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Mini Review

Contrast Hydrotherapy in Reducing the Risk of Thrombophlebitis Among the IV Cannulated Patient In Selected Hospital at Vijayapur

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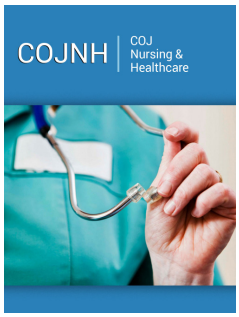

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Abstract

Objective: Intravenous catheters have been indispensable tools of modern medicine. Although intravenous applications can be used for a multitude of purposes, these applications may cause complications, some of which have serious effects. Among these complications, the most commonly observed is phlebitis. This study was conducted to determine the observation on developing thrombophlebitis among IV cannulated patients in experimental and control groups and to evaluate the effectiveness of contrast hydrotherapy in reducing the risk of developing thrombophlebitis among the experimental group.

Methods: This study determined the effect of contrast hydrotherapy to reduce the risk of thrombophlebitis. The study included a total of 100 individuals who were admitted to the medical and surgical ward and satisfied the study enrollment criteria in Vijayapur/India. Data were compiled from Patient Information Forms and patient, Peripheral Intravenous Catheter and Therapy Information Forms, reported grades based on the Visual Infusion Phlebitis Assessment Scale, and Peripheral Intravenous Catheter Nurse Observation Forms. The data were analyzed using SPSS.

Results: The result shows that the mean pre-test score of the experimental group was 0. The mean post-test score was 0.424±0.70048. The findings were significant as computed p=0.000 and 't' value 4.248 at 0.01 level of significance. The mean post-test score of the experimental group 0.424±0.70048 was lower than the mean post-test score of the control group 1.1599±1.87848. The computed p=0.000 and 't' values were 4.469 at 0.01 level of significance.

Conclusion: The study concludes that contrast hydrotherapy was effective for reducing the risk of thrombophlebitis.

Keywords: Contrast; Hydrotherapy; Thrombophlebitis; IV cannula; Effectiveness

Introduction

The peripheral venous catheter is the common and essential intravenous device frequently used in medical practices [1]. The more than 80% of the patients who are admitted to the hospital are cannulated with IV cannula to meet with their daily therapeutic and nutritional requirement. When the patient comes to hospital for treatment, the intra venous therapy are used to administer the medication, intra nutritional support and also blood and blood product. Approximately 60% of hospital inpatients annually undergo peripheral intravenous cannulation to receive therapeutic IV medication [2]. The commonest complication of this IV cannulation is superficial thrombophlebitis including abnormalities of coagulation or fibrinolysis, endothelial dysfunction, infection, venous stasis, intravenous

therapy and intravenous drug abuse. (Waitt C, Waitt P, et.al, 2004). To prevent needle stick injury nurses should follow proper guidelines [3] and Clinical evaluation is the primary diagnostic tool for thrombophlebitis. It can be examined when the skin over the affected vein exhibits erythema, warmth, swelling and tenderness. Thrombophlebitis can be classified as either superficial or deep; in about 55% of all patients receiving IV therapies develops superficial thrombophlebitis and at least in 5% of all surgical patients develop deep vein thrombophlebitis which has an estimated frequency of 1 in 1000 persons a year (Suzanne C Smeltzer, Brenda G, 2010).

History

Hydrotherapy is almost as old as the hills from which the water runs. In fact, it has been historically accounted for in a number of ancient civilizations [4]. Although it serves as a safe, effective and inexpensive treatment, hydrotherapy in modern times is often overlooked as a powerful healing tool. (Michigan, Battle Creek, 2009)

Review of Literature

Chinnamma Verghese (2010) conducted a study on prevention and reduction of pain bruise and hematoma by "moist ice pack" application on the site of subcutaneous heparin injection. The sample size consists of 100 injection sites each in the experimental and control group respectively. Recognizing the physiological responses of the cell/tissue to injury or trauma, the "moist ice pack" procedure was performed for 5 minutes at the subcutaneous heparin injection site twice daily for three days in the experimental group. Assessment of pain, bruise and hematoma were carried out at 12, 48 and 72 hours in both the groups. Results were statistically significant in favor of the use of moist ice pack while comparing the pain and bruise at subcutaneous injection site between experimental and control group at 12, 48 and 72 hours in the current study ($p<0.05$ and $p<0.01$).

Vishwambaran N (2010) an interventional study was conducted in Mangalore on effectiveness of ice packs versus thrombophobe gel for reducing intra venous infiltration in patients admitted in pediatric wards. The study was conducted on 40 samples (20 for thrombophobe gel group and 20 for ice cube group) selected using purposive sampling technique. The infiltration was assessed by using a modified infiltration scale. The results showed that before the treatment, the majority (65%) of patients had grade two infiltrations after the treatment with thrombophobe and 100% of patient's infiltration had reduced to grade one infiltration. In group two majorities (80%) had grade two infiltrations after the treatment with ice cube 100% had grade one infiltration. The study concluded that both thrombophobe gel and ice pack are effective in reducing intravenous infiltration among pediatrics patients [5-9].

Statement of the problem

"Contrast hydrotherapy in reducing the risk of thrombophlebitis among the IV cannulated patient in selected hospital at Vijayapur".

Objectives of the study

A. To determine the observation on developing thrombophlebitis among IV cannulated patient in experimental and control group.

B. To evaluate the effectiveness of contrast hydrotherapy in reducing the risk of developing thrombophlebitis among the experimental group.

C. To compare the effectiveness of contrast hydro therapy in reducing risk of developing thrombophlebitis with experimental group and control group.

D. To find out the association between reduction in the risk of developing thrombophlebitis and selected demographic variables among the experimental group and control group.

Hypothesis: [at 0.01 level of significance]

H_{01}: There is no significant difference between reduction in the risk of developing the thrombophlebitis among the experimental group and control group among the IV cannulated patient.

H_1: There is a significant difference between reduction in the risk of developing the thrombophlebitis among the experimental group and control group among the IV cannulated patient.

H_{02}: There is a no significant association between post test score in risk of developing the thrombophlebitis with selected demographic variables in the experimental group and the control group among the IV cannulated patient;

H_2: There is a significant association between post test score in risk of developing the thrombophlebitis with selected demographic variables in the experimental group and the control group among the IV cannulated patient;

Research methodology

The quantitative evaluative study was conducted using qusi-experimental research design at selected hospital of Vijayapur. The total sample size was 100 samples. Before conducting the study written consent were obtained from the sample. The purposive sampling technique was used. on day one the data collection was by using demographic tool with VIP scale for pretest control group and experimental group after that researcher was given intervention to the experimental group for three times in a day for three days then posttest was taken by the researcher duration of the average time taken .

Results

The researcher found the existing problems of thrombophlebitis by use of visual infusion phlebitis scale (Table 1 & 2). The mean pretest score of experimental and control group was 0, which shows that all subjects were at same stage 0, i.e., no sign and symptom of thrombophlebitis (as observed by VIP scale) in both groups. The mean post test score of experimental group 0.424±0.70048was

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lower than mean post test score 1.1599±1.87848 of control group (Figure 1). The mean percentage of post test score of experimental group was 8.4% and 37.54% was of control group. The mean pretest score of the experimental group was 0. The mean post test score was0.424±0.70048. The findings were significant as computed p=0.000 and 't' value 4.248 at 0.01 level of significance. The mean post test score of experimental group 0.424±0.70048 was lower than mean post test score of control group 1.1599±1.87848. The computed p=0.000 and 't' value was 4.469 at 0.01 level of significance.

Table1: Subject according to demographic characteristics by frequency and percentage (n=100).

Selected Demographic Variables		Control Group (n=50)		Experimental Group (n=50)	
		Frequency	%	Frequency	%
1. Age	a) 20-30	20	40%	26	52%
	b) 31-40	13	26%	14	28%
	c) 41-50	17	34%	10	20%
2. Gender	a) Male	24	50%	22	46%
	b) Female	26	50%	28	54%
3. Body build	a) Normal	26	52%	33	66%
	b) Thin	17	34%	12	24%
	c) Obese	7	14%	5	10%
4. No. Of iv cannula	a) One	50	100%	49	98%
	b) Two	0	0%	1	2%
5. Size of cannula	a) 16 gauze	6	12%	8	16%
	b) 18 gauze	27	54%	18	36%
	c) 20 gauze	17	34%	24	48%
6. Previous hospitalizations	a) Not	31	62%	34	68%
	b) Yes	19	38%	16	32%
7. General condition	a) Good	2	4%	9	18%
	b) Satisfactory	34	68%	27	54%
	c) Unsatisfactory	14	28%	14	28%
8. Selected vein	a) Accessory cephalic	2	4%	2	4%
	b) radial	5	10%	1	2%
	c) Ulnar	6	12%	2	4%
	d) Dorsal ulanar arch	12	24%	15	30%
	e) Median ante brachial	9	18%	13	26%
	f) Other	16	32%	17	34%

Table 2: Visual infusion phlebitis score in experimental and control group N=100.

Score	Experimental Group		Control Group	
	Pretest score	Post test score	Pretest score	Post test score
Score-0	50	35	50	22
Score-1	0	11	0	3
Score-2	0	2	0	8
Score-3	0	2	0	7
Score-4	0	0	0	8
Score-5	0	0	0	2

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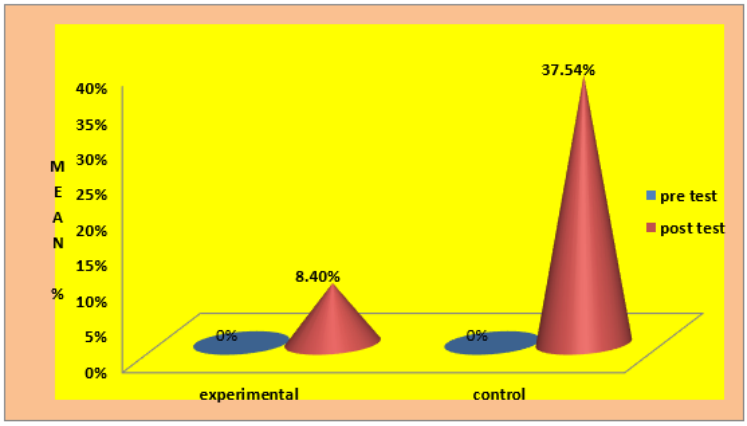

Figure 1: Graph showing mean percentage of pretest and posttest VIP score of experimental and control group.

Conclusion

Analysis and interpretation of data were done based on the objectives of the study and hypothesis to be tested. Both the descriptive and inferential statistics were used. The study concludes that contrast hydrotherapy were effective for reducing the risk of thrombophlebitis.

Recommendation

A. The same study could be undertaken in large samples

B. A similar study can be replicated for other hospital.

C. The study could be undertaken in alternative method for prevention of thrombophlebitis.

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