

FDA Panel: No Benefit in Consumer Antibacterials

BY MARK S. LESNEY
Senior Editor

SILVER SPRING, MD. — Several decades' worth of clinical data on antibacterial additives in home-use soaps and detergents has shown no benefit over plain soap and water in reducing infection, the Food and Drug Administration's advisory panel on nonprescription drugs found at its recent meeting.

Lacking such clear benefits, compounds such as triclosan and triclocarban pose unacceptable risks of environmental contamination and contribution to the evolution of antibiotic resistance, the panel unanimously concluded.

Evidence on the efficacy of alcohol-based gels and wipes was found to be similar (no more effective in reducing infection than soap and water). However, their utility in situations where water was not available, safe, or convenient—combined with their low risk of contributing to the development of resistant bacteria—was recognized by the panel, which recommended the products' continued use in defined circumstances.

A 1994 FDA decision said that antibacterial consumer products were deemed effective if they could meet the surrogate end point of decreasing bacterial load on the skin. Such a decrease was assumed to be clinically significant, according to the 1994 monograph.

However, subsequent, real-world clinical trials, though imperfect in design, have been unable to demonstrate a corresponding decrease in disease incidence or severity, compared with soap and water, for either respiratory or GI infections.

It was this question of efficacy of consumer antiseptic products that the FDA asked its advisory panel to address.

The panel heard presentations of clinical evidence regarding the benefits of consumer antiseptics from Steven Osborne, M.D., medical officer at FDA's Office of Nonprescription Products, and Allison E. Aiello, Ph.D., of the University of Michigan School of Public Health, Ann Arbor.

In eight studies from the literature, use of plain or unidentified soap and water reduced cases of diarrhea from 30% to 89% (median reduction 53%). In three studies comparing antiseptic soap with no soap in control groups, reductions in diarrhea with antiseptic soap ranged from 29% to 50%.

Furthermore, in five studies comparing antiseptic soaps with plain soap, there was no statistically significant difference shown for all infectious symptoms, the presenters said.

Stuart B. Levy, M.D., a professor at Tufts University, Boston, spoke on the products' contribution to bacterial resistance.

"What are we worried about?" he asked, "We are worried that an antibiotic can select this kind of mutant and make it resistant to biocides. ... Or we could be using the biocides and select a mutant which now is resistant to antibiotics. We're not talking about just one [antibiotic]. We're talking about tetracycline, penicillin, fluoroquinolone, chloramphenicol."

Such resistance can also develop to the biocides themselves, he added. "I'm not saying I don't see the need for biocides—

I don't see that they are needed in consumer products."

The impact of triclosan and triclocarban accumulation in the environment was discussed by Rolf U. Halden, Ph.D., of Johns Hopkins University, Baltimore.

In Baltimore area surface water samples, Dr. Halden and colleagues found triclocarban concentrations of 6,750 ng/L (En-



When antibacterial soap is compared with soap and water, no decrease in disease incidence or severity has been found.

viron. Sci. Technol. 2005;39:1420-6).

According to Dr. Halden, his results suggest triclocarban is a previously unrecognized contaminant of U.S. water resources nationwide, probably in the top 10 in occurrence rates and in the top 20 in maximum concentration.

The amount of triclocarban contamination was markedly higher than the non-peer-reviewed numbers (240 ng/L) used by the Environmental Protection Agency to evaluate ecological and human health risks, he said. The predicted half-life of triclocarban ranged from less than a day in air to 540 days in sediment. Cooccurrence of triclosan was observed at all sites.

Dr. Halden questioned why manufacturers were still using vast quantities of chlorinated compounds that could migrate into the environment, given the dubious nature of chlorine chemistry in the previous history of pollutants.

Several presenters highlighted the importance of hand hygiene in preventing the transmission of infectious diseases and the effectiveness of antibacterial products in reducing or eliminating bacteria.

"Every 3 minutes, a child brings his/her hand to nose or mouth; every 60 seconds, a working adult touches as many as 30 objects. ... Washing fomites with soap and water is not enough to prevent the spread of pathogens," said Charles P. Gerba, Ph.D., of the University of Arizona, Tucson.

Handwashing after risk exposure is needed for home infection control, he said, adding that the data show that antiseptic products "decrease bacteria on the skin."

The utility of antibacterial consumer products was stressed by the Cosmetic, Toiletry, and Fragrance Association (CTFA), which said "the benefits of topical OTC antimicrobial drug products clearly support the current proposed labeling indication (i.e., 'to decrease bacteria on skin') and provide consumers an effective means of controlling the risks of infection."

CTFA had previously asked the FDA to lower the threshold for approval of consumer antibacterial products. That request was not recommended by the panel at a meeting in March 2005. At that meeting, the panel voted unanimously to recommend retention of the standards for bacteria reduction in antibacterial and antiseptic products for nonconsumer products.

The FDA usually follows the recommendations of its advisory panels but is not obligated to do so. Final review of these products is to be concluded by 2007. ■

Preschool Children First to Get Sick During Influenza Season

BY MIRIAM E. TUCKER
Senior Writer

Emergency department data demonstrate that preschool children are the first to come down with influenza each year and could play an important role in the infection's spread, according to John S. Brownstein, Ph.D., of Children's Hospital Boston, and his associates.

Data collected from four emergency departments and one ambulatory care setting in Massachusetts during 2000-2004 suggest that children aged 3-4 years are consistently the first to seek care for respiratory illness during each influenza season, and that the temporal pattern of illness in that group strongly predicts mortality due to influenza and pneumonia among people of all ages.

The results bolster arguments in favor of universal vaccination of all preschool-aged children in addition to the 6- to 23-month-olds for whom the vaccine is currently recommended, the investigators said (*Am. J. Epidemiol.* 2005;162:686-93).

Among patients presenting to the different health care settings—including one

pediatric emergency department, one adult emergency department, and two that treat both adults and children—children aged 3-4 years presented earliest in the influenza season, with a mean lead time of 34 days prior to the peak in overall mortality.

Children of that age group presenting to pediatric emergency departments had the longest lead time of all, with a mean of 50 days. In contrast, adults aged 18 years and older in the ambulatory care and emergency department settings had a mean lead time of just 12 days.

Prediction of influenza and pneumonia mortality varied by age. Children younger than 3 years were the best predictors, explaining 41% of the deviance, while those aged 3-4 years explained 37%, Dr. Brownstein and his associates reported.

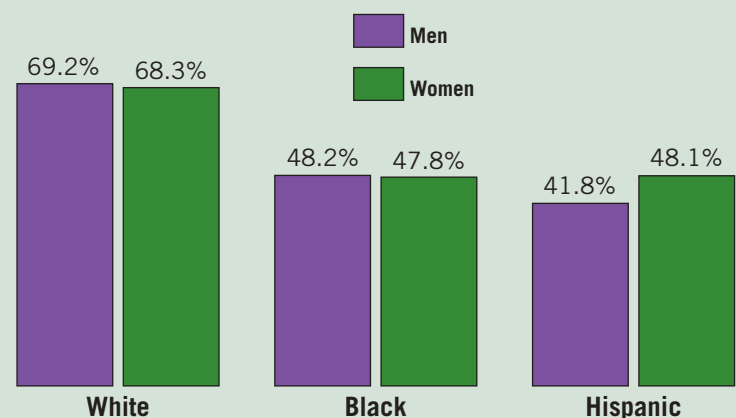
"Although this finding does not necessarily prove that preschool-aged children are driving the yearly influenza epidemics, they intriguingly suggest that preschool-aged children are the initial group infected and may be important in the subsequent spread," Dr. Brownstein and his associates wrote.

These and other data point to the idea that targeting yearly influenza vaccination to younger children may benefit the entire community.

The idea is currently under consideration by the Centers for Disease Control and Prevention's Advisory Committee on Immunization Practices. ■

DATA WATCH

Percentage of People Aged 65 Years and Older Who Had Received a Flu Vaccine in the Preceding Year



Note: Based on a 2003 national study of 5,538 adults.
Source: Centers for Disease Control and Prevention