



Practice of Intravenous Cannulation Care of Clients

Hepsi Bai. J

Assistant Professor, Sree Gokulam Nursing College, Trivandrum

Aruna.V.M

MSc Nursing I year student, Government College of Nursing, Trivandrum

ABSTRACT

Intravenous (IV) therapy is a modality in the care of patients, whereby medication and fluids were administered via intravenous route for the purposes of replacing fluids and electrolytes and administering medication. The present study was undertaken to assess the practice of IV cannula care and to determine the rate of phlebitis among clients with IV cannula. A descriptive study was conducted among 40 IV cannulation procedures of clients admitted in selected wards of tertiary care hospital, Trivandrum, using observation checklist. The results showed that in IV cannulation procedure, pre-procedure phase practices were 64.4%, procedural phase practices were 83.4%, post-procedure phase practices were comparatively less 55.4%. The practice of IV cannulation and post care were varied from 10% to 100%. The study concluded that the education of staff nurses regarding IV cannulation technique and post IV cannulation care with proper monitoring will reduce the incidence of phlebitis and improves the quality of nursing care.

KEYWORDS : practice, intravenous, cannulation care, clients, rate of phlebitis

Introduction

IV cannulation is a technique in which the cannula is placed inside a vein to provide a venous access. IV insertion is a challenging skill performed by the professional nurse. Nurses need to be aware of their level of accountability when performing IV cannulation and it should be incorporated in to practice as a part of holistic patient care. When introducing IV cannula a commitment is required from the individual nurses and the organization.² Phlebitis is an inflammation of tunica intima of the vein. It is most common of the lot, affecting 27 % to 70% of all patients receiving IV therapy. Kathryn Burke (2004) described thrombophlebitis as a common complication of IV therapy, estimated to occur in around 1.3 million patients annually. The benefits of the peripheral intravenous route outweigh the risks. However, this method require registered medical and nursing staff to monitor the patient regularly to ensure that the treatment continues to be the most appropriate and effective⁵

Need and significance of the study

The nurse practicing today are bound with a wide variety of duties and responsibilities and world looks out for more specialized, systematic approach, catering highly proficient skills and techniques. IV therapy evolved as a mere practice initially, later turned out into one of the major responsibilities of a nurse in her day-to-day practice and is an area which is continuously expanding, on the eve of extended and expanded role of a nurse².

Common IV cannulation related complications are phlebitis, fluid infiltration, obstructions and circulatory overload. The common IV related complications are extravasations (4.2%), infiltration (79.2%), inflammation, phlebitis (16.7%) and tenderness over the cannula site and also it increases the health care cost.

Materials and methods

Quantitative approach was used with descriptive design. The population constituted of IV cannulation procedure for clients who are admitted with IV cannula and samples include 40 IV cannulation procedures and its post cannulation care which are selected by purposive sampling technique. The tools used for data collection was Part 1: Observation checklist to assess the practice of IV cannulation procedure, its post care and to determine the rate of phlebitis which has Yes or no answers, Yes carries 1 mark and No carries 0 marks and the total score was 47. Part 2: Observation checklist on IV cannula care which has total of 9 items with two options, Yes / No, Yes carries 1 mark and No carries zero, and the total score was 9. Content validity and reliability of tools were assessed and $r=0.9$. Ethical permission was obtained from the College of Nursing Research Committee and Institution ethical committee.

Results

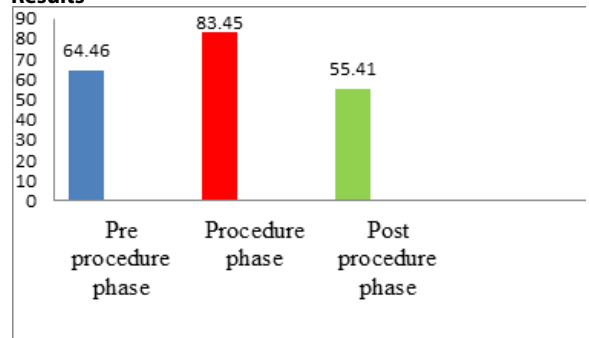
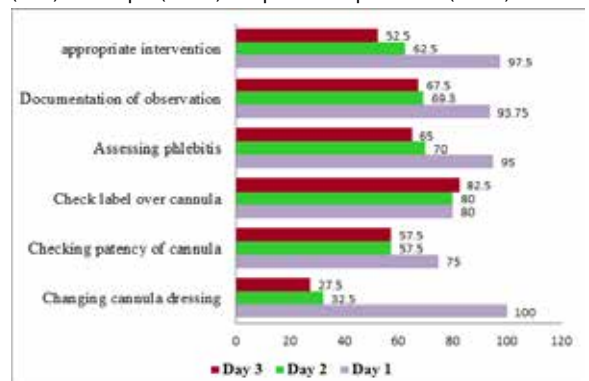


Figure 1: Practice of IV cannulation procedure (n=40)

Figure 1 shows that post procedure phase care was comparatively less (55%) than to pre (64.4%) and procedural phase care (83.4%)



b) Figure 2: Distribution of practice of post IV cannulation care (n=40)

Discussion

a) Practice of IV cannulation care

IV cannulation procedure practice was discussed under three phase including pre procedure, procedure and post procedure phase.

Pre-procedure phase

In the pre procedural phase 100% of the physician's order were checked for IV cannulation and its needs ie. IV fluid infusion and administration of any drugs. Cooley Candy (2004) suggested that the nurses should check the orders by the physician prior to performing

the procedure to ensure that the right procedure is being done for right patient. Woods, (1998) stated increased skin turgor which occurs with edema manifested by smooth, taut shiny skin that cannot be grasped and raised during IV cannulation. 80% of the procedure was explained regarding the need of IV cannula to the client. This finding was study par with the suggestions by Jadhav Sonali (2011) indicated that accurate explanations will help the client to reduce the anxiety and to ensure the client's cooperation during procedure. 49.1% of the articles/ equipment was assembled which was needed for the procedure and about 92.5% comfort was ensured by the staff nurses to the patient. Joden TS (2002) suggested that all needed equipment should be kept ready prior to the procedure it will reduce the chance of complication and helps in saving the time there by improving the better patient outcome.

Procedure phase: Only 20% of hand washing was done during pre procedure phase. This findings was par with the study conducted by Schmid (2000) suggested that the first step in any IV insertion procedure is proper hand washing. The nurses should likewise be conscious about always using clean or sterile supplies. And also WHO (2005) suggested that the health care professionals should ensure hand washing after removing gloves, before and after handling invasive devices and after contact with medical equipment or furniture and it has been indicated to be single most important step in breaking the chain of infection.

The study also showed that 90% of tourniquet was applied about 6 inches above the IV cannulation site and 96.5% of the vein was re-checked and dilated. Roberts (2004) suggested that tapping or stroking the visible vein, application of tourniquet, or massage the site, swabbing, clenching the hand to pump up vein and hanging the forearm downward helps in increasing venous backflow.

Only 12.5% gloves were worn during IV cannulation procedure. Joys D Evan (2002) suggested that the nurses as well as the health care professionals should wear gloves before performing any procedure and there is any possibility of contact with infectious materials so as to reduce the chance of infection.

In the procedure phase, 62.5% of the IV cannulation site was cleaned with antiseptic solution in a circular fashion and 100% of the IV cannula was removed from its packing without breaking the sterility. Human et al (2000) suggested that preparation of IV site with good skin cleansing agent and antiseptic technique are considered one of the most important measures for preventing infection associated with IV devices⁶.

More than 97.5% of the skins were stretched and 100% of IV cannula was inserted at 15-30 degree angle to the blood vessel. Rosenthal et al (2005) suggested that the skin should be stretched tightly prior to cannula insertion. Due to loss of supportive tissue, vein tend to be more superficially and lower insertion angle for venipuncture should be 5-15 degrees⁷.

In the study 32.5% of IV cannula was flushed with normal saline and study 100% of the IV cannula was secured with adhesive tapes. Schmid (2000) suggested that after the IV cannula is safely inserted, the site should be covered with a sterile adhesive dressing. But this contradicted by the study conducted by Royal College of Nursing RCN (2010) recommended that the dressing must not be secured with a bandage as this may causes them to retain moisture and makes it impossible to see the insertion site. To facilitate this, the peripheral intravenous catheter should be dressed with a transparent dressing to allow the site to be seen⁶.

Post procedure phase

In post procedural phase of IV cannulation, about 60% of the IV cannula was labeled with date and time. Finlay (2008) stated that all aspects of intravenous therapy and vascular access should be documented according to local policy, procedures, national and professional guidance. It was found 82.5% of waste obtained from IV cannulation procedure was disposed in appropriate containers by the staff nurses. About 59 % of the procedure was documented accurately. Finlay (2008) stated all aspects of intravenous therapy and vascular access should be documented according to local policy, procedures, national and professional guidance. The document should contain ev-

idence of informed consent, the date and time of insertion of the vascular access device (VAD), the reason for insertion of the VAD, details of site preparation, the number and location of insertion, attempts details of the insertion technique utilized, the insertion site including actual vein(s) used, the name of the person placing the device, problems encountered during insertion³.

Practice of post IV cannulation care:

In the present study about 92.5% of the IV cannula care practices were adequate during the first day and it was reduced to 60% and 42.5% in day 2 and day 3 respectively. A study conducted by Royal College of Nursing (2011) suggested that the IV cannula dressing should be changed routinely and use transparent dressing to visualize the area for any infection or associated problems. American Nurses Association (2012) suggested that the nurses should be responsible for the routine care of IV cannula and should make the patency of the cannula. Tanger and Ginsberg (2005) recommended replacing adult peripheral IV cannula in every 48-72 hours to decrease the incidence of phlebitis.

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