**AIPNO Research Showcase, Clinical Research- Internal Medicine Resident, Cleveland Clinic**

**Title:** Effectiveness of daily chlorhexidine bathing for reducing Gram negative infections: a meta-analysis

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**Abstract**

**Objective**. 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 reducing gram negative infections in adult ICU patients.

**Design**. We searched MEDLINE and 3 other databases for original studies comparing daily CHG bathing to soap and water bathing. 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.

**Results**. Eleven studies (n=27,793 patients) met the inclusion criteria. Daily CHG bathing was not associated with a lower 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**. 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.

**Conflicts of interest:**

**All authors have no potential conflict of interest.**