Development of a CVAD Cleansing and Dressing Nursing Guideline

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Introduction

Almost all patients in the paediatric oncology ward have a central venous access device (CVAD) for the purpose of administering chemotherapy. It is recommended that 2% chlorhexidine with 70% alcohol swab sticks be used for cleansing of the CVAD exit site. However, there is a lack of standardisation as to which alternative cleansing solution can be used in patients who develop hypersensitivity reactions. Additionally, the type of CVAD dressing used has been observed to be inconsistent, and ward nurses have often cited a lack of knowledge and expertise in managing CVAD-associated skin impairments.

Objective

1. To standardise the CVAD cleansing and dressing practice in the paediatric oncology ward
2. To improve the confidence and knowledge of the paediatric oncology nurses in selecting appropriate cleansing and dressing products for patients with CVAD-associated skin impairments

Methodology

A literature review was conducted to identify current evidence in CVAD dressing care. From the available sources, the evidence-based CVAD dressing algorithm by Broadhurst et al. (2017) was adapted to develop our nursing guideline. A pre-test consisting of various CVAD site conditions was conducted to survey the baseline knowledge and confidence level of the nurses. Four teaching sessions were conducted by the CVAD wound champions to introduce the nursing guideline, and copies of the guideline were placed in the ward for easy reference. A post-test was conducted 1 month after the teaching sessions to compare the results.

Results

While nurses' confidence remained similar to the pre-intervention levels, **92%** of the nurses were able to identify an uncomplicated CVAD site and select the appropriate cleansing and dressing products to be used, as compared to only **57%** previously. However, the post-test revealed that nurses still found it challenging to accurately identify the different types of CVAD-associated skin impairments, hindering their ability to select the most appropriate cleansing and dressing products. Nonetheless, the proportion of respondents who were able to accurately assess a CVAD-associated skin impairments and then select the appropriate cleansing and dressing products rose from **33%** to **50%**.

Conclusion

The CVAD cleansing and dressing guideline has helped to standardise practice in the paediatric oncology ward. However, more teaching sessions need to be conducted to reinforce adherence to the guideline as well as to improve the knowledge of the nurses. Moreover, as CVAD-associated skin impairments can manifest in various forms, there is a need for on-going teaching and real-life case studies that would increase the nurses' breadth of exposure, so as to enhance their assessment and CVAD management skills.

References

- Broadhurst, D., Moureau, N., Ullman, A. J. & World Congress of Vascular Access Skin Impairment Management Advisory Panel. (2017). Management of Central Venous Access Device-Associated Skin Impairment: An Evidence-Based Algorithm. *Journal of Wound Ostomy Continence Nursing*, 44(3), 211-220.

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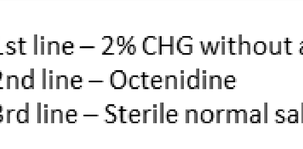
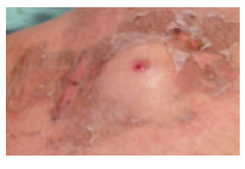
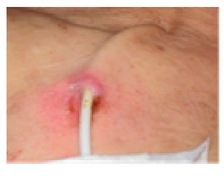
CVAD cleansing & dressing nursing guideline

CVAD Exit Site Skin Condition	Description	Cleansing Agent	Recommended Dressing & Management	Re-assessment
Normal skin 	Exit site clean Surrounding skin healthy	2% CHG + 70% alcohol swab stick	Semi-permeable transparent film (e.g. Tegaderm or IV 3000)	Per-shift monitoring of exit site Weekly dressing change
Injured skin  	**Stripping:** Shallow, irregular lesions, shiny skin **Tears:** Partial or full thickness Tension blisters	2% CHG without alcohol	**Primary dressing:** Non-adherent wound product (e.g. Urgotul or silicon-based) **Secondary dressing:** Mepore or foam dressing if skin is weepy Proper application and removal technique can prevent skin injuries Use adhesive remover for non-traumatic removal of dressing	Assess wound every 3-4 days ↓ If skin condition does not improve, contact Wound Resource Nurse
Skin irritation or contact dermatitis  	Skin colour changes, persisting 30mins after dressing change, and/or burning, itchy skin or presence of other lesions	Octenidine	**Primary dressing:** Urgotul **Secondary dressing:** Mepore or foam (if weepy) Avoid occlusive dressing till skin recovers In severe case consider referral to dermatologist/short-term application of steroid creams as per medical team	
Exit site infection  	Redness, hardness/tenderness within 2cm of the catheter exit site Discharge seen may range from serous, clear fluid to thick, purulent pus (yellow/greenish colour)	Swab the exit site (for aerobic wound culture) 2% CHG + 70% alcohol swab stick	**Primary dressing:** Antimicrobial products (e.g. Urgotul SSD, Aquacel Ag, or Biatain Ag) **Secondary dressing:** Mepore or foam dressing in presence of heavy exudate Inform surgeons immediately	

Management of hypersensitivity to 2% chlorhexidine (CHG) with 70% alcohol:

- 1st line – 2% CHG without alcohol
- 2nd line – Octenidine
- 3rd line – Sterile normal saline

Before application of any dressings:

- Ensure complete dryness
- Use a skin protector (e.g. Cavilon swab stick)

Paediatric Oncology, Sept 2018 adopted from: Broadhurst, D., Moureau, N., Ullman, A. J. & World Congress of Vascular Access Skin Impairment Management Advisory Panel. (2017). Management of Central Venous Access Device-Associated Skin Impairment: An Evidence-Based Algorithm. *Journal of Wound Ostomy Continence Nursing*, 44(3), 211-220.