

Research Compact

Tags

CLABSI, antiseptic bathing, chlorhexidine gluconate, octenidine dihydrochloride

Title

Effect of antiseptic bathing with chlorhexidine or octenidine on central-line associated bloodstream infections in intensive care patients: a cluster-randomized controlled trial

Authors

Denkel L.A., Schwab F., Clausmeyer J., Behnke M., Golembus J., Wolke S., Gastmeier P., Geffers C.

Source

2021, CMI 2790, <https://doi.org/10.1016/j.cmi.2021.12.023>

Aim of the study

The study compared the effect of daily patient bathing with octenidine, chlorhexidine or water and soap in intensive care patients with central-line (CL), with regard to multifactorial catheter associated bloodstream infections (CLABSI).

Methods

The multi-center, cluster-randomized, controlled, clinical trial had an intervention period of 12 months. During this period the patients were bathed daily with 2% chlorhexidine-impregnated cloths, 0.08% octenidine wash mitts or water and soap (control group). All groups received a standardized operation protocol depending on the product. The primary end point was the incidence for CLABSI per 1,000 CL days

Results

72 intensive care units and 76,815 patients were included in the study. During the intervention period, chlorhexidine or octenidine products were very well tolerated by the patients. No significant difference in infection rates was observed between the three groups.

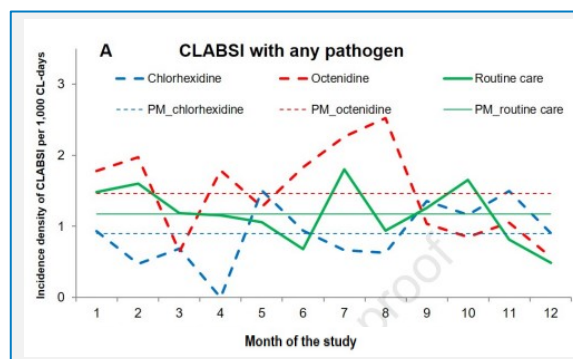


Illustration adapted to: Denkel LA, Schwab F, Clausmeyer J, Behnke M, Golembus J, Wolke S, Gastmeier P, Geffers C, Effect of antiseptic bathing with chlorhexidine or octenidine on central-line associated bloodstream infections in intensive care patients: a cluster-randomised controlled trial, *Clinical Microbiology and Infection*, <https://doi.org/10.1016/j.cmi.2021.12.023>

Limitations

- Cluster randomization was used to compare different clinics that were not congruent in their standards of care.
- Differences in SOPs influenced the multifactorial event of CLABSI
 - Disinfection of the catheter in CHG group but not in the OCT group
 - Use of care creams in the OCT group that could potentially have a negative impact on CLABSI, e.g., due to germ contamination.
- Changed KRINKO recommendation during ongoing study led to inconsistent disinfection of skin around catheter insertion site
- Low correlation within cluster (intra-cluster correlation/ICC = 0.0003) may lead to an underestimation of number of patients → no significant results

Conclusion

In the present study, no significant effect on the rate of bloodstream infections was observed by antiseptic bathing with chlorhexidine or octenidine. However, the study has limitations and should therefore be evaluated in the overall context of the known literature. The procedure of antiseptic bathing has already shown a positive effect in many large studies.^{1,2,3} Thus, antiseptic bathing remains an important component in the prevention of multifactorial bloodstream infections.

¹Gastmeier P, et al. *J Antimicrob Chemother.* 2016 Sep;71(9):2569-76. doi: 10.1093/jac/dkw170. Epub 2016 May 27

²Climo MW, et al. *N Engl J Med.* 2013 Feb 7;368(6):533-42. doi: 10.1056/NEJMoa1113849. Erratum in: *N Engl J Med.* 2013 Jun 13;368(24):2341.

³Huang SS, et al. *N Engl J Med.* 2013 Jun 13;368(24):2255-65. doi: 10.1056/NEJMoa1207290. Erratum in: *N Engl J Med.* 2014 Feb 27;370(9):886.