FROM: Weber DJ, Rutala WA. Risks and prevention of nosocomial transmission of rare zoonotic diseases. *Clin Infect Dis* 2001;32:446-456.

Efficacy of Antiseptics Tested on Skin

Messager and colleagues from the Welsh School of Pharmacy, Cardiff University, United Kingdom, reported on an ex vivo test used to determine efficacy of germicides used on skin. While there are many skin antiseptics commercially available and their antibacterial activity has often been well studied, their potential effectiveness on skin remains poorly documented. To date, in vivo protocols designed for the testing of the antimicrobial efficacy of antiseptics cannot use, for ethical reasons, pathogenic bacteria or new formulations whose toxicity in human subjects is unknown. An ex vivo test recently was developed to overcome these problems. Freshly excised human skin from abdominal or breast reduction was placed in a diffusion cell containing a maintenance medium in the recipient compartment. A bacterial inoculum was then applied to the stratum corneum and, after a drying step, antiseptic formulations were evaluated for their antimicrobial activity.

Several microorganisms were investigated (*Staphylococcus aureus,* methicillin-resistant *S aureus* (MRSA), *Enterococcus faecalis,* vancomycin-resistant *Enterococcus faecium* (VRE), *Staphylococcus epidermidis, Pseudomonas aeruginosa,* and *Escherichia coli),* along with several biocides (para-chloro-meta-xylenol [PCMX], active compound of Dettol; povidone iodine; triclosan (in isopropanol); and chlorhexidine. Results from the ex vivo test were compared with results obtained in suspension and glass-carrier tests. The bactericidal activity of the biocides depended upon the test performed, and results generally were significantly different from one method to the other. All biocides tested in the suspension test achieved >4-$\log_{10}$ reduction in viable bacterial concentrations, apart from povidone iodine tested against *E faecalis* and VRE. The antibacterial activity of biocides tested in the glass-carrier test was significantly lower than in the suspension test, with the exception of triclosan in isopropanol, which was as effective in both suspension and glass-carrier test. In the ex vivo test, triclosan in isopropanol achieved a $\log_{10}$ reduction in viable bacterial concentration of 1.105 to 1.771 (with the exception of *P aeruginosa,* with 0.758-$\log_{10}$ reduction). PCMX, povidone iodine, and chlorhexidine achieved $\log_{10}$ reductions in viable bacterial concentration of 0.303 to 0.901. Chlorhexidine tested against *P aeruginosa* produced a 1.94-$\log_{10}$ reduction in concentration.

These results confirm previous observations about the need for testing the antimicrobial activity of antiseptics on skin surface to determine their in situ efficacy and encourage further the use of the ex vivo protocol.

FROM: Messager S, Goddard PA, Dettmar PW, Maillard JY. Determination of the antibacterial efficacy of several antiseptics tested on skin by an 'ex vivo' test. *J Med Microbiol* 2001;50:284-292.

VRE in Stools Submitted for *C difficile* Testing

Hacek and coinvestigators from Northwestern University Medical Center, Chicago, investigated a method for screening vancomycin-resistant enterococci (VRE) that used specimens submitted for *Clostridium difficile* testing. They compared this approach to the focused surveillance program of high-risk units during October 1997 to compare the yield of VRE and multidrug-resistant *Enterobacteriaceae* (MDRE) with both methods. Of the stools submitted for *C difficile* testing, 14% were positive for VRE or MDRE, whereas rectal swabs from routine surveillance yielded 11% VRE- or MDRE-positive results. Although stools submitted for *C difficile* testing resulted in a higher percentage of positive cultures, 14 VRE- and 2 MDRE-positive patients from their high-risk population were missed because many patients had no stool submitted for *C difficile* testing.

The authors concluded that, while screening stools submitted for *C difficile* testing cannot replace their focused surveillance program, it appears advantageous to assess these stools at various intervals to detect new patient reservoirs of drug-resistant organisms that may benefit from routine surveillance cultures.

FROM: Hacek DM, Bednarz P, Noskin GA, Zembower T, Peterson LR. Yield of vancomycin-resistant enterococci and multidrug-resistant *Enterobacteriaceae* from stools submitted for *Clostridium difficile* resting compared to results from a focused surveillance program. *J Clin Microbiol* 2001;39:1152-1154.

Risk of Infection From Reused Virus-Contaminated Catheters

Luijt and colleagues from the Regional Public Health Laboratory, Groningen, The Netherlands, conducted a study to determine the theoretical risk of virus transmission during reuse of catheters. An in vitro study was performed using an RNA virus (echovirus-11) and a DNA virus (adenovirus-2). After deliberate contamination of the catheters, reprocessing and reuse of the cleaned and glutaraldehyde-disinfected catheters was simulated. The presence of residual virus was determined by cell culture and by PCR. After the disinfection step, infectious enterovirus was detectable in one (10%) of the samples, whereas two (20%) contained detectable enterovirus RNA. After simulated reuse, a culture of enterovirus was obtained from one (10%) of the catheters, but no less than six (60%) of the samples were enterovirus PCR-positive, and one (10%) contained detectable adenovirus DNA. After sonification of the catheter tips, no infectious virus could be detected, but enterovirus RNA was detected in two (20%) and adenovirus DNA in three (30%) of the samples.

The authors concluded that, even after rigorous cleaning and disinfection, virus was still present in the catheter. Reuse of catheters labeled for single-use only is dangerous and should be prevented.