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PILOT PROJECT ON PATENCY OF PERIPHERAL VENOUS CATHETER

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ABSTRACT

Background: Peripheral intravenous catheter is commonly used device at the time for treatment of patients at the time of hospitalization. It is made up of plastic with the metal stylet to guide catheter into the veins. Though it is a common procedure it may lead to severe blood stream infections if proper care is not taken. Which can be sometimes life threatening for patients. **Aim:** Project was aimed to assess reliability of modified VIP scoring scale. **Materials and methods:** To assess patency of peripheral intravenous catheter quantitative research approach with descriptive research design was adopted. 27 patients were selected randomly from a tertiary care hospital. Patency of peripheral intravenous catheter was assessed by using modified VIP scoring scale. Frequency of demographic variables was

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assessed by using descriptive statistics. By using SPSS software collected information was associated with demographic variables. **Result:** In socio-demographic variables, majority (57.77%) were male, aged between 40-50 years having 44.81% overweight, 35.56% catheterized on dorsum of hand, 66.67% were mobile, 64.44% had acute illness, 63.96% were admitted in general ward and 45.93% had PVC over 3 days and majority of catheters (54.44%) found non patent. The reliability of the VIP scoring scale was r=0.88.

Discussion and conclusion: The tool was found reliable (r=0.88). There is need in improvement of practice regarding maintaining of patency of PVC.

Keywords: Patency, PVC(Peripheral Venous Catheter), procedural guidelines.

Introduction:

Peripheral venous catheter used for administration of medications, blood products, fluids and blood sampling through vein.[1] in 1945; insertion and removal of the cannula and needle was presented as technique. Angiocath was very first disposable version, sold in 1964. Earlier routine practice of peripheral intravenous catheterization was carried out by nursing staff.[2]Now a day's commonly used vascular access is PVC in hospitals, basically in critical areas, general wards, peri-operative patients and prior to diagnostic test such as radiological imaging examinations. Every year in USA more than 25 million patients had a PVC line.[3]World widely; more than billions of peripheral intravenous catheters are inserted yearly in hospitalized patients. Up to 71% of admitted patients require peripheral venous catheter insertion during their hospital stay.[4]Some iatrogenic complications and extra cost may caused in patients if proper guidelines and standard procedures are not followed.[5]

In maintaining patency of PVC; frequent Flushing of intravenous catheter and maintenance of drop rate are important step. Flushing of intravenous catheter helps to prevent prevents the blood clot and blockage at catheter insertion site.[6]through frequent assessment of PVC site such infections related to intravenous catheterization and patency can be prevented.[7]

Material and Methods:

The pilot project was conducted using descriptive research design at tertiary care Hospital. 27 samples were selected using systematic random sampling.

socio demographic information was collected by using criteria such as age, gender, site of catheterization, area of admission, BMI, mobility of the patient and days of insertion of intravenous catheter. A modified VIP scoring scale was used to evaluate patency of

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peripheral venous catheter. The scale contains 10 criteria's with positive and negative scoring. Pilot study was conducted among 27 patients. Reliability of the tool was assessed through split half method and by utilizing Karl person's formula.Inclusion criteria for selecting samples were aged above 18 years, inserted with peripheral intravenous catheterand patients with blood coagulation disorders, receiving chemotherapeutic drugs, admitted in psychiatric ward or on dialysis were excluded from the study.

Data collection was done through interview and observation method by using modified VIP scoring scale.

Results:

In socio-demographic variables, majority (57.77%) were male, aged between 40-50 years having 44.81% overweight, 35.56% catheterized on dorsum of hand, 66.67% were mobile, 64.44% had acute illness, 63.96% were admitted in general ward and 45.93% had PVC over 3 days.

Table-1: Demographic variables of patients

n=27

Types	Frequency	Percentage (%)
Gender		
a) Male	15	57.77%
b) Female	12	42.22%
Age		
a) 18-28 years	5	17.77%
a) 29-39 years	7	27.71%
b) 40-50 years	9	30.37%
c) >50 years	6	24.07%
BMI		
a) Under weight	5	17.04%
b) Normal weight	12	44.81%
c) Over weight	10	38.15%
Site of catheterization		
a) Hand	10	35.56%
b) Wrist	8	30%
c) Cubital fossa	9	34.44%
Mobility of the patients		
a) Mobile	18	66.67%
b) Immobile	9	33.33%
Type of illness		

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a) Acute	17	64.44%
b) Chronic	10	35.36%
Area of admission		
a) Critical care unit	9	34.81%
b) Emergency department	1	2.22%
c) General ward	17	62.96%
Days of iv catheterization		
a) 1 day	9	30%
b) 2 days	6	24.07%
c) >3 days	12	45.93%

Table 2- Item wise score of patency of PVC by modified VIP scoring scale

n=27

Sr no.	Criteria of patency	Frequency	Frequency percentage
1.	Patent	12	45.55%
2.	Non patent	15	54.44%

From above data depicts that majority of catheters (54.44%) found non patent. in association Patency of peripheral venous catheter was foundstrongly associated with days of insertions of PVC.

The reliability of Modified VIP scoring scale was r= 0.88 through split half method and by utilizing Karl person's formula.

Discussion

In socio-demographic variables, majority (57.77%) were male, aged between 40-50 years having 44.81% overweight, 35.56% catheterized on dorsum of hand, 66.67% were mobile, 64.44% had acute illness, 63.96% were admitted in general ward and 45.93% had PVC over 3 day. Majority of catheters (54.44%) found non patent. in association Patency of peripheral venous catheter was foundstrongly associated with days of insertions of PVC. The reliability of Modified VIP scoring scale was r= 0.88 through split half method and by utilizing Karl person's formula which shows tool was reliable.

Previously conducted study by Samantha Keoghregarding flushing frequency Showed thatmajority catheters were non patent and flushing did not affected the peripheral intravenous catheter failure rate. [8]M. Nassaji conducted study regarding risk factors associated with PVC related phlebitis study uncovered 26 patient developed phlebitis and there was no majorconnection with demographic variables such as age, gender, catheter bore

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size, site, type of insertionor type of disease[9]. A prospective study conducted by wei-lig leefor risk factors related to PVC infection found that duration of intravenous catheterization is related with patency of intravenous catheter.[10] Simona Frigerio studied regarding guidelines for maintaining patency of PVC they found that And after 2 months of implementing guidelines significant improvement in practice was noted.[11]

Conclusion

This article showed that majority of PVCs was non patent. There is need to implement and follow a procedural guidelines by hospital staff so that peripheral venous catheter related complication can be prevented and patency can be maintain.

Ethical consideration

A formal ethical approval received from institutional ethical committee. Informed consent was obtained from participants and assured of anonymity.

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Conflict of interest: Author declared no conflict of interest disclosed in this study.

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