.65(3.88)	4.60(3.89)	0.77 ^{NS}
Day3	2.5(3.55)	5.45(3.32)	2.71*
Day 4	1.65(2.96)	6.35(3.31)	4.73*
Day5	1.00(2.05)	5.00(4.21)	3.82*
The whole period	2.2(3.11)	5.35(3.68)	2.92**

* = Significant at p < 0.05; ** = Significant at p < 0.01; NS = Non-Significant

Table 4: Comparison of mean score of number of episodes of vomiting during 2-5 days in experimental and control group

N= 40

2-5 Days number of Vomiting episodes	Experimental group Mean(SD)	Control group Mean(SD)	t'
Day 2	0.3(0.47)	0.35(0.49)	0.33 ^{NS}
Day3	0.2(0.41)	0.45(0.51)	1.71*
Day 4	0.1(0.31)	0.55(0.51)	3.37*
Day5	0.1(0.31)	0.45(0.51)	2.62*
The whole period	0.18(0.38)	0.45(0.51)	1.89*

* = Significant at p < 0.05; NS = Non-Significant

DISCUSSION

The present study showed that the average mean scores of number of times feeling nausea, severity of nausea & number of episodes of vomiting were 0.4, 2.2 and 0.18 in experimental group and 0.95, 5.35 & 0.45 in control group respectively.

Similar results were obtained in the study on "Acupressure for chemotherapy induced nausea and vomiting in breast cancer patients at An-Najah National university in 2009 by Zaida Mohamad Othman Said. The findings of the study showed no difference in incidence of acute nausea and emesis 24 hours following chemotherapy & patients receiving acupressure had statistically significantly decreased chemotherapy induced nausea and vomiting as compared to other groups following 2-5 days of chemotherapy.³

The findings of the present study are also supported by study done in 2004 on the effect of acupressure during chemotherapy cycle for Korean postoperative stomach cancer patients. Findings reported that there was significant difference between intervention and control groups in the severity of nausea and vomiting, the duration of nausea and frequency of vomiting.⁴

The findings of the study are also supported by a study done by Jagon J. Babu in 2013 on Effectiveness of acupressure on nausea and vomiting among cancer patients receiving chemotherapy in selected hospital, Coimbatore. An experimental design with pretest posttest was carefully utilized for 60 patients that were selected by stratified random sampling from G.K.N.M Hospital. The data is collected by using Rhodex index of nausea and vomiting to assess the level of nausea and vomiting by interview method. The study findings point out the effectiveness of P6 acupressure on nausea and



vomiting among cancer patients receiving chemotherapy.⁵

Present study findings are also supported by another study done by Eunyoung Eunice Suh on the effects of P6 acupressure and nurse provided counselling on chemotherapy induced nausea and vomiting in patients with breast cancer. The design of the study was randomized control trial and setting was A university of cancer center in Seoul, Korea. The samples included 120 women who were beginning their 2nd cycle of chemotherapy after definitive surgery of breast cancer having mild nausea during first cycle. The samples divided into four groups randomly: Control, counselling only, P6 acupressure only and P6 acupressure plus nurse provided counselling. The result of the study showed that the level of CINV were significantly different among the groups from 2-5 days.⁶

Findings of the present study are also supported by a study P6 acupressure may relieve nausea and vomiting after gynaecological surgery, conducted by Alkaissi A, Evertsson K, Johnsson V, Ofenbartl L, Kalman S in 2002. 410 women undergoing general anesthesia for elective gynaecological surgery were included. Nausea (scale 0-6), vomiting, pain and satisfaction with the treatment were recorded. The result of this study showed the P6 acupressure is a non invasive method that may have a place as prophylactic antiemetic therapy after gynaecological surgery.⁷

The findings of the present study are contradictory with the study done by Genç A, Can G, Aydiner A on the efficiency of the acupressure in prevention of the chemotherapy-induced nausea and vomiting in 2011. The experimental design was used and patients were divided into two groups i.e. experimental and control group. The result of this study shows that acupressure wristbands was not an effective approach in preventing chemotherapy induced nausea and vomiting.⁸

CONCLUSION

The study findings suggest that there is definite impact of acupressure on relief of chemotherapy induced nausea and vomiting among cancer patients and acupressure on P6 point appears to be an effective technique to control nausea and vomiting among patients undergoing chemotherapy.

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