



Clinical Audit

Effectiveness of nurse fabricated innovative device (K-brace) on prevention of phlebitis among patients selected at Kauvery hospital, Radial road

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1. Background

Vascular access cannulation through the use of peripheral venous catheters (PVCs) is a common practice and is considered the most common invasive procedure performed on hospitalized patients. It is a standard way of administration of antibiotics, fluids and other medications. If the cannulated site is not taken care of appropriately, it can lead to complications such as infiltration, phlebitis and extravasation. On unpredictable occasions, the complications have led to a sentinel event also.

Being a start-up hospital, proactive measures were in place to prevent IV complications such as appropriate flushing protocol, scrub the hub, aseptic techniques, Visual Infusion Phlebitis (VIP) scoring etc. In spite of the proactive measures instituted, there was rise in phlebitis and a few infiltrations. During a brain storming session on the root cause analysis, it was found that heavy sagging of extensions might have led to the tip of the cannula causing friction to vessel wall, which might have led to infiltrations. Hence, we decided to innovate a product, which helps in preventing the sagging of the extensions. The nurses came out with a bracelet with pockets to anchor the IV extensions. The in-house designed device is "K-brace" (named after Kauvery Hospital as Kauvery - Brace).

The study was conducted on 60 samples randomly distributed, 30 in control group and 30 in experimental group. The device was applied on patients in the experimental group. The study revealed that there was a marked decrease in the incidence of phlebitis with the use of this device along with other measures currently practiced for controlling phlebitis in the hospital.

2. Materials and Methods

Design: This was a quasi-experimental study to evaluate the effectiveness of K-Brace.

Participants: The participants consisted of 60 in-patients, who had been hospitalized for at least 4 days in the ward at Kauvery Hospital and who had received intravenous therapy.

Methods: A dedicated observer reviewed catheter sites daily using a checklist. The study was conducted over 3 months period.

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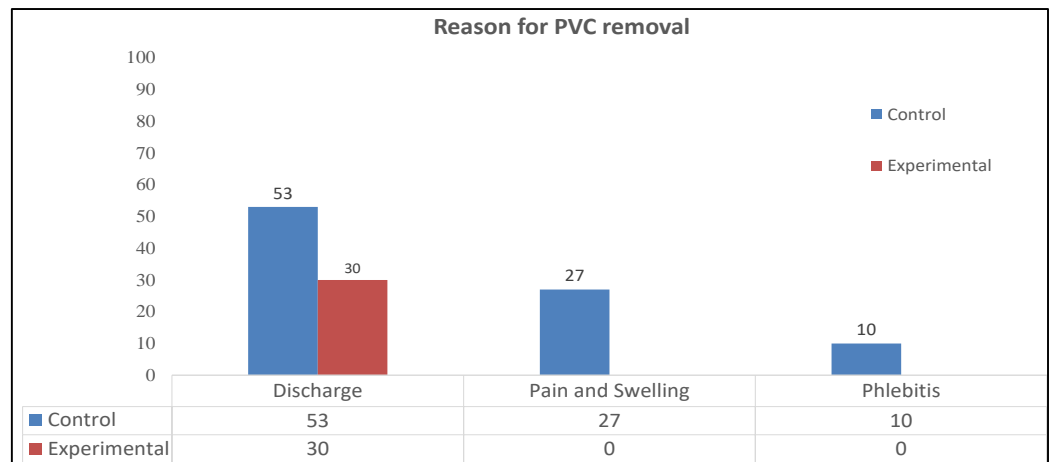
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Sampling technique: Random sampling was done using odd and even method where the patients admitted in odd number rooms were taken into Control group and patients admitted in even number rooms were considered in experimental group.

Setting: The study was conducted at Kauvery Hospital, Radial road in ward, 7th floor and 8th floor (Multispecialty ward) which have 23 beds each, total of 46 beds.

K-Brace: It's made from left over oven materials from the OT and "hence health out of waste". No cost is involved in stitching the K-brace.

3. Results



In control group 27%, developed pain, swelling, and 10% developed infiltration, whereas no one developed IV complications in experimental group.

4. Discussion

Above half of the IV complications (50%) were associated with 18 g Venflon, 43% with 20 g and 7% with 22 g Venflon in the control group whereas no IV complications were associated with Venflon size in the experimental group.

A 64% IV complications were seen in patients having Venflon in left hand in control group, whereas no IV complications were associated with catheter side in the experimental group.

The 64% IV complications were observed in patients having triple lumen extensions in control group, whereas no iv complications observed in experimental group pertaining the extension.

The 57% IV complications developed in patients who were administered antibiotics in control group whereas no one developed iv complications in experimental group.

The 47% IV complications developed in patients who were having IV line more than 4 days in control group whereas no one developed iv complications in experimental group.

Conclusion

Phlebitis is an on-going problem in present-day clinical practice. Avoiding of preventable risk factors like appropriate flushing protocol in-between medications, scrub the hub before accessing the IV port, application of K-Brace and initiating new line for high alert medications are required to prevent phlebitis.

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