

Search for microorganisms in antiseptic, disinfectant and detergent dispensers of a Local Health Care Unit from Northeast Portugal

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Introduction: Health care associated infections (HCAI) are among the main causes of mortality worldwide, and of the increase of internment time and related costs. Many HCAI acquired in hospitals result from improper disinfection practices of medical devices and surfaces of the hospital environment, as also insufficient asepsis of health professional's skin [1,2].

Objectives: The main objectives of the present work were to verify the presence of microorganisms in antiseptic, disinfectant and detergent dispensers from different services of Bragança's Local Health Care Unit, and to determine their resistance profiles.

Materials and Methods: 151 Samples were collected from antiseptic (alcoholic solution, povidone-iodine and chlorhexidine), disinfectant (70% alcohol) and detergent (dermatological soap) dispensers, and further plated in Columbia CNA + 5% sheep blood and MacConkey agar. The identification and the bacterial antibiogram were performed using Vitek 2.

Results and Discussion: Among the 151 samples plated, 25 exhibited contamination, corresponding to a contamination percentage of 17%. The most frequently identified and isolated microorganisms were *Staphylococcus hominis*,

Sphingomonas paucimobilis and *Staphylococcus epidermidis* with a percentage of 20%, 20% and 16%, respectively. *Micrococcus luteus/lylae*, *Rhizobium radiobacter*, *Staphylococcus capitis*, *Pseudomonas luteola*, *Staphylococcus warneri*, *Staphylococcus vitulinus*, *Kocuria kristinae* and other gram-positive bacillus were identified with less prevalence. The dermatological soap was the product with the highest contamination percentage and it was in the Medicine services that more contaminated products were found, while Surgery services showed the lowest contamination. Some of the isolated bacteria showed important resistance profiles, such as *Staphylococcus hominis* and *Staphylococcus epidermidis*, namely to beta-lactams (oxacillin and amoxicillin/clavulanic acid) and quinolones (levofloxacin).

Conclusion: Although the main isolated microorganisms belong to a group of commensal bacteria that do not cause problems to a person with a normal immunity system, these are responsible for HCAI. Therefore, it is essential to develop protocols for handling and packaging all the solutions in order to decrease the contamination level and, consequently, the HCAI.

References:

[1] Dereli N., et al. (2013) Three-year evaluation of nosocomial infection rates of the ICU. Brazilian journal of anesthesiology. 63(1):73-8. Consulted in May 8, 2015, in <http://www.ncbi.nlm.nih.gov/pubmed>

[2] Suetens, C., Hopkins, S., et al. (2013) Point prevalence survey of healthcare-associated infections and antimicrobial use in European acute care hospitals 2011-2012. ECDC Surveillance report. doi: 10.2900/86011. Consulted in June 12, 2015, in <http://www.ecdc.europa.eu/>

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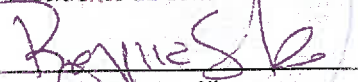
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