Effectiveness of Chlorhexidine-Impregnated Dressings in Reducing Central Line Associated Bloodstream Infections in Critically Ill Patients

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Introduction

Intravascular catheters In patients that have an underlying disease, the mortality rate of these infections rise to 4% to 20% from a catheter associated blood stream infection (CLABSI). This statistic estimates approximately 3,200 to 50,000 patients will die in one year from this infection. There are five risk factors that contribute to these deadly infections; catheter insertion, accessing the catheter, other infections throughout the body, and contaminated medications or fluids. The current policy is the use of an occlusive transparent dressing with a chlorhexidine skin prep to be applied over the site. These are to be changed every seven days unless soiled or not intact. The opposing option would be the use of a chlorhexidine gluconate impregnated dressing.

P: Patients in the ICU with central lines

I: Chlorhexidine dressings

C: Regular occlusive dressing currently used

O: Decrease in CLABSI's

Methods

Keywords: chlorhexidine, dressing, infection, central line, occlusive dressing, reducing, prevention, central venous catheter, infection control.
Articles reviewed: 9
Articles used: 6
Databases: Academic Search Premier, Peer Reviewed, EBSCO host

Results

Evidence reviewed supports the use of chlorhexidine-impregnated dressings in the prevention of CLABSI infections.
According to the studies performed, chlorhexidine dressings reduced the risk of CLABSIs by 67% and 46%, respectively, when compared to other standard occlusive dressings.

Evidence reviewed also supports the use of chlorhexidine-impregnated dressings to increase cost effectiveness in the health care setting.
On a small scale level, a savings of $133, per catheter, was achieved when the chlorhexidine dressing was utilized.

Larger scale cost effectiveness included a decrease in length of stay and total overall treatment cost for those patients who did not experience CLABSIs.

Discussion

In January 2013, the CDC reported 41,000 cases of CLABSIs[3]. CLABSI have a mortality rate of 12-25%[2], increase the length of stay by 11 days and increase ICU costs by greater than $80,000 per patient, costing the US economy $37.24 billion dollars in 2010[1]. In examining the results of two randomized controlled trials comparing chlorhexidine-impregnated dressings with transparent occlusive dressings, one showed at 46% reduction[4] in CLABSIs while the other, 67%[6]. The third study also indicates that using the chlorhexidine-impregnated dressings significantly reduced CLABSI rates from 1.4 to 0.6 per catheter days and added that savings of $133 with 7-day standard dressing changes could be expected with their use, per catheter[5]. These findings indicate the chlorhexidine-impregnated dressings, along with the CLABSI bundle, are an effective measure to decrease CLABI rates, improving both patient care and cost-containment efforts of the hospitals that provide care to critically ill patients.

Conclusions

In conclusion, central line associated blood stream infections are a significant issue in intensive care units. There are many interventions in place to reduce and prevent this continuing problem. Through evidence-based research, the use of chlorhexidine impregnanted dressings significantly decreases the amount of CLABSI's. In conjunction with this the cost rate analysis will save hospitals money in the long run. Prevention of blood stream infections remains an important goal in the care of critically ill patients. This requires cooperation from all health care members and education. We can make a change and provide better outcomes for out patients with involvement and advocating for our patients. The use of the chlorhexidine impregnated dressing may improve patient outcomes and decrease costs; therefore, we recommend a trial on the unit.

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