Environmental Surface Wetness Test: Comparison of Disinfectant Wipes

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ABSTRACT

An important factor to consider concerning environmental surface disinfection is the length of time surfaces remain wet after application of a disinfectant. In order for a disinfectant to achieve germicidal efficacy, the product must remain wet for its entire contact time. Failing to do so may result in pathogen transmission which can cause harm to both patients and staff. Accelerated Hydrogen Peroxide® (AHP®) is a leading disinfectant technology with the proven ability to remain wet on surfaces long enough to exceed the products contact time.

STUDY

The purpose of this study was to determine the extent of surface wetness for Accelerated Hydrogen Peroxide® disinfectant wipes compared to competitor environmental surface disinfectants. Newly cleaned laboratory tables were sectioned off into equal quadrants and then wipes with a single disinfectant wipe. A bactericidal/virucidal contact time was used for each disinfectant that represented the biocidal range for the majority of microorganisms commonly found in a dental facility. Once the contact time was reached, cigarette paper was passed across the table's surface to detect the presence of liquid If the surface remained wet for the entire length of the contact time, the table was re-cleaned with soap and water, then the test was repeated using a new single wipe but with an additional quadrant to cover. For every positive result the test was repeated with the addition of another surface quadrant. Testing concluded once a disinfectant solution failed to remain wet for the instructed contact time.

Table 1: Total exposure time and active ingredients of test disinfectants

Surface Disinfectants Tested	Contact Time (minutes)	Active Ingredient
Optim 33TB	1	AHP®
Caviwipes	3	Quat and Alcohol
Super SaniCloth	2	Quat and IPA
Birex	10	Phenol
FD 350	5	Alcohol
Mikrozid	5	Alcohol
Omniwipes	1	Quat and Alcohol

RESULTS

Of the surface disinfectants tested, Accelerated Hydrogen Peroxide® was the only product that was able to remain wet for the duration of the contact time on all 4 quadrants.

Table 2: Number of quadrants successfully wiped

Disinfectant Solution	Test 1	Test 2	Test 3	Test 4
Optim 33TB	4	4	4	4
Caviwipes	2	2	2	2
Super SaniCloth	1	1	1	1
Birex	0	0	0	0
FD 350	0	0	0	0
Mikrozid	0	0	0	0
Omniwipes	0	1	1	1

CONCLUSION

The use of disinfectants remains the backbone for environmental decontamination and infection control in Dental settings. Diligent contact time compliance of a disinfectant product is necessary for proper and complete disinfection. In this study, AHP® was recognized for its ability to remain wet for the entire contact time with only 1 application.