

Capping Off Infection: Does the Use of Alcohol-Impregnated Port Protectors Decrease the Number of CLABSIs?

Carver, Jamie BSN, RN; Etter, Elizabeth RN; Nicolosi, Stephen BSN, RN; Repa, Lura BSN, RN; Smith, Alyssa BSN, RN

6 Acute Care Medicine and Inpatient Cancer Units

Introduction

Infection rates in hospitals are a major public health problem. The impact of hospital-acquired infections not only affects patients, but also healthcare workers and insurance companies. Patients that have a central venous catheter (CVC) are more at risk for developing an infection. CLABSIs are associated with increased lengths of hospital stay and costs as high as \$29,000 per episode. The estimated annual cost of CLABSIs to the health care system in the United States is \$2.3 billion (Guerin et al). In 2002 bloodstream infections accounted for 250,000 infections and more than 30,000 deaths across the US. Additionally, the Joint Commission has made prevention of bloodstream infections a 2010 National Patient Safety Goal (Sweet et al). Various sources of contamination come from extra-luminal and intra-luminal sources, necessitating a varying degree of efforts trying to reduce such contaminants. Such efforts include the use of central line care protocols and alcoholimpregnated port catheters, versus manually scrubbing the hubs with alcohol alone. This proposes the question, do the impregnated port catheters successfully remove organisms and in turn reduce the overall number of CLABSIs?

PICO Question

Population: Patients with central venous access

Intervention: Alcohol-impregnated port protector caps

Comparison: Difference in infection rates when using port protectors versus not

Outcome: Patients have decreased CLABSIs

Question: Do alcohol-impregnated port protectors

decrease the incidence of CLABSIs?

Methods

Keywords: central line infections, CLABSI, alcohol-impregnated port protectors, preventing central line infections

Articles Reviewed: 5 Articles Used: 3

Databases: EBSCO, Academic Search Premiere

Results

Article	Methods	Results
Impact of alcohol-impregnated port protectors	 1 year study completed on an adult hematology- oncology floor 	 CLABSIs decreased from a pre-intervention rate of 2.3/1000 central line days to 0.3/1000 central line days Contaminated blood cultures decreased from 2.5% in control to 0.2% in intervention phase
Continuous passive disinfection of catheter hubs prevents contamination and bloodstream infection	 3 phase, multi-facility, quasi-experimental study of adults with PICC lines inserted at facility left in for 5+ consecutive days Blood draws taken from lines and micro analyzed for bacteria presence 	 Contamination rates dropped from 12.7% to 5.5% when use of caps was initated
Keeping needleless connectors clean	 2 different central line disinfection protocols assessed, "scrubbing the hub" with alcohol wipe vs. alcohol-impregnated cap 	 Places emphasis on correctly performing whichever method your healthcare facility supports per protocols

Discussion

Our research idea and literature review began prior to the implementation of the caps here at PSHMC. Although the new policies have already gone into effect, our presentation is a valid way to reinforce the importance of why CLABSIs occur in the hospital setting and how best to prevent them from happening. By utilizing our literature review and conducting evidence based research, we can focus on prevention and teaching our patients with concrete evidence and knowledge of this topic.

Conclusions

The implementation of impregnated port catheters greatly reduces the number of CLABSIs in comparison with scrubbing the hub with alcohol alone. The caps successfully remove organisms and decontaminate central lines in patients who are in both the acute care and oncology patient populations. Practice changes are already in effect at PSHMC regarding CLABSIs, a hospital-wide issue. Nurses are held accountable for adapting to such changes and carrying out the new policies to better improve our infection rates and patient outcomes.

References

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