Introduction

Traditionally, patients in intensive care units are bathed with soap and water. A growing body of research shows that replacing basin baths with Chlorhexidine (CHG) baths reduces rates of Vancomycin Resistant Enterococci (VRE), Central Line Associated Blood Stream Infections (CLABSIs), Methicillin Resistant Staphylococcus Aureus (MRSA), and surgical site infections. CHG baths, in turn, reduce complications and costs associated with hospital-acquired infections.

Methods

Literature review of recently published peer-reviewed articles from multiple sources. This includes one randomized controlled trial, seven quasi-experimental studies, one qualitative study, and one non-experimental study.

Results

Randomized Controlled Trial:

-4.1 CLABSI (CHG group) vs. 10.4 CLABSI (Basin Bath group) per 1000 patient days . (1)

Quasi-Experimental Studies:

-Overall decrease in MRSA, VRE, and CLABSI (2) -No significant decrease in Clostridium Difficile colitis with CHG baths. (4)

"Chlorhexidine-based solutions reduce the density of skin colonization with pathogens such as MRSA and VRE (skin asepsis), thus lowering the risk of horizontal transmission between healthcare workers and patients." (2)

"Compared with soap and water baths, cleansing patients with chlorhexidine-saturated cloths resulted in less colonies of VRE on patients’ skin and less VRE contamination of healthcare workers’ hands and environmental surfaces." (10)

- Pre-packaged CHG bathing is an effective means of pre-surgical skin preparation to prevent surgical site infection. (7)

- Significant decline in blood culture contaminations in patients receiving CHG baths. (6)

Qualitative Study:

- Acquisition of CLABSI: rate reduction of 73.7% over a 3 month period of time while bathing with CHG impregnated cloths. (3)

Non-Experimental Study

- Bacterial growth was found in 100% of cultured basin samples, 60.8% of which were gram negative. (9)

- Bacterial count of basins were comparable to that of urine collected from patient’s with UTIs. (9)

Clinical Implications and Considerations

- A risk of using CHG baths is skin irritation or allergic reaction. (4)

- Antimicrobial activity is limited to only 6 hours post bath. (8)

- CHG baths do not require additional work and time. They also eliminate the need for bath basins, which are a known source of contamination. (3)

- "An estimated 248,678 Blood Stream Infections occur in hospitals each year, with an estimated mortality rate of 12% to 25% for each CLABSI. The financial burden on the healthcare system is estimated at $36,441 per episode, with an annual expenditure of approximately $9,060,074,998." (3)

- With a 75% decrease in BSI’s, approximately $1.5 million could be saved each year if every Intensive Care unit were to adopt CHG bathing. (5)

Conclusions

Daily CHG bathing is a simple and effective way to decrease hospital-acquired infections among intensive care patients. Compared to a basin bath, CHG impregnated cloths take less time from the Registered Nurse. This time can then be directed toward other patient needs. Patient and staff education is essential for successful implementation of this intervention. Decreased infection rates lead to a shorter length of stay, increased patient satisfaction, lower mortality rates, and reduction of hospital resources allocated to nosocomial infections.

References


