

Time to Dress Up: Extending Your Catheter Dwell Time with a Dressing that Lasts

A Randomized, Controlled Study

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Background

The 2016 Infusion Nursing Standard of Practice (INS) recommends “replacement of the short peripheral catheter when clinically indicated” to preserve a functioning catheter. Replacement should be based on an assessment of the patient’s condition, access site, skin and vein integrity, length and type of prescribed therapy, venue of care, integrity and patency of VAD, dressing and stabilization device.” INS states that “the use of an IV catheter stabilization device may provide a reduction in overall complications and improve dwell times.” The Centers for Disease Control and Prevention (CDC) recommends use of chlorhexidine (CHX)-impregnated dressings to prevent CRBSIs. As part of an overall goal to achieve 1 PIVC per patient, Hartford Hospital decided to test an edge-to-edge chlorhexidine-impregnated dressing with built-in securement as a critical component to help prevent avoidable complications, such as CR-BSIs, phlebitis and infiltration.

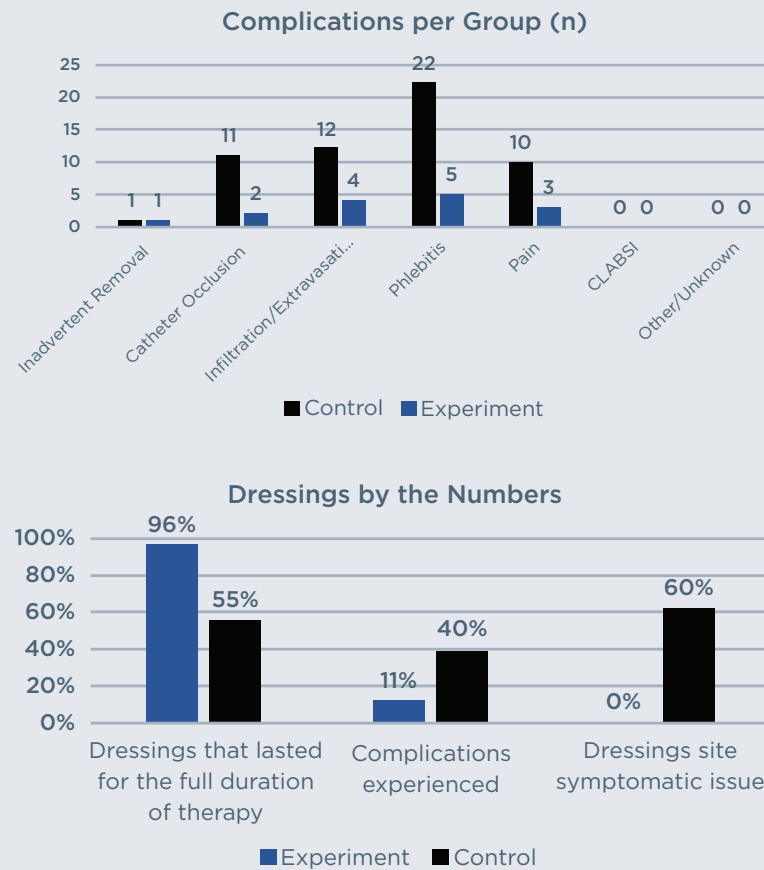
Purpose

This randomized controlled study sought to establish a best practice Five Rights™ approach (experimental arm) to optimize PIVC catheter dwell time compared to PIVCs inserted per current standard (control arm). We hypothesized that the exp'l arm would optimize catheter dwell time, and a pure chlorhexidine (CHX) dressing designed with securement would provide stabilization of the PIVC and protect the patient from infection, compared to a standard transparent film dressing.

Methods

After approval from the Hospital’s IRB, the study was performed in a 47-bed medical unit from April 2017-February 2018, with all PIVC sites assessed daily. All control PIVCs were removed per policy or when symptomatic, and if needed, a new experimental PIVC was inserted. All PIVCs in the study were assessed daily by a research RN with a photograph taken to support each assessment. The study was powered for 210 sites to be compared; 207 were used (exp'l 113, control 94). An innovative app on the study iPad that used an OMG-validated process, was HIPAA compliant, and was calibrated for data consistency was used to track all data. During the trial, 47 measures were tracked on the app for every patient enrolled along with images of the catheter site. After enrollment, 21 of the 47 measures related to the catheter condition, patient experience, and site symptoms/complications were repeatedly documented in a daily assessment of the IV site with corresponding images. Dressing-specific documentation included IV dressing type and dressing assessment, which included fields such as “Clean/Dry and Intact”, “Moist and soiled with blood/discharge”, “Dry and soiled with blood/discharge”, “Loose or Lifting”, “Completely off” and “Other”. The dressing was assessed during initial placement and during daily rounds and documented each day.

Results



The control arm that experienced complications with the dressing used the market-leading standard dressing 82.6% of the time. Among the patients in the experimental arm, there were 0 instances of site irritation and allergic reactions and there were 0 complaints or adverse events reported.

Conclusion

- The CHX securement dressing was significantly more likely to last to therapy completion and contribute to lower overall phlebitis and infiltration rates, likely due to its prolonged suppression of bacterial growth.
- By using a FIVE RIGHTS approach, PIVC dwell times were extended with few PIVC-related complications.

Example A

Control-arm PIVC lasted 20.4 hrs. Removed due to **phlebitis**.



Exp'l arm (same patient) lasted 197.6 hrs. Patient discharged to rehab on day 8.



Image 1: Placement



Image 2: Day 8

Example B

Control-arm PIVC lasted 41.4 hrs. Removed due to **infiltration**.



Exp'l-arm (same patient) PIVC lasted 98.6 hrs (4 days). Patient discharged to home.



References

Devries, M. et al. Protected Clinical Indication of Peripheral Intravenous Lines: Successful Implementation. JAVA 2016. V21, N2, 89-92
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CDC Updated Recommendations on the Use of Chlorhexidine-Impregnated Dressings for Prevention of Intravascular Catheter-Related Infections (2017)

Disclosures

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