



ASSESS THE EFFECTIVENESS OF ICE PACK ON VASCULAR ACCESS SITE COMPLICATIONS AMONG PATIENTS UNDERGOING CORONARY ANGIOGRAM AT SRM GENERAL HOSPITAL, KATTANKULATHUR, CHENGALPATTU DISTRICT

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Abstract

Background: Coronary heart disease is otherwise known as atherosclerosis, which causes disturbance in the flow of blood towards the myocardial muscle. A method of diagnostic management for coronary heart disease is cardiac catheterization. Cardiac catheterization is further classified into percutaneous coronary intervention and cardiac angiography. The common vascular complications in cardiac catheterization after artery puncture are pseudo aneurysm (0.7%), AV fistula (1%), bleeding (1.5%), hematoma (15.5%). The most concerned Nursing priority after cardiac catheterization is decreasing vascular complications and especially formation of hematoma as it is the common insertion site complication. A true experimental approach with post-test only design was adopted. Patients were randomly assigned into two equal groups, 35 patients in study group and 35 patients in control group were allotted through lottery method. The patients under study group were given ice application with ice gel rolled with single sterile gauze and kept over the radial artery access site during sheath removal and manual pressure was applied using thick tightly rolled gauze pieces over the ice pack for 15 minutes. Then a tight dressing was applied to cover the vascular access site. In control group, manual pressure was applied using thick tightly rolled gauze pieces over radial artery puncture site for 15 minutes. Then a tight dressing was applied over the puncture site. After 24 hours the tight dressing is removed and the vascular access site is inspected, palpated and assessed by self-structured assessment checklist for the presence of pain, hematoma and ecchymosis for study and control group participants. The raw data were organized, tabulated and analyzed using descriptive and inferential statistics.

Results: The study revealed that the mean value of 3 with SD of 0.81 with regard to vascular access site complications in the study group and the mean value of 5.75 with SD of 2.5 with regard to vascular access site complications in the control group participants projects 't' value of 0.040 $P < 0.05$. So, it is statistically significant at 5 % level. So we concluded that the ice pack application is more effective to reduce vascular access site complications among study group participants.

Keywords: ICE Pack, Vascular Access Site and Coronary Angiogram.

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1. INTRODUCTION

Coronary heart disease is the abnormal condition of the heart that causes narrowing of coronary artery vessels that is due to atheroma plaque deposition. A method of diagnostic management for coronary heart disease is cardiac catheterization. Cardiac catheterization is further classified into percutaneous coronary intervention and cardiac angiography. Coronary angiography is a diagnostic procedure where a small plastic catheter is inserted into the vein or artery towards the heart vessels to get a radiological image of the heart vessels and to measure the hemodynamics of the heart. Coronary artery disease is caused by various factors such as high cholesterol, insulin resistance or diabetes, smoker, high blood pressure and sedentary lifestyle. Some of the common interventions in cardiac catheterization include angioplasty, stent placement, biopsy excision or valve replacement. Patients with high risk of bleeding will receive pressure over tight dressing with sand bag to arrest bleeding by compressing the artery and allowing to form clot.

The common vascular complications in cardiac catheterization after femoral artery puncture are pseudo aneurysm (0.7%), AV fistula (1%), bleeding (1.5%), hematoma (15.5%) [6]. The most concerned Nursing priority after cardiac catheterization is decreasing vascular complications and especially formation of hematoma as it is the common insertion site complication.

2. MATERIALS AND METHODS

A true experimental approach with post-test only design was adopted. Patients were randomly assigned into two equal groups, 35 patients in study group and 35 patients in control group were allotted through lottery method. The patients under study group were given ice application with ice gel rolled with single sterile gauze and kept over the radial artery access site during sheath removal and manual pressure was applied using thick tightly rolled gauze pieces over the ice pack for 15 minutes. Then a tight dressing was applied to cover the vascular access site. In control group, manual pressure was applied using thick tightly rolled gauze pieces over radial artery puncture site for 15 minutes. Then a tight dressing was applied over the puncture site. After 24 hours the tight dressing is removed and the vascular access site is inspected, palpated and assessed by self-structured assessment checklist for the presence of pain, hematoma and ecchymosis for study and control group participants. The raw data were organized, tabulated and analyzed using descriptive and inferential statistics.

SECTION A: The investigator assessed the demographic and clinical variables using structured questionnaire.

SECTION B: The investigator assessed hematoma and ecchymosis using self structured assessment checklist as yes or no question.

SECTION C: The investigator assessed post procedural pain using Numerical rating scale. Scoring System: 0 = No pain, 1-3 =Mild pain, 4-6 = Moderate pain, 7-9 = Severe pain, 10 = Worst possible pain.

Statistical Analysis

Data was recorded according to the objectives of the study, both descriptive and inferential statistics were used to work out the analysis and interpretation. Paired t-test was used to test the significance difference in the effectiveness of ice pack between study group and control group. Chi-square test was used to find out the association between demographic variables and vascular access site complication on study group and control group.

3. RESULTS AND DISCUSSION

In control group, out of 35 participants 5 (14.3%) of the participants had the complaints of ecchymosis and 3 (8.6%) of the participants had the complaints of hematoma. In study group, out of 35 5 (8.6%) of the participants had the complaints of ecchymosis and 3 (5.7%) of the participants had the complaints of hematoma. The mean value of 3 with SD 0.81 with regard to vascular access site complications in the study group and the mean value of 5.75 with SD 2.5 with regard to vascular access site complications in the control group projects 't' value of 0.040 which is less than 0.05. So, it is statistically significant at 5 % level. With regards to post-test assessment of pain, out of 70 participants, 20 participants had complaints of mild pain in vascular access site from study group, whereas 22 participants had complaints of mild pain in vascular access site from control group. Likewise, 8 participants did not have any complaints of pain in vascular access site from study group but only 3 participants from control group did not report any complaints of pain in vascular access site. 7 participants had complaints of moderate pain in study group and 9 participants had complaints of moderate pain in control group. Only 1 participant had the complaint of severe pain in vascular access site and he belonged to control group. The mean value of study group was 13.8 with SD 16.97. Whereas, the mean value of the control group was 15.6 with SD 19.19. The resulting t-test value was 0.43 which is more than

the p-value of 0.05. Hence, it is statistically not significant.

4. DISCUSSION

The vascular access site complications in the study group was less than the control group. This shows that ice pack was effective in the study group. However, the overall percentage of intensity of pain level in

study group was 39.5. Whereas, in control group it was 44.6. This shows that there is decrease in the overall pain intensity in study group than control group. The association of demographic variables shows that the p-values corresponding to the post test score of selected post procedure complication (pain) were more than the p-value of 0.05. This shows that there is no significant association between the demographic variables and the selected post procedure complication (pain) in study group and control group.

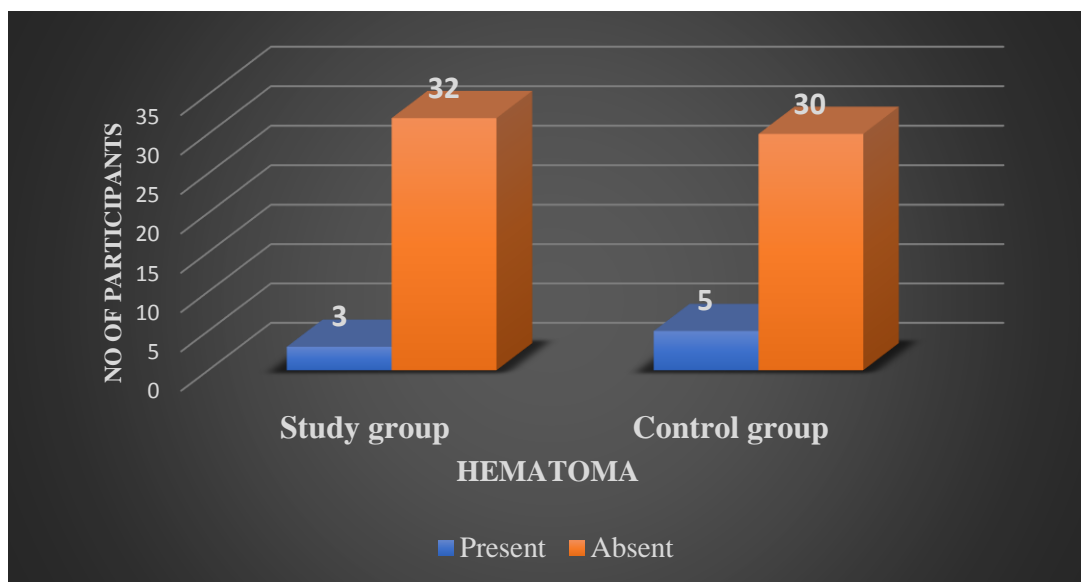


Fig 4.2.1 Distribution of hematoma among patients undergoing coronary angiogram in study group and control group.

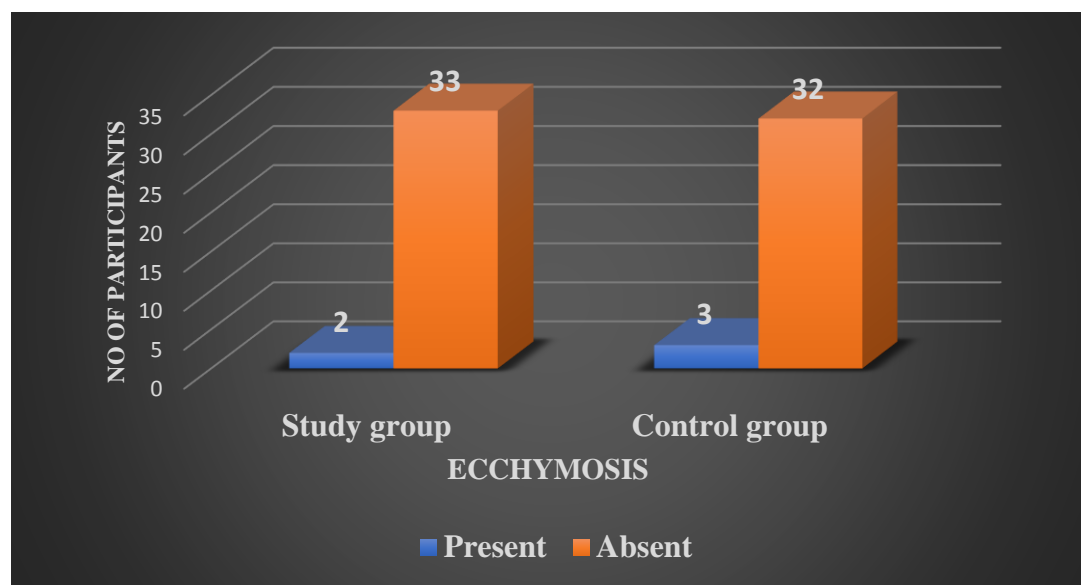


Fig 4.2.2 Distribution of ecchymosis among patients undergoing coronary angiogram in study group and control group.

5. CONCLUSION

The findings of the study concluded that vascular access site complications such as pain, hematoma and ecchymosis were reduced significantly after the selected nursing intervention in study group in comparison with the control group.

Relevant conflict of interests/Financial Disclosure:

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be constructed as a potential conflict of interest.

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