"A STUDY TO ASSESS THE EFFECTIVENESS OF COLD APPLICATION ON THROMBOPHLEBITIS AMONG POST-OPERATIVE PATIENTS WITH INTRAVENOUS CANNULA IN A SELECTED HOSPITAL AT CHENNAI"

CIBY JOSE¹, GOLDA GLASTIN² & THULASI RAJ. H³

¹Principal, Venkateswara Nursing College, Chennai, Tamil Nadu, India
²Assistant Professor, Department of Medical Surgical Nursing, Venkateswara Nursing College, Chennai, Tamil Nadu, India
³Research Scholar, Venkateswara Nursing College, Chennai, Tamil Nadu, India

ABSTRACT

Health is the level of functional and (or) metabolic efficiency of a living being. It is the general condition of a person in the mind, body and spirit, usually meaning to be free from illness, injury or pain. All have times of good health, times of sickness, and may be even times of serious illness. As lifestyles change, so does the level of health.

Patients are unable to take fluids and nutrients and are unable to make proper use of their gastrointestinal system effectively. The common practice to feed patient is through the vein. This method of feeding to the patient is known as intravenous infusion. Various improvements in intravenous administration of fluid has increased knowledge concerning body fluids and their role in the human body and have resulted in popularizing this technique in everyday hospital practice.

Compared with other route of administration, intravenous route is the fastest way to deliver fluids and medication throughout the body. Intravascular lines (IV) are used for not only purposes administering drugs and fluids, varying from monitoring pressures. A common problem encountered during intravenous therapy (IV) therapy is phlebitis, i.e. the inflammation of the venous wall near the point of entry of the cannula into the veins. It is often due to patient movement and disruption of vein at the site of insertion of the cannula

KEYWORDS: Any Form of Injury to a Blood Vessel can Result in Thrombophlebitis

INTRODUCTION

In the case of superficial thrombophlebitis, the blood clot usually attaches firmly to the wall of the affected blood vein. Since superficial blood veins do not have muscles that massage the veins, blood clots in superficial veins tend to remain where they form and seldom break loose. When thrombophlebitis occurs in a deep vein, a vein that runs deep within muscle tissue, it is called deep venous thrombosis. Deep venous thrombosis presents the threat of producing blood clots that will break loose to form emboli. These can lodge in other tissues where they can block the blood supply, typically in the lungs. This results in tissue damage and can sometimes be serious or fatal, for example, pulmonary embolism
OBJECTIVES

- To assess the pre-test level of thrombophlebitis among postoperative patients in the experimental group and control group.
- To assess the post-test level of thrombophlebitis among postoperative patients in the experimental group and control group.
- To evaluate the effectiveness of cold application in pre-test level and post-test level of thrombophlebitis among post-operative patients in the experimental group and control group.
- To find out the association between the post-test levels of thrombophlebitis among post-operative patients in the experimental group with their selected demographic variables.

ASSUMPTIONS

The Study Assumes That

- The primary physiological responses of cold application results in reducing the initial inflammatory response to trauma, i.e. here the venipuncture, thus minimizing the barriers to wound healing and facilitates tissue repair.
- Cold application would be effective in reducing the thrombophlebitis among post-operative patients.

Research Hypotheses

\[ H_1 \] There is a significant difference in post-test levels of thrombophlebitis among post-operative patients with intravenous cannula in the experimental group and control group.

\[ H_2 \] There is a significant association between the post-test levels of thrombophlebitis among post-operative patients with intravenous cannula in experimental group with selected demographic variables.

METHODOLOGY

RESEARCH DESIGN True experimental design

RESEARCH SETTING Dr. Kamakshi Memorial Hospital, Chennai

SAMPLE SIZE 60 post operative hospitalized patients

SAMPLING TECHNIQUE Simple Random Sampling technique.

SAMPLING CRITERIA

Inclusion Criteria

- Patients who have thrombophlebitis among post-operative ward patients measured with Visual Infusion Phlebitis Score 1 to 4.
- Patient who is willing to participate.
- Patient aged between 30 years to 50 years of age.
- Patient who is having intravenous cannula in the fore arm.
- Patient who are iv cannulated a day before surgery and on the day of surgery.
Exclusion Criteria

- Patients who are on IV chemotherapy drugs and blood transfusion.
- Patients who are on ventilator
- Patients who are unconscious
- Patients Admitted in post-operative ward with Visual Infusion Phlebitis Score 0 and 5.

Development of the Tool

It consists of 2 sections

**Section A:** Demographic variable of the postoperative patients such as age, sex, religion, marital status, education, occupation, type of activity, dietary pattern, postoperative day.

**Section B:** Visual Infusion Phlebitis Score.

### Table 1: Visual Infusion Phlebitis Score [VIPS] and Interpretation

<table>
<thead>
<tr>
<th>S. No</th>
<th>Visual Infusion Phlebitis Score [VIPS] for Thrombophlebitis</th>
<th>Grading</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>0</td>
<td>None</td>
</tr>
<tr>
<td>2.</td>
<td>1</td>
<td>Mild</td>
</tr>
<tr>
<td>3.</td>
<td>2</td>
<td>Moderate</td>
</tr>
<tr>
<td>4.</td>
<td>3</td>
<td>Severe</td>
</tr>
<tr>
<td>5.</td>
<td>4</td>
<td>Very severe</td>
</tr>
<tr>
<td>6.</td>
<td>5</td>
<td>Advanced</td>
</tr>
</tbody>
</table>

- **None (0):** An Visual Infusion Phlebitis Score ‘0’ value suggests that you probably don't have signs of phlebitis and intravenous site appears healthy. But still the investigator observes the IV cannula site for certain risk factors, such as diabetes, smoking, so that he can continue to monitor the patient risks.

- **Mild (1):** If the Visual Infusion Phlebitis Score ‘1’, refers that the patient may have some slight pain near intravenous cannula site or slight redness near intravenous site. Investigator observes the IV cannula site.

- **Moderate (2):** An Visual Infusion Phlebitis Score ‘2’ shows that the patient may have pain, erythema and swelling present at the intravenous cannula site. The investigator may suggest to resite the intravenous cannula to treat the condition.

- **Severe (3):** An Visual Infusion Phlebitis Score ‘3’ shows that the signs of pain along the pathway of cannula, erythema and induration are evident. The investigator may have suggested to resite the intravenous cannula and to take the precaution.
- **Very severe (4):** If the Visual Infusion Phlebitis Score ‘4’ refers that the signs of pain along pathway of cannula, erythema, induration, palpable venous cord are evident and extensive even while resting the IV cannulised limb. Also the investigator resite the intravenous cannula for the considerable nursing measures to treat the signs and symptoms.

- **Advanced (5):** If the Visual Infusion Phlebitis Score ‘5’ refers that the signs of pain along pathway of cannula, erythema, induration, palpable venous cord, pyrexia are evident and extensive even while resting the IV cannulised limb. The investigator resite the intravenous cannula and inform to the consent doctors for further treatment.

**Data Analysis Procedure**

Data collected analyzed by using descriptive and inferential statistics.

**Descriptive Statistical Analysis**

- Frequency, percentage distribution, will be used to describe demographic variables
- Mean and standard deviation will be used to assess the level of thrombophlebitis among post-operative patient.

**Inferential Statistical Analysis**

- Paired t test will be used to compare the pre-test and post-tests mean score level of thrombophlebitis among post-operative patient.
- Chi-square test will be used to find the association between the pre-test and post-tests mean score level of thrombophlebitis among post-operative patient.

**OBJECTIVES:** 1

Assessment of Demographic Variables of Thrombophlebitis among Post-Operative Patients in Experimental and Control Group

<table>
<thead>
<tr>
<th>Demographic Variables</th>
<th>Experimental Group</th>
<th>Control Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>%</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30-35 Years</td>
<td>6</td>
<td>20</td>
</tr>
<tr>
<td>36-40 Years</td>
<td>11</td>
<td>36.7</td>
</tr>
<tr>
<td>41-45 Years</td>
<td>8</td>
<td>26.7</td>
</tr>
<tr>
<td>46-50 Years</td>
<td>5</td>
<td>16.7</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>16</td>
<td>53.3</td>
</tr>
<tr>
<td>Female</td>
<td>14</td>
<td>46.7</td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>25</td>
<td>83.3</td>
</tr>
<tr>
<td>Single</td>
<td>1</td>
<td>3.33</td>
</tr>
<tr>
<td>Widow/Widower</td>
<td>4</td>
<td>13.3</td>
</tr>
<tr>
<td>Religion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hindu</td>
<td>15</td>
<td>50</td>
</tr>
<tr>
<td>Muslim</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>Christian</td>
<td>12</td>
<td>40</td>
</tr>
</tbody>
</table>
This table 4.1 reveals that the age of experimental group of postoperative patients 6 (20%) of them were found to be between 30 to 35 years of age, 11 (36.7%) patients in the age group between 36 to 40 years, 8 (26.7%) patients in the age group between 41 and 45 Years, and 5 (16.7%) patients of age group between 46 and 50 years, considering the control group, the age of post-operative patients 3 (10%) of them were found to be in the age group between 30 and 35 years, 11 (36.7 %) patients in the age group between 36 and 40 Years, 11 (36.7%) patients in the age group between 41 and 45 years, and 5 (16.7%) patients in the age group between 46 and 50 years of age.

Regarding the sex 16 (53.3%) are male patients and 14 (46.7%) are female patients in experimental group, in control group 15 (50%) are male patients and 15 (50%) are female patients.

Regarding the marital status 25(83.3%) are married, 4(13.3%) are widow, and 1(3.33%) are single in the experimental group, considering the control group 26 (86.7%) are married, 2(6.7%) are widow and 2(6.7%) are single.

Considering Religion in experimental group 15 (50%) are Hindus, 3 (10%) are Muslim, 12 (40%) are Christians, regarding control group, 10 (33.3%) are Hindu, 6 (20%) are Muslim and 14 (46.7%) are Christians.

Considering educational status in experimental group 0 (0%) are illiterate, 2 (6.7%) are primary school, 7 (23.3%) are high School, 21 (70%) are graduate, In control group 3(10%)are illiterate, 3 (10%) are primary school, 6 (20%) are high school and 18(60%) are graduates.

Regarding occupation in experimental group, 3 (10%) patients are home maker, 4 (13.3%) patients are
government, 17 (56.7%) patients are private, 6 (20%) patients are business. In control group 7 (23.3%) patients are homemaker, 4 (13.3%) patients are government, 15 (50%) patients are private and 4 (13.3%) patients are business.

Regarding type of activity in experimental group, 4 (13.3%) patients are Sedentary Workers, 22 (73.3%) patients are moderate workers, 4 (13.3%) patients are heavy workers, in control group 5 (16.7%) patients are sedentary workers, 24 (80%) patients are moderate workers and 1 (3.33%) patients are heavy workers.

Considering the monthly family income in experimental group 12 (40%) are Rs.10001/- to Rs.15000/-, 18 (60%) are > Rs.15000/-, In control group, 5 (16.7%) are Rs.10001/- to Rs.15000/-, 25 (83.3%) are > Rs.15000/-. Regarding dietary pattern in experimental group, 9 (30%) patients are vegetarian, 21 (70%) patients are non-vegetarian, in control group 3 (10%) patients are vegetarian and 27 (90%) are non-vegetarian.

Considering the post-operative day in experimental group 1 (3.33%) are belongs to first POD who were iv cannulated a day before surgery, 1 (3.33%) are belongs to second POD who were also iv cannulated a day before surgery, 28 (93.3%) are belongs to third POD who were iv cannulated on the day of surgery, In control group, 1 (3.33%) are belong to first POD who were iv cannulated a day before surgery, 0 (0%) are belong to second POD, 25 (83.3%) are belong to third POD who were iv cannulated on the day of surgery and 4 (13.3%) are > third POD who were iv cannulated on the day of surgery.

**OBJECTIVE 2**

Evaluating the effectiveness of cold application in pre-test level and post-test level of thrombophlebitis among post-operative patients in the experimental group and control group.

<table>
<thead>
<tr>
<th>Group</th>
<th>Pre Test –Visual Infusion Phlebitis Score</th>
<th>Post Test- Visual Infusion Phlebitis Score</th>
<th>T</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Experimental Group</td>
<td>2.93</td>
<td>0.890</td>
<td>0.07</td>
<td>0.731</td>
</tr>
<tr>
<td>Control Group</td>
<td>2.63</td>
<td>0.765</td>
<td>2.57</td>
<td>0.728</td>
</tr>
</tbody>
</table>

The Table 4.4 reveals that with respect to experimental group, the comparison of the mean value 2.93 with SD 0.640, of pretest and the mean value is 0.07 with SD 0.254 of post test projects “t” value as 27.481, which is statistically significant at p=0.000 level.

In control group, the comparison of the mean value is 2.63 with SD 0.765, of pretest and the mean value is 2.57 with SD 0.728 of posttest projects, to value as 1.439, which is statistically not significant at p = 0.161 p>0.1 level.
Findings of the Study

The post-test analysis depicts that in the experimental group, 93.3% of the post-operative patients were having VIPS values 0 and 6.70% of the post-operative patients were having the VIPS values 1.

The post-test analysis reveals that with respect to experimental group, the mean value 0.07 with SD 0.254, As far as control group, the mean value is 2.57 with SD is 0.728, Comparison of the value project t’ value as 18.24, which is statistically significant at p=0.000 level.

CONCLUSIONS

The present study assessed the effectiveness of cold application on thrombophlebitis among post-operative patients. The results of the study concluded that cold application on thrombophlebitis was effective at initial stage among post-operative patients

REFERENCES
