

TITLE: "IN VITRO" STUDY ON EFFICACY OF ANTISEPTICS AGAINST HOSPITAL CLONES OF *Acinetobacter baumannii*

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ABSTRACT:

The resistance of hospital isolates of *Acinetobacter baumannii* to antibiotics has been frequently described in literature; however, few studies have investigated the resistance of this microorganism to antiseptics. The aim of this study was to evaluate the efficacy of the main antiseptics used for hand hygiene against multidrug-resistant hospital isolates of *Acinetobacter baumannii*. The possible association between antibiotic and antiseptic resistance was also assessed. The quantitative suspension test performed in the presence of interfering substances as described in the 13727 European Standard method (EN 13727) was used to investigate the bactericidal activity of 2% chlorhexidine, 1% povidone-iodine, 70% w/w ethyl alcohol and 70% v/v ethyl alcohol gel against different multidrug-resistant hospital clones of *Acinetobacter baumannii* (N=33). As a minimum requirement for the bactericidal activity the tested product shall demonstrate at least a 5 log₁₀ reduction (for alcoholic preparations) or at least a 3 log₁₀ reduction (for chlorhexidine and povidone-iodine) in the suspension test. All isolates of *Acinetobacter baumannii* were sensitive to the antiseptics tested under clean conditions (bovine albumin solution 1.5%) or dirty (15% bovine albumin solution plus 15% sheep erythrocytes). The mean±sd of bactericidal action of the tested products, expressed by the logarithmic reduction factor, in the clean and dirty conditions, were, respectively, 7.40±0.20 and 7.36±0.53 (chlorhexidine); 7.36±0.46 and 7.37 ±0.41 (povidone-iodine); 7.46±0.20 and 7.42±0.32 (ethyl alcohol); 7.40±0.32 and 7.48±0.12 (alcohol gel); demonstrating that each product tested fulfilled EN 13727. We conclude that all hospital isolates of *Acinetobacter baumannii* were killed by commonly used antiseptics and hand hygiene should be effective in limiting their spread in hospitals. Association between resistance to antibiotics and a decreased susceptibility to antiseptics was not found.

Keywords: *Acinetobacter baumannii*, antiseptics, EN 13727, suspension test.

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