In hospitalized patients that receive an intravascular device, does chlorhexidine or povidone iodine provide better asepsis and prevention of long term infections, either localized or systemic?

Multiple articles found that Chlorhexidine provided better protection from infection. Girard, Comby, and Jacques (2012) found that for every 1000 days that a catheter was in place, 15.5 of them were infected when povidone iodine was used, compared to 11.2 for chlorhexidine. Mimoz et. al. (2015) found that chlorhexidine had the lowest rate of infection by six-fold compared to povidone iodine.

Some of the limitations of the studies include the difference in medical history of each patient, the inability to control the patient’s adherence to the plan of care, and not being able whether catheter insertion compared to the multiple other sources of infection was the cause of any infection in the patients.

The evidence, although limited and carrying many variables, found that chlorhexidine did in-fact lead to lower rates of infection. The recommended practice change would be to replace all forms of antiseptic wipes used for intravascular device insertion with ones that are chlorhexidine based.

It is also recommended that further research be done specifically on chlorhexidine to verify best use.

Antisepsis for Intravascular Device Insertion: Chlorhexidine Versus Povidone Iodine
Ethan Neily & Sam Hopkins, Plymouth State University

Significance

Currently one of the largest issues in healthcare is infections related to in-hospital procedures, making it a common topic of research. One of the most common causes is the improper insertion of intravascular devices and their care. Chlorhexidine and povidone-iodine are the two main formulas used for antisepsis, however chlorhexidine may provide the best protection from infectious agents. The antiseptic technique used before insertion and for the continuing care of the device is critical in the prevention of infections, and a simple change in the formula used may be able to prevent numerous preventable illnesses (Girard, Comby, & Jacques, 2012).

Problem Statement

In hospitalized patients that receive an intravascular device, does chlorhexidine or povidone iodine provide better asepsis and prevention of long term infections, either localized or systemic?

Literature Review

Multiple articles found that Chlorhexidine provided better protection from infection. Girard, Comby, and Jacques (2012) found that for every 1000 days that a catheter was in place, 15.5 of them were infected when povidone iodine was used, compared to 11.2 for chlorhexidine. Mimoz et. al. (2015) found that chlorhexidine had the lowest rate of infection by six-fold compared to povidone iodine.

Some of the limitations of the studies include the difference in medical history of each patient, the inability to control the patient’s adherence to the plan of care, and not being able whether catheter insertion compared to the multiple other sources of infection was the cause of any infection in the patients.

Recommended Change

The evidence, although limited and carrying many variables, found that chlorhexidine did in-fact lead to lower rates of infection. The recommended practice change would be to replace all forms of antiseptic wipes used for intravascular device insertion with ones that are chlorhexidine based.

It is also recommended that further research be done specifically on chlorhexidine to verify best use.

Lewin Model of Change

Unfreeze

• Provide evidence comparing chlorhexidine to povidone iodine
• Educate on the significance and need for the change

Move

• Provide only a Chlorhexidine based antiseptic wipe

Refreeze

• Change the hospital policy
• Continue to research

References


Research Advisor: Ms. Sandra Jeanne Van Gundy