

Abstract:

Blood cultures (BC) are the standard method for diagnosis of bloodstream infections (BSI). However, the average BC contamination rate (CR) in US hospitals is 2.9%, potentially resulting in unnecessary antibiotic use and excessive therapy costs. Several studies have compared various skin antisepsis agents without a clear consensus as to which agent is most effective in reducing contamination. A prospective, randomized crossover study was performed at Robert Wood Johnson University Hospital (RWJUH) directly comparing blood culture contamination rates using chlorhexidine vs. iodine tincture for skin antisepsis. Eight nursing units at RWJUH were provided with blood culture kits containing either chlorhexidine (CH) or iodine tincture (IT) for skin antisepsis prior to every blood culture venipuncture, which were obtained by nurses or clinical care technicians. At quarterly intervals, the antiseptic agent used on each nursing unit was switched. Analyses of positive BCs were performed to distinguish true BSIs from contaminants. Of the 6095 total BC sets obtained on the participating nursing units, 667 (10.94%) were positive, and 238 (3.90%) were judged by the investigators to be contaminated. Of 3130 BCs obtained using IT, 340 (10.86%) were positive and 123 (3.93%) were contaminated. Of 2965 BCs obtained using CH, 327 (11.03%) were positive and 115 (3.88%) were contaminated. Rates of contaminated BCs were not statistically significant between the two antiseptic agents ($P = 1.0$). We conclude that CH and IT are equivalent agents for blood culture skin antisepsis.

Reference:

Story-Roller, E. and Weinstein, M.P. (2016) Chlorhexidine vs. Tincture of Iodine for Reduction of Blood Culture Contamination Rates: A Prospective Randomized Crossover Study. *Journal of Clinical Microbiology*. October 5th. (Epub ahead of print).