

TITLE: EFFECTIVENESS EVALUATION OF 1% SOLUTION OF ALKYLDIMETHYLBENZYL AMMONIUM CHLORIDE (CADBA) AND OF POLYHEXAMETHYLENE BIGUANIDE (PHMB) AGAINST MICROORGANISMS ISOLATED IN A HOSPITAL CRITICAL ENVIRONMENT AFTER DISINFECTION PROCESS.

AUTHORS: ABREU, P.O.S¹, MATA, C.P.S.M², GUZMÁN, J.L.D¹, CONCEIÇÃO, A.O.¹ SILVA, A¹, FONTANA, R¹, ANDRIOLI, J.L¹, QUEIROZ, G.R.G.¹, SOUSA, D.F¹, CARVALHO, L.D¹.

INSTITUTION:

1-UNIVERSIDADE ESTADUAL DE SANTA CRUZ, ILHÉUS, BA (CAMPUS SOANE NAZARÉ DE ANDRADE, RODOVIA JORGE AMADO, KM 16, SALOBRINHO , CEP: 45662-900, ILHÉUS – BA, BRAZIL).

2-HOSPITAL RISOLETA TOLENTINO NEVES, BELO HORIZONTE-MG (RUA DAS GABIROBAS, 01 - VILA CLÓRIS, CEP:31.744-012, BELO HORIZONTE/MG - BRAZIL)

ABSTRACT:

The Hygiene and Cleaning Service is important to maintain the environment free of infectious pathogens and to ensure the prevention and spread of infections and conservation of hospital equipment. Although, there is a distance between the practice and the recommendations established. This study aimed to isolate and identify microorganisms as well as their susceptibility profile to disinfectant used in critical environments in a southern Bahia hospital. Samples were obtained from purge water wet scan after the cleaning process established at the standard operating procedure (POP) recommended by the local Hospital Infection Control Committee (HICC) which include a 1% solution containing CADBA and PHMB as disinfectant. Aliquots of 2 ml resulting from purge water contacted sterilized wipes squeezed were collected, coded and processed at the State University of Santa Cruz Microbiology Laboratory. The aliquots were diluted serially (10^{-1} to 10^{-8}) and inoculated in different culture media (mannitol, eosin methylene blue, Sabouraud and chromogenic agar) for selective microorganism isolation. The biochemical identification and antimicrobial susceptibility test were performed by Vitek System (BioMérieux, Brazil). Only *Acinetobacter baumannii* and *Enterobacter cloacae complex* (Spectrum Beta-lactamase Extended ESBL positive) were isolated, respectively, from the refrigerator and from the pantry floor of the Treatment and Intensive Care Center. The isolates susceptibility to 1% mixture of CADBA and PHMB, Chloramphenicol ($50\mu\text{g}\cdot\text{mL}^{-1}$) and sodium hypochlorite at 2% was achieved by microdilution method in Mueller Hinton broth according to CLSI document-M100-S22 (2012) methodology and minimum bactericidal concentration in Mueller Hinton agar. *Escherichia coli ATCC 25922* was used as control. Even though isolates found in this study were high pathogenic to patients, they were susceptible to the disinfectant tested. It is concluded that the agent used as disinfectant is efficacious against bacteria found in the critical environment after disinfection process. Thus the fact the isolates were found is probably due to misapplication of procedures in the environment. In this context, the POP used in this hospital must be reviewed and intervention by continuing education must be considered for improving the health service.

Keywords: IRAS and sanitizer, MIC and sanitizer, microbial resistance and sanitizer

Development Agency: FAPESB, UESC, CAPES.