



Disinfectant wipes are appropriate to control microbial bioburden from surfaces: use of a new ASTM standard test protocol to demonstrate efficacy (Sattar et al. Journal of Hospital Infection. 2015)

Abstract

High-touch environmental surfaces (HTES) are being recognized increasingly for their potential to spread pathogens in healthcare and other settings. Decontamination of HTES is almost always either by a disinfectant spray and wipe procedure or by wiping with a disinfectant pre-soaked wipe (DPW). However, products marketed for this purpose are rarely tested using conditions simulating their field use, and the label claims of environmental surface disinfectants seldom include wiping action. Additionally, during routine wiping, DPW may dislodge localized contamination on HTES and transfer it to neighboring areas being wiped, posing a substantial threat to the spread of pathogenic bacteria. Accelerated Hydrogen Peroxide® (AHP®) has been proven to decontaminate surfaces without transferring acquired contamination to clean surfaces. Unlike most disinfectant technologies, AHP is a very good cleaner, as well as fast acting bactericidal and virucidal agent which simplifies the cleaning protocol for both Environmental Services and Clinical Staff increasing protocol compliance.

Background

The lack of appropriate test protocol for measuring the activity of antimicrobial wipes has been recognized by the Royal College of Nursing, and therefore the three-stage test protocol was redesigned to measure the activity of antimicrobial wipes in combination with the purpose-built Wiperator, recently recognized as an ASTM International Standard, now referred to as E2967-15. The three-stage test has been used to measure the activity of disinfectant, sporicide, and detergent containing wipes.

Study

This study reports on the efficacy of five types of commercially-available DPW, including AHP®, against two types of common vegetative bacterial pathogens (*Staphylococcus aureus* and *Acinetobacter baumannii*) using ASTM Standard E2967-15 in three independent laboratories. Wipes were tested based on their ability to decontaminate a surface with 10 seconds of wiping, without transferring the pathogens to a clean surface.

Results

The results of the study demonstrated that the repeatability and reproducibility limits did not remain constant between the different wipes used. This was to be expected as the wipes tested had different materials and formulations. All of the commercial DPW that were tested achieved a >4log (99.99%) reduction in colony-forming units of *Staphylococcus aureus* and *Acinetobacter baumannii* with 10 seconds

of wiping. AHP® was able to produce at least a 7.0 log reduction (99.99999%) of both test bacteria from the surface following wiping. Additionally, AHP® was the only DPW that was able to prevent the transfer of bacteria to another surface.

Conclusions

Microbial decontamination of environmental surfaces by wiping is subject to many variables, and failure to standardize them properly during testing of wipes may give inconsistent data. This newly introduced standard method represents a significant advance in assessing DPWs for microbial decontamination of HTES and aid in making more relevant and reliable claims on marketed DPWs. Furthermore, as DPWs are increasingly being used in healthcare facilities, the disinfectant's ability to decontaminate a surface effectively without contaminating cleaned surfaces should be considered.

Implications for AHP®

AHP is a proven and effective cleaner as well as a fast acting bactericidal and virucidal agent and disinfects without contaminating already cleaned surfaces.

AHP® Disinfectants are One-Step Disinfectant Cleaners

- AHP® has proven cleaning efficiency resulting in lower costs and faster results as well as added confidence that disinfection can occur
- AHP® is proven to reduce HAIs by 20%¹

AHP® Disinfectants have realistic contact times

- Short contact times ensure surfaces remain wet for the required contact time, providing comfort and confidence that disinfection has occurred

AHP® Disinfectants provide the perfect balance between safety and efficacy

- AHP® is designed to be easier on employees and occupants resulting in protocol compliance
- The ingredients found in AHP® are all listed on the EPA and Health Canada Inerts lists and the FDA Generally Regarded as Safe List

AHP® Disinfectants are environmentally sustainable

- AHP's® active ingredient, hydrogen peroxide, breaks down into water and oxygen leaving no active residues
- AHP® does not contain Volatile Organic Compounds (VOCs) or other chemicals that will negatively impact indoor air quality

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DISINFECTION DIGEST

...FOCUSED ON SCIENCE



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AHP® Disinfectants are compatible

•AHP® formulations are tested to ensure compatibility that preserves your investments in equipment, furniture, and building surfaces

ⁱ Use of a daily disinfectant cleaner instead of a daily cleaner reduced hospital-acquired infection rate. AJIC 43 (2015) 141-6

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