Azithromycin for Shigellosis: An Opaque Future

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Azithromycin may be an adequate agent for treating drug-resistant shigellosis, but physicians need to be aware that interpreting susceptibility of *Shigella sonnei* to it using standard in vitro susceptibility testing is difficult, investigators at Johns Hopkins University have reported.

Antimicrobial-resistant *S. sonnei*—the most common serogroup in the United States—is a growing problem in the United States, and azithromycin is recommended by the American Academy of Pediatrics and the Infectious Diseases Society of America as an oral agent for the treatment of shigellosis that can be used as an alternative to ampicillin or trimethoprim/sulfamethoxazole (TS).

There are no guidelines for in vitro azithromycin susceptibility testing for *Shigella,* however, and there is a lack of adequate data correlating the drug's minimal inhibitory concentration—a key component of what's measured during susceptibility testing—with clinical efficacy for the treatment of shigellosis.

In their own testing of azithromycin susceptibility, the investigators found that there were two zones of inhibition of growth for *S. sonnei* isolates, and that interpretations of susceptibility for a particular isolate can vary by which zone is used.

"Because azithromycin … is being increasingly used in the United States, there is an urgent need for development of validated in vitro antimicrobial breakpoints," reported Sanjay K. Jain, M.D., and colleagues at Johns Hopkins (Pediatr. Infect. Dis. J. 2005;24:494-7).

Many pediatricians prescribe antimicrobials for children with shigellosis because they shorten the duration of illness and hasten bacteriologic cure, they said.

The investigators reviewed all *Shigella* isolates submitted to the Johns Hopkins microbiology laboratory during 1996-2000 and 2002—the year in which an outbreak of *Shigella* was observed at Johns Hopkins and nationally.

Of the 111 isolates submitted during the 1996-2000 period, 63% were resistant to ampicillin, 12% were resistant to TS, and 7% were multiresistant (resistant to both drugs).

In 2002, among 205 isolates submitted, 91% were resistant to ampicillin, 67% were resistant to TS, and 65% were multiresistant, the investigators reported. ■

Model Helps Reduce Chest X-Ray Usage

A predictive model can be used to identify children who need a chest x-ray during a work-up for lower respiratory infection, E. Melinda Mahabee-Gittens, M.D., and her colleagues reported.

The variables include age, respirations, oxygen saturation, and, for younger children, nasal flaring. "The model that we derived is not intended to replace the judgment of a skilled clinician," said Dr. Mahabee-Gittens of the University of Cincinnati. "Rather, it may help to inform clinical decision making such that children with pneumonia are evaluated promptly and children without pneumonia are spared unnecessary chest radiography."

They evaluated 510 children aged 2-59 months who presented at an emergency department with symptoms of lower respiratory tract infection. All of the patients had cough; 72% had fever; 45% had rapid or labored breathing; 20% had wheezing; and 18% had noisy breathing. All of the children received a chest x-ray; only 44 (8.6%) had radiographic evidence of pneumonia (Clin. Pediatr. 2005;44:427-35).

Patients with and without pneumonia differed significantly in four respects: age (21 months vs. 15 months); respiratory rate (50 breaths/min vs. 43 breaths/min); oxygen saturation (95% vs. 98%); and, for children that were younger than 12 months, nasal flaring (23% vs. 8%).

When the variables included age older than 12 months, respirations more than 50 breaths/min, and oxygen saturation 96% or less, the predictive model had a 97% specificity and a likelihood ratio of 6.1. The model also was highly specific for children younger than 12 months with the addition of nasal flaring.

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