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O067: Poorly processed reusable dispensers for surface disinfection tissues are a possible source of infection

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Introduction

Reusable surface disinfectant (SD) tissue dispensers are used in hospitals in many countries because they allow immediate access to soaked tissues for targeted surface decontamination.

Objectives

We determined the frequency of contaminated SD solutions in reusable dispensers and the ability of isolates to multiply in different formulations.

Methods

Dispensers with different SD were randomly collected from healthcare facilities. Solutions were investigated for bacterial contamination using standard microbiological methods. Isolates of the same species were investigated by pulsed-field gel electrophoresis (PFGE) for clonal identity. The efficacy of two SD was determined in suspension tests (EN 13727) under dirty conditions against two isolated species directly from a contaminated solution or after 5 passages without selection pressure in triplicate. Fresh use solutions of four different types of SD were contaminated with a fresh dispenser isolate to determine its survival or multiplication over 28 days.

Results

66 dispensers containing SD solutions with surface-active ingredients were collected from 15 healthcare facilities. 28 dispensers from nine healthcare facilities were contaminated with approximately 10^7 cells per mL of *Achromobacter species 3* (9 hospitals), *Achromobacter xylosoxidans* or *Serratia marcescens* (1 hospital each). Clonal non-identity was shown for 8 of 9 *Achromobacter species 3* isolates. In none of the hospitals dispenser processing was adequately performed. Isolates regained susceptibility to the SD after five passages without selection pressure, for example against *Achromobacter species 3* with a mean $\log_{10}$-reduction of 0.06 initially and 2.37 after 5 passages (Incidin plus 0.5% for 60 min). Adapted and passaged cells were equally able to multiply in different formulations from different manufacturers with surface-active ingredients at room temperature within 7 days to a cell count of 10^7 bacteria per mL, only a formulation with additional aldehyde was able to completely kill the contamination.

Conclusion

Neglecting adequate processing of tissue dispensers has contributed to frequent and heavy contamination of use-solutions of SD based on surface active ingredients.

Disclosure of interest

G. Kampf Employee of Bode Chemie GmbH, Hamburg, Germany, H. von Baum: None declared, C. Ostermeyer Employee of Bode Chemie GmbH, Hamburg, Germany.

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