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EFFECTIVENESS OF DAILY CHLORHEXIDINE BATHING FOR REDUCING GRAM NEGATIVE INFECTIONS: A META-ANALYSIS

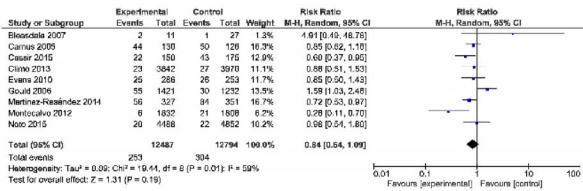
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Background Multiple studies have demonstrated that daily chlorhexidine gluconate (CHG) bathing is associated with a significant reduction in infections caused by Gram positive pathogens. However, there is limited data on the effectiveness of daily CHG bathing on gram negative infections. The aim of this study was to determine if daily CHG bathing is effective in controlling and preventing gram negative infections in adult ICU patients.

Methods We searched MEDLINE and 3 other databases for original studies comparing daily CHG bathing to soap and water bathing. All studies investigating the effectiveness of daily CHG bathing on gram negative infections were eligible. Two investigators extracted data independently on baseline characteristics, study design, form and concentration of CHG, incidence and outcomes related to gram negative infections. Data were combined by means of a random-effects model and pooled relative risk ratios (RRs) and 95% confidence intervals (CIs) were derived for overall gram negative infections and individual gram negative pathogens.

Results Eleven studies (n=27,793 patients) met the inclusion criteria. Of these, 13,852 patients received daily CHG bathing, and 13,941 patients daily bathing with soap and water. Daily CHG bathing was not associated with a lower



Abstract ID: 98 Figure 1

risk of gram negative infections (2.03% vs. 2.38%; RR 0.84; 95%CI: 0.64–1.09, P=.19). Subgroup analysis demonstrated that daily CHG bathing significantly reduced the risk of gram negative infections caused by Acinetobacter (RR, 0.33; 95% CI: 0.17–0.66, P<.00001) but was not effective for E. coli, Klebsiella, Enterobacter and Pseudomonas associated gram negative infections.

Conclusions In a meta-analysis of 11 studies, the use of daily CHG was not associated with a lower risk of gram negative infections. However, daily CHG bathing appears to be effective for Acinetobacter associated gram negative infections. There is a need for larger and better designed trials with adequate power with gram negative infections as the primary endpoint to determine the effectiveness of daily CHG bathing.