

ABSTRACT
COMPARISON OF METHICILIN-RESISTANT STAPHYLOCOCCUS AUREUS ANTIBACTERIAL EFFICACY OF POVIDONE-IODINE, ALCOHOL, AND CLORHEXIDINE GLUCONATE-CETRIMIDE

Introduction: *Methicilin-Resistant Staphylococcus Aureus* (MRSA) has been known worldwide as one of the most prominent cause of nosocomial infection. Usage of antiseptics is one of many methods to prevent infections. Some of the most popular antiseptics include povidone-iodine, alcohol, and clorhexidine. This study means to differentiate efficacies between antiseptics on MRSA.

Methods: This study uses true experimental design. Results are presented as descriptive statistics. For each antiseptic, up to 8 different concentrations are diluted with MRSA. Serial dilutions would then be streaked on agar plate and divided by time interval of 1 minute, 10 minutes, 1 hour, and 18 hours to determine both Minimum Inhibitory Concentration (MIC) and Minimum Bactericidal Concentration (MBC). MIC and MBC of the three antiseptics would then be compared to determine which antiseptic is relatively more effective.

Results: From this study, MIC values for povidone-iodine and clorhexidine gluconate-cetrimide are relatively harder to determine due to colors and visibility properties of the solutions, while the MIC value of alcohol is 25%. MBC value of povidone-iodine is 1,56% across all time intervals. MBC value of alcohol is 50% for 1 minute, 10 minutes, and 1 hour time intervals, 25% for 18 hours time interval. MBC value of clorhexidine gluconate-cetrimide is 0,39% across all time intervals.

Conclusion: Based on this study, clorhexidine gluconate-cetrimide had the lowest MBC value, thus based on Koburger's method of comparing MIC/MBC values to determine antibacterial efficacy, clorhexidine gluconate-cetrimide is relatively more effective on MRSA colony compared to povidone-iodine and alcohol.

Keywords: **Methicilin-Resistant Staphylococcus Aureus (MRSA) – povidon-iodine – alcohol – clorhexidine – antiseptic – efficacy**