Tips to Avoid Inducing Resistance in CA-MRSA

BY DOUG BRUNK

SAN DIEGO — Clindamycin and trimethoprim-sulfamethoxazole are the most commonly used agents to treat community-acquired methicillin-resistant *Staphylococcus aureus* on an outpatient basis, but neither is perfect, according to one expert.

"The issue with clindamycin is that if you have big loads of bacteria, inducible resistance can develop," Dr. Alice L. Pong said at a meeting sponsored by Rady Children's Hospital and the American Academy of Pediatrics. "So even though the bug might be susceptible on paper, over time it might develop resistance."

Other strikes against clindamycin include its poor palatability—"most kids will throw it up," she said—and the potential for gastrointestinal side effects, especially vomiting and diarrhea.

The recommended dosage is 20-40 mg/kg per day IV divided every 6-8 hours, and 10-30 mg/kg per day orally divided every 6-8 hours.

Trimethoprim-sulfamethoxazole is more convenient than clindamycin because it requires twice-a-day administration, and "it doesn't taste too bad," said Dr. Pong of the division of infectious diseases at Rady Children's Hospital, San Diego. However, it's not effective for group A streptococci, "so if you don't have a culture and you don't know whether it's group A streptococci or *S. aureus*, you might run into trouble."

There are limited data regarding trimethoprim-sulfamethoxazole's efficacy in treating MRSA, but "in many cases it probably works as well as anything else," Dr. Pong said.

The recommended dosage is 8-12 mg/kg per day trimethoprim/40-60 mg/kg per day sulfamethoxazole given every 12 hours.

Doxycycline is another outpatient option for treating MRSA, "and it works well for acne, too," she said. Approved for use in children aged 8 years and older, it has limited efficacy against group A streptococci.

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The recommended dosage is 2-4 mg/kg per day given every 12 hours.

Rifampin is yet another treatment option, but it cannot be used alone as rapid resistance will ensue. The recommended dosage is 10-20 mg/kg per day IV or orally every 12-24 hours.

Quinolones such as levofloxacin are widely used for the treatment of MRSA in adults but are not approved for use in children in this situation.

Dr. Pong said that she and her colleagues have used quinolones for treating MRSA in children "only in situations where there is no other antibiotic available."

Linezolid, a member of the new oxazolidinone class of drugs, is an expensive treatment option that is active at the ribosomal binding site of the bacterial cell.

"If you're going to give it for a prolonged period of time, you need to watch the complete blood count because linezolid can cause bone marrow suppression," Dr. Pong warned. "But it works pretty well.

We occasionally put kids on this as a drug when they are discharged home from the hospital and they've improved on vancomycin or when their organism comes back as resistant to clindamycin and trimethoprim-sulfamethoxazole," Dr. Pong continued.

Practical ways to decrease antibiotic resistance, she said, include avoiding unnecessary use of antibiotics, removing foreign devices as soon as possible, preventing transmission of resistant organisms, and practicing good infection control, especially hand washing.

Dr. Pong reported that she had no financial conflicts to disclose. ■