

KNOWLEDGE ASSESSMENT OF NURSING STAFF REGARDING THE MANAGEMENT OF PERIPHERAL VENOUS CATHETERS IN TERTERYCARE HOSPITAL BOLAN MEDICAL COMPLEX QUETTA

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ABSTRACT

Background: Placement of Peripheral Venous Catheter (PVC) is one of the most commonly used procedures in any hospitals. Although incidence of infections associated with PVC are low however it is important that all the nursing staff are well aware of the guidelines regarding the care and management of PVC just to provide the better care to all the patients. The main aim of this audit was to assess the knowledge in each domain and bring in the improvements by the implementation of guidelines.

Material and Method: It was a questionnaire based prospective cross sectional study that included 15 questions it was formed using the International guidelines mainly NICE guidelines. The 5 pillars of this study were VIP scoring, dressing technique, Safety measures, complications of PVC and appropriate documentation regarding PVC.. A total of 30 nursing staff from ICU and CCU of BMC ICQ were included in this audit over a period of 1 month (JULY 2024).

Results: Among the 30 nurses, 85.5% already knew the proper dressing technique.86% knew about the complications. In addition, 65.5% were aware of the VIP scoring, 72% of staff documented the disposal of PVC, but only 46.2% were aware of the safety measures.

Conclusion: 80% was chosen as the standard for determining proficiency in each section. Scores that were lower than 80% were regarded as inadequate, whilst scores that were higher than 80% were regarded as satisfactory. Based on this Audit it was evident that most of the staff lack knowledge regarding VIP scoring, safety measures and in the domain if proper documentation.

Keywords: PVC Peripheral Venous Catheter , VIP score Visual Infusion Phlebitis Score, ICU Intensive Care Unit, CCU Critical Care Unit , ANTT Aseptic non touch technique.

INTRODUCTION

In hospitals, putting in a peripheral venous catheter (PVC) is one of the most common invasive procedures that is done. It involves putting a flexible tube with an introducer needle into a vein so that medicines and fluids can be given intravenously (IV). [1]

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Although the incidence of infections associated with PVC is low, serious complications can occur because of the frequency in which the PVC is used [2, 3].

Care and maintenance of Peripheral Venous Catheter (PVC) in line with best practice is needed in order to reduce the risk of infection and other complications like Phlebitis, extravasation, venous spasm and thrombophlebitis.

Care and management of PCV according to the various International guidelines is listed below: [4][5][6]:

Aseptic non touch technique (ANTT), prior to and after handling PVC, it is necessary to decontaminate the hands. Additionally, it is recommended to use Personal Protective Equipment when working with PVC. [7]

IV administration sets should be changed for clear fluids 72 hours, Lipids 24 hours. Blood or blood products after 2nd unit, after transfusion episode or at 12 hours whichever is sooner. [3][6][8].

PVC site must be visible in order to ascertain Visual Infusion Phlebitis score (VIP) [9]. It is necessary to conduct daily inspections of the PVC site, as well as if the PVC is accessible or infusion rates are changed.

The observation should be recorded in the daily progress sheet. [10][11]

If the VIP is greater or equal to 2 the PVC should be removed. If the site appears infected, a swab should be taken and sent with the tip of the PVC to Microbiology for culture and sensitivity. [10][11]

If bandages are used as extra support to secure PVC, they should be removed at least daily and every time the PVC is accessed or infusion rates are altered in order to inspect the insertion site. [10, 11]

It is the very first audit of its kind to be carried out in BMC.

The primary objective of this Clinical audit is to assess knowledge of nurses working in ICU and CCU setup of BMC and improve the quality of care provided to patients. Not only will it benefit patients also it is going to refine the clinical skills of nursing staff too More specifically, the audit aims to:

1. Assess whether staff nurses are adhering to clinical guidelines and protocols of managing peripheral venous catheter, ensuring the care and safety of patients.
2. Identify areas of improvement in terms of patient, clinical outcomes and patient experiences.
3. Develop and implement protocols based enhanced care.
4. Monitor the impact of implemented interventions and ensure their effectiveness.

Methodology

A questionnaire based cross-sectional study with prospective recruitment was conducted to study the current institutional practices and compare them with the recommended guidelines. The audit was carried out in Bolqn medical complex hospital Quetta, Pakistan.

A total of 30 nursing staff from ICU and CCU was included in this audit over a period of 1 month (JULY 2024). Each staff nurse was thoroughly informed about the study and their consent for filling out the questionnaire was gained. After assessing the results based on questionnaire areas of weaknesses will be addressed and they will be re-assessed.

An ethics approval was granted from the hospital Human Research Ethics Committee (HREC) as the data were collected for auditing and quality improvement.

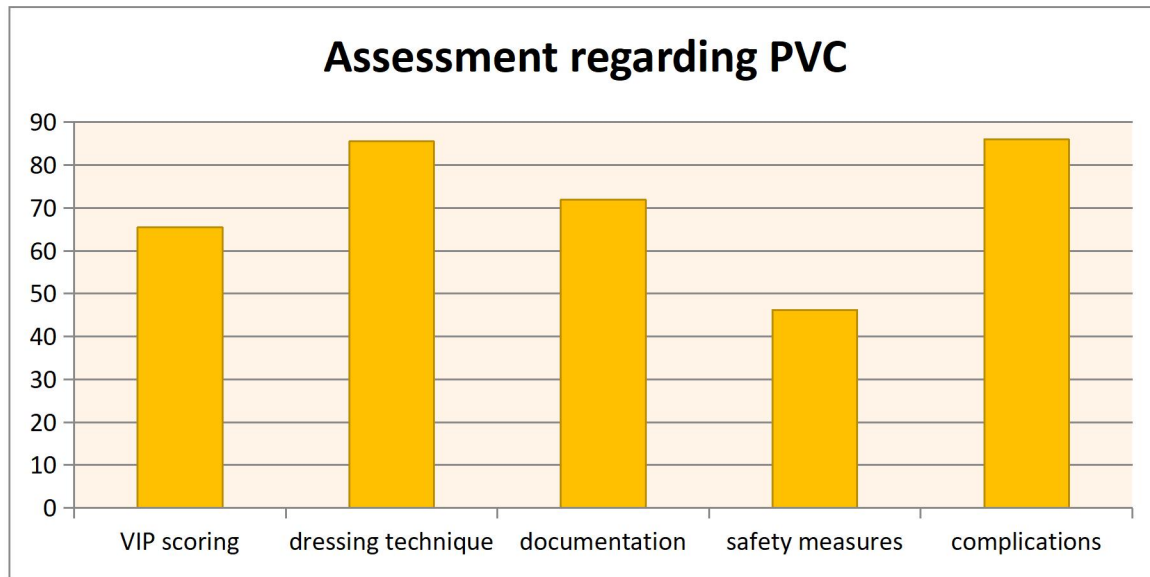
Privacy and confidentiality will also be maintained; any personal information will neither be mentioned in the audit nor be accessed by other participants.

A questionnaire based on the International guidelines was used as a tool for the purpose of assessment. It included parameters concerning knowledge regarding VIP scoring, Technique of PVC, documentation, safety measures and complications associated with PVCs. This Questionnaire included 15 questions that were in accordance with various International guidelines. [3][6][8]. Among the questions, 3 questions were based on VIP scoring, 3 of them on dressing technique, 3 regarding complications, 5 regarding safety measures and 1 regarding documentation of PVC removal.

Results of Audit

Of the 30 nurses, 85.5% already knew the proper dressing technique.86% knew about the complications. In addition, 65.5% were aware of the VIP scoring, 72% of staff documented the disposal of PVC, but only 46.2% were aware of the safety measures.

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Conclusion

80% was chosen as the standard for determining proficiency in each section. Scores that were lower than 80% were regarded as inadequate, whilst scores that were higher than 80% were regarded as satisfactory. When these results are taken into consideration, it becomes clear that the majority of the staff members are well aware of complications as well as the proper dressing technique however, sufficient expertise in the areas of VIP grading, accurate documentation, and safety measures are still needed

Discussion

Hospital is busy environment, nursing staff, particularly those working in the Intensive Care Unit (ICU) and Cardiac Care Unit (CCU), should recognize the necessity for ongoing improvements in the systems they operate within, in order to enhance working conditions and minimize the potential for harm therefore it is paramount to educate nurses regarding Care of Peripheral venous line. Not only it is going to improve the care we provide to our patients but also it will improve the clinical skills and judgment of the Staff as well. Clinical guidelines are used to improve their knowledge and practices.

- Periodically organizing teaching sessions in adherence to protocols regarding VIP scoring, safety measures, and PVC care and management.
- Distribute flyers in each department that highlight VIP scoring and safety precautions in order to inform the nurses of the standards statement.

Acknowledgment

Bolan medical complex hospital Quetta, Pakistan.

Questionnaire:

- 1. VIP scoring in Peripheral venous cannula is done for?**
 - a) Phlebitis
 - b) Pneumonia
 - c) IHD
- 2. How frequently VIP scoring be done?**
 - a) Minimum once daily
 - b) Only at the time of placement of Peripheral venous cannula
 - c) Only at the time of removal of Peripheral venous cannula

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3. **If VIP score equals to 2 or more:**
 - a) Peripheral venous cannula line must be removed and treatment should be initiated
 - b) Normal finding after placement of Peripheral venous cannula
 - c) Continue observation for further change
4. **Step in the Procedure of securing IV line:**
 - a) Peripheral venous cannula should be flushed
 - b) The cannula should be secured using a clean securing transparent dressing and insertion site
 - c) Should remain visible through the dressing
 - d) All of above
5. **What fluid should be used for flushing Peripheral venous cannula?**
 - a) 0.9% N/S
 - b) 5% dextrose
 - c) Ringer lactate
6. **If VIP score equals to 2 or more:**
 - d) Peripheral venous cannula line must be removed and treatment should be initiated
 - e) Normal finding after placement of Peripheral venous cannula
 - f) Continue observation for further change
7. **Peripheral venous cannula should be changed**
 - a) Every 2 days
 - b) Everyday
 - c) Only if clinically indicated (phlebitis, infection or thrombophlebitis, VIP score of 2 or greater)
8. **Complications of Peripheral venous Cannula if not cared and managed properly include:**
 - a) Thrombophlebitis
 - b) Infection, Infiltration
 - c) All of above
9. **IV administration sets should be changed for blood and blood products:**
 - a) After 3 unit
 - b) After 2 units
 - c) No need to change
10. **If bandages are use as extra support to secure Peripheral venous cannula, they should be removed**
 - a) At least daily
 - b) Only if becomes loose
 - c) Only when the Device needs to be removed
11. **Peripheral venous cannula can be used to for blood sampling**
 - a) Yes always
 - b) ONLY ONCE immediately following insertion
 - c) Never
12. **Documentation of the removal of the Peripheral venous cannula is done in your setup**
 - a) Yes always
 - b) No
 - c) Occasionally done

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13. Care and Management of Peripheral venous cannula include

- a) An aseptic non touch technique (ANTT)
- b) Hands must be decontaminated prior to and after accessing Peripheral venous cannula and Personal Protective Equipment should be used when dealing with Peripheral venous cannula
- c) All of above

14. Pressure is applied on the site of Peripheral venous cannula after removal to reduce the risk of

- a) Infection
- b) Hematoma formation
- c) Hemorrhage

15. If site of Peripheral venous cannula appears infected

- a) Start prophylactic antibiotics
- b) Send CBC for TLC
- c) Obtain swab and send to microbiology for culture and sensitivity

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