

**A STUDY TO ASSESS THE PRACTICES OF HEALTH WORKER REGARDING  
INTRAVENOUS INFUSION AMONG ADULT PATIENT RECEIVING INTRAVENOUS  
INFUSION THERAPY****Hemwati, Santosh Huda and Vivek Singh Malik\***

Professor, PGIMS ROHTAK.

**\*Corresponding Author: Vivek Singh Malik**

Professor, PGIMS ROHTAK.

Article Received on 29/07/2018

Article Revised on 19/08/2018

Article Accepted on 09/09/2018

**ABSTRACT**

A study was conducted with the objectives to assess the practices of health worker regarding intravenous infusion among adult patients receiving intravenous infusion at PGIMS Rohtak. Survey research approach and descriptive co relational design was used for present study. Purposive sampling technique was used to obtain the sample of 100 patients. Data collection tool used was observation checklist to assess the demographic data, factors involved in administration of intravenous infusion therapy. The significant findings of the study were Asepsis related practice, obtained correlation coefficient between Initiation phase, Adding Medication phase score and local complication is -0.218 & -0.577 respectively, which was statistically significant at 0.05 levels and 0.01 level of significance. And changing bottle, giving medication and discontinuation, practice scores and local complication scores is -0.144, -0.067, -0.138 respectively, which was not found statistical significant at 0.05 level and 0.01 level of significance.

**KEYWORDS:** Intravenous infusion, demographic.**INTRODUCTION**

Intravenous infusion therapy is process of introducing drugs or liquids in to the body through veins. Both central veins and peripheral veins can be used for this purpose. It delivers the drug into the blood stream in order to have immediate effect. Intravenous infusion therapy is used when a person must receive fluids, electrolytes and medication swiftly or over a long period, this includes patients in a life threatening situations or unable to ingest oral liquid where they are not allowed taking orally. Further IV infusion is needed to administered drugs when drugs /fluids would not be absorb by gastrointestinal tract.

In modern medical practice, up to 80% of hospitalized patients receive intravenous therapy at some point during their admission.

Health care personnel are important members of the health team who can help in prevention of complications by their aseptic practice. Safe or aseptic practice of health worker may reduce prolonged hospitalization of patients and both systemic and local complication. Local complications may include thrombophlebitis, infiltration, hematoma, sepsis where as systemic complications are circulatory overload, pyrogenic reaction, air embolism, septic shock.

**AIMS AND OBJECTIVES**

To assess the practice o health personnel related to peripheral intravenous infusion therapy.

To identify the factors associated with occurrence of local complication in the adult patients receiving intravenous infusion.

**Assumption**

Patient admitted in hospital with various disorders may require fluid and electrolyte therapy through I.V. route. Aseptic practice regarding intravenous infusion may reduce local and systemic complication

**METHODOLOGY**

A Descriptive study was conducted on 100 adult patients that receiving peripheral intravenous infusion, selected from purposive sampling technique at medicine & Surgical Wards, in PGIMS Rohtak. Descriptive research design and survey approach was used. Observation checklist was used for data collection that consists of three parts,<sup>[1]</sup> sample characteristics,<sup>[2]</sup> identify factors involved in the administration of intravenous therapy and consists of 55 items of practice related factor, which is divided into three areas such as aseptic practices, initiation of infusion related practices and monitoring practices.<sup>[3]</sup> development of local complications.

### Scoring system for observation checklist was developed as follows

#### Scoring for practices related factor

Practices related factor consists of items related to procedural steps of administration of intravenous therapy. Each item was given one mark for correct practice and 0 marks for wrong practice. Here the total numbers of items were 55 and the total score is 55. Practices related items were asepsis related practice, initiation practice of IV infusion, monitoring practice of intravenous therapy. Under the asepsis related practice, items related to asepsis procedural steps during various phases of Intravenous infusion administration included initiation phase of IV cannula, changing intravenous bottle, giving medication through intravenous cannula, adding medication to drip and discontinuation of IV cannula.

**Variables:** The independent variables were practice of health care personnel and dependent variables were Local complications.

#### Finding of the study Findings related to demographic characteristics of the sample revealed that

Half of patients who received intravenous infusion therapy had medical problem (50%) and rest had the surgical problem. Majority of patients were above 40 yrs. i.e. 61%, and remaining 39% were from the age group of 18-39 years. Majority of the patients were male i.e. 58% and 42% were female. In the sample selected, 39% of patients had previous intravenous prick in their extremity. Regarding reasons for termination of IV infusion, majority i.e. 53% of infusion were terminated due to completion of treatment, 47% due to local complications.

#### Findings related to local complications

There were total 100 patients in which 47 patients developed local complications. The local complications developed by patients were thrombophlebitis &

infiltration of different grades and hematoma. Majority of patients i.e. 15% who received intravenous infusion therapy developed thrombophlebitis as most common complication.

**Findings related to practices of personnel** Findings revealed that majority of personnel followed less satisfactory asepsis (98%) and monitoring practices was satisfactory (57%) about 82% of personnel demonstrated satisfactory initiation practice. Thus indicates that local complication decreases with improvement in asepsis practices of intravenous infusion therapy.

Both descriptive and inferential statistics were used for analysis.

To determine the adequacy of practice, the level of practice has been defined in three categories. They were:

#### 1. Satisfactory practice

Satisfactory practice means performance of 100% procedure steps for asepsis related practice and 80-100% for initiation and monitoring practice.

#### 2. Less Satisfactory practice

Less satisfactory practice means performance of 60-70 % procedure steps.

#### 3. Unsatisfactory practice

Practice means performance of less than 60% of procedure steps.

The score of 80%-100% was taken as satisfactory practice for initiation and monitoring, but for asepsis the score of 100% was taken as satisfactory practice Data showed that under the Asepsis related practice, obtained correlation coefficient between Initiation phase, Adding Medication phase score and local complication is -0.218 & -0.577 respectively, which was statistically significant at 0.05 level and 0.01 level of significance.

### Relationship Between Occurrence Of Local Complications And Practices Related To Intravenous Therapy Among Patients Who Received Intravenous Infusion.

Variable	r value	p value	Significance
Initiation phase	-0.218	<0.05	Significant
Changing Bottle	-0.144	>0.05	Not significant
Adding medicine	-0.577	<0.01	Significant
Giving Medication	-0.067	>0.05	Not Significant
Discontinuation	-0.138	>0.05	Not significant
Initiation of infusion	-0.184	>0.05	Not significant
Monitoring phase	0.109	>0.05	Not significant

**DF (98), 195 (r) at 0.05 level of significance.**

**254 (r) at 0.01 level of significance.**

Further it show that highly significant negative correlation between Initiation phase, Adding Medication phase scores and local complication scores. Hence the negative correlation shows that aseptic practice score were less and the local complication were high.

So it can be interpreted that if the asepsis practices related to IV therapy improved, local complication can be reduced.

Data showed that under the Asepsis related practice, obtained correlation coefficient between changing bottle, giving medication and discontinuation practice scores

and local complication scores is -0.144, -0.067, -0.138 respectively, which was not found statistically significant at 0.05 level and 0.01 level of significance.

This indicates there is no significant relationship between occurrence of local complications and initiation of infusion practice scores or monitoring practice score.

## CONCLUSION

Findings of the study suggest that there is a significant association between occurrence of local complications following intravenous therapy and aseptic practice of health care workers. This indicates that local complication decreases with improvement in asepsis practices (Hand washing during initiation and termination phase) of intravenous infusion therapy.

## REFERENCES

1. Corol Tylor, Carol Lillis, Priscilla Lemone, Pamela Lynn "Fundamentals of nursing procedure, The art and science of nursing care" 6<sup>th</sup> edition, Published by Lippincott Williams and Wilkins, 2008; 769-864.
2. Zingg W, Pittet D. Peripheral venous catheters: an under-evaluated problem. *Int J Antimicrob Agents*, 2009; 34(Suppl 4): 38-42.
3. Bravery K 'Paediatric intravenous therapy in practice' in Dougherty L and Lamb J (editors) *Intravenous therapy in nursing practice*, Oxford: Blackwell Publishing, Chapter, 2008; 15: 401-446.
4. Macklin D Phlebitis A painful complication of peripheral IV catheterization that may be prevented, *AJN*, 2003; 103(2): 55-60.
5. Lopez, V., Molassiotis, A., Chan, W., Ng, F. and Wong, E. An intervention study to evaluate nursing management of peripheral intravascular devices. *Journal of Infusion Nursing*, 2004; 27(5): 322-33.
6. Malasch, T., Jerassy, Z., Rudensky, B., Schlesinger, Y., Broide, E., Olsha, O. and Raveh, D. Prospective surveillance of phlebitis associated with peripheral intravenous catheters. *American Journal of Infection Control*, 2006; 34(5): 308-312.
7. Oliveira, A.S. and Parreira, P.M. Nursing interventions and peripheral venous catheter-related phlebitis. Systematic literature review. *Referência: Scientific Journal of the Health Sciences Research Unit: Nursing*, 2010; 3(2): 137-147.
8. Clayton, B.D. and Stock, Y.N. *Pharmacology in nursing practice*. (13<sup>th</sup> ed.) Elsevier: Rio de Janeiro, 2006; 15-26.
9. O'Grady, N., Alexander, M., Dellinger, E., Gerberding, J., Heard, S., Maki, D., Masur, H., McCormick, R., Mermel, L., Pearson, M., Raad, I., Randolph, A. and Weinstein, R. Guidelines for the prevention of intravascular catheter-related infections. *Centres for Disease Control and Prevention. MMWR: Morbidity and Mortality Weekly Report*, 2002; 51(RR-10): 1-29.
10. O'Grady, N., Alexander, M., Burns, L., Dellinger, E., Garland, J., Heard, S., Lipsett, P., Masur, H., Mermel, L., Pearson, M.; Raad, I., Randolph, A., Rupp, M. and Saint, S. Guidelines for the prevention of intravascular catheter-related infections. *American Journal of Infection Control*, 2011; 39(4): S1-S4.