

SELECTED INTERVENTION STRATEGY ON THROMBOPHLEBITIS AMONG PATIENTS WITH INTRAVENOUS CANNULA

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ABSTRACT

Thrombophlebitis occurs when a blood clot causes inflammation in one or more of the veins near the surface of the skin. It is natural consequence of routine intravenous therapy and subcutaneous infiltration of fluid is not always perceived as a serious problem. To reduce the prevalence of thrombophlebitis, study conducted to assess the effectiveness of selected intervention strategy on thrombophlebitis among patients with intravenous cannula at Saveetha medical college and hospital. Quasi experimental posttest only design was used. Simple Random Sampling technique using lottery method was adopted for the selecting 50 patients with intravenous cannula who grade 2to5 according to the phlebitis grading scale. The results showed that 60% were within the age group of 25 to50 years. Considering the duration of hospitalization 20% were hospitalized for more than 3 days. Among them 10% were with grade 5 phlebitis, 32% were with grade 4, 32% were with grade 3 phlebitis and 32% were with grade 2 phlebitis. After intervention, 48% had no signs of thrombophlebitis, 46% had grade 1 and 6% had grade 2 phlebitis. There is a significant association between post test grade of thrombophlebitis with the age and frequency of intravenous cannulation in a month.

KEYWORDS: Intervention Strategy, Thrombophlebitis, Intravenous Cannula, Grade

INTRODUCTION

When a patient is admitted in an emergency or intensive care unit, the immediate intervention carried out is the insertion of intravenous cannula in order to save the life of the patient. Intravenous therapy is one procedure which is seen across all the specialties of a hospital. It is a universally acceptable component of medical care. This procedure is so common that there is a tendency to assume that it is routine and will not be associated with any clinical problems. Thrombo means clot, Phlebitis means inflammation of a vein. Thrombophlebitis occurs when a blood clot causes inflammation in one or more of the veins near the surface of the skin. Damage to a vein can occur as a consequence of indwelling catheters, trauma or the infection of the irritating substances.

Thrombophlebitis is viewed as a natural consequence of routine intravenous therapy and subcutaneous infiltration of fluid is not always perceived as a serious problem. And it is important for the clinician to be aware of the potential for injury as a result of medications or fluid leakage into the tissue. An infiltration is not the natural consequence of infusion therapy alone and every effort should be made to ensure that the infusion will be completed safely without complication and must use good judgment in site determination, device placement, securing, dressing, care and maintenance.

Tagalakisv Khan., (2011) assessed the clinical importance, diagnosis, incidence and pathogenesis of peripheral vein infusion thrombophlebitis on the risk factors related to catheter and patient. The findings proved that 25% to 30% of

hospitalized patients developed thrombophlebitis related to catheter. Although duration of catheterization, catheter-related infection and catheter material were important risk factors for peripheral vein infusion thrombophlebitis, patient-related risk factors were not well elucidated.

A hospital staff nurse probably spends up to two-thirds of their shift on intravenous infusion related responsibilities like venipuncture or inserting cannulas, hanging fluids, calculating and administering intravenous medications, assessing intravenous sites and removing intravenous lines.

The frequent use of intravenous catheters carries with it, many potential risks, both mechanical and infections. Not all intravenous complications can be avoided but assessment skills, recognizing their key signs and symptoms, ability to identify problems can minimize risks for patients and will help avoid life-threatening situations.

A study was conducted to assess the perceptions of risk factors for infusion phlebitis among Swedish nurses, as their concepts of these factors may influence the incidence. A majority of the nurses believed that insertion of a peripheral venous catheter in the forearm and catheter rotation within 24 hours was protective. They concluded that surveillance of the educational level of staff, who inserts peripheral venous catheters, is an important tool for reducing the incidence of infusion phlebitis.

Uslusoy & Mete., (2008) had done a study to investigate the predisposing factors in the development of phlebitis in peripheral intravenous catheterization sites in patients treated with a variety of intra venous infusion solutions and drugs. The study result evidenced that infusion through an infusion pump and insertion of catheters in the veins around the elbow increased the risk of phlebitis. Also, the number of times infusions were started led to an increased rate of phlebitis. However, conflicting results were obtained about the association between phlebitis, gender, and catheter size.

To compare the impact of peripheral intravenous cannulation routine site with removal on clinical indication and the other group with routine change every 3 days and both the groups had same complications of phlebitis, local infection, occlusion. The findings showed that there was no difference between both the groups. He concluded that the growing evidence to support the extended use of peripheral intravenous cannula with removal only on clinical indication.

Higginson and Parry (2011) conducted a research on phlebitis treatment, care and prevention. He found that peripheral venous catheter associated phlebitis is caused by inflammation to the vein at a cannula access site. It can have a mechanical, chemical or infectious cause. Good practice when inserting a cannula, including appropriate choice of device and site can help to prevent phlebitis. There are two phlebitis scoring system which should be used in routine practice to identify and treat early signs of inflammation.

There are many important measures to prevent thrombophlebitis. The observation of the site from the time of insertion of intravenous cannula is the foremost measure. Hence a study was conducted to find the effectiveness of strategical measures like selection of appropriate cannula, position of the cannula, flow of fluid position of the patients cannulated part and frequency of fluid on thrombophlebitis among patients with intravenous cannula.

OBJECTIVES

- To assess the grade of thrombophlebitis.
- To evaluate the effectiveness of selected intervention strategy on thrombophlebitis.

- To associate the selected demographic variable with the grade of thrombophlebitis.

The hypothesis formulated for the study was that a significant reduction in the grade of phlebitis in the experimental group after intervention strategy.

METHODS

Research Design

The research approach used for this research was evaluative approach. Quasi experimental posttest only design was used.

Setting

The study setting was Saveetha Medical College and Hospital, Chennai. It is a 1000 bedded hospital. The study was conducted in Intensive care unit and post operative wards.

Population

The population of the study included all newly cannulated patients with intravenous fluids administration.

Sample

The sample included were newly intravenous cannulated patients in Intensive care unit and post operative wards in Saveetha medical college and hospital who had grade score 2 to 5 according to the phlebitis grading scale.

Sample Size

The estimated sample size for the study was 50.

Sampling Technique

Simple Random Sampling technique by using lottery method was adopted for the study.

Tool

The tool consists of two parts, Part 1 consisted of demographic variables such as age, gender, duration of hospitalization, frequency of intravenous cannulation in a month, Part 2 was Standardized scale for phlebitis assessment. For that assessment the phlebitis grading scale was used in the study.

Table 1: Phlebitis Assessment Grading Scale

Site of Observation		Score	Stage/Action
Intravenous site appears healthy.		0	No signs of phlebitis
One of the sign is evident.	- Slight pain near cannulated site. - Slight redness.	1	Possible first sign of phlebitis. - Observe cannula
Two of the signs are evident	- Pain - Redness	2	Early stage of phlebitis - Resite cannula
All of the following signs are evident	- Pain - Redness - Swelling	3	Medium stage of phlebitis - Resite cannula - Consider treatment
All of the signs are evident	- Pain - Redness - Swelling - Palpable venous cord.	4	Advanced stage - Resite cannula - Consider treatment
All of the signs are evident	- Pain - Redness - Swelling - Palpable venous cord. - Pyrexia.	5	Advanced stage - Resite cannula - Consider treatment

RESULTS

Out of 50 samples 60% were within the age group of 25 to 50 years and 34% were in the age group of more than 50 years. With regard to the gender 60% were males and 40% were females. Considering the duration of hospitalization 20% were hospitalized for 1 day, 60% for 2-3 days and 20% were more than 3 days. Regarding to the frequency of intravenous cannulation in a month 72% had no history of cannulation in a month , 14% had once, 14% had twice and none of them had thrice or more than that.

Table 2: Frequency and Percentage Distribution of the Demographic Variables of Patients with Thrombophlebitis

S.NO	DEMOGRAPHIC VARIABLE	FREQUENCY	PERCENTAGE	
1.	Age	a)20years -50 years	33	60
		b)>50 years	17	40
2.	Gender	a)Male	30	60
		b)Female	20	40
3.	Duration of hospitalization	a) 1 day	10	20
		b) 2 -3 days	30	60
		c) >3 days	10	20
4.	Frequency of intravenous cannulation in a month	a) Nil	36	72
		b) Once	7	14
		c) Twice	7	14
		d) Thrice	-	-
		e) > Three times	-	-

The pretest results showed that among 50 patients 5(10%) were with grade 5 phlebitis, 16(32%) were with grade 4 phlebitis, 16(32%) were with grade 3 phlebitis, 16(32%) were with grade 2 phlebitis according to the grading of thrombophlebitis scale.

The patients with phlebitis grade between 2 to 5 were given the selected intervention strategy and assessed for thrombophlebitis. The posttest result showed that among 50 patients 24(48%) had grade 0 with no signs of thrombophlebitis, 23(46%) had grade 1 and 3(6%) had grade 2 phlebitis. None of them had grades 3, 4 & 5 grading of

phlebitis. These findings proved that there was the effectiveness of selected intervention strategy on thrombophlebitis.

There was also a significant statistical association between grade of thrombophlebitis with the age and frequency of intravenous cannulation in a month.

CONCLUSIONS

The study was conducted to assess the effectiveness of selected intervention strategy on thrombophlebitis among patients with intravenous cannula. The selected samples were started with new intravenous cannula and assessed for every 15 minutes for the first 24 to 48 hours after giving the selected intervention strategy using the phlebitis grading scale. The study concluded that the selected intervention strategy was effective among patients with intravenous cannula. The strategical measures should be followed to reduce the occurrence of thrombophlebitis by intravenous therapy. The study findings also recommend that the similar study can be undertaken on the larger scale in future. Nurses should be adequately trained to assess for the presence of phlebitis and act accordingly. By the way of good and immediate observing in nursing practice both during and after peripheral catheter insertion, phlebitis complication rates can be reduced drastically in future.

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