Community-Acquired MRSA Skin Infections Rising

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SAN FRANCISCO — While almost unheard of 10 years ago, community–associated methicillin-resistant *Staphylococcus aureus* has now become the single biggest cause of skin infections in the United States, Dr. Greg Moran said at the 12th International Conference on Emergency Medicine.

"We really don't know what's begun this sudden explosion of resistant staph in the community all over the United States, as well as in Canada and Europe," said Dr. Moran, an emergency physician at the Olive View–UCLA Medical Center, Sylmar, Calif. "One thing we do know is that this is not a phenomenon of the hospital strains moving into the community. These are genetically distinct strains."

The hospital strains are usually USA100 and 200, while the overwhelming majority of the community strains are USA300, he added.

In his 2006 study, virtually all the skin infections cultured from hospitals in 11 cities across the country were caused by community-associated strains; 78% of those were a single clone of USA300. "Almost all of [the skin infections] (98%) carried the Panton-Valentine leukocidin toxin gene and the SCCmec type IV gene," he said.

The SCCmec gene confers methicillin resistance, while the Panton-Valentine leukocidin toxin gene is associated with spontaneous skin and soft-tissue infections, as well as necrotizing pneumonia.

In addition to authoring a seminal paper on the topic (N. Engl. J. Med. 2006;355:666-74), Dr. Moran has kept track of the MRSA skin infections occurring in his own hospital since 1997. There were 25 cases documented that year. "That number rose to almost 450 per year in 2006 and 2007," he said. "In 2001, 29% of our skin infections were MRSA. That more than doubled by 2003-2004, to 64%."

There are a few clinical features associ-

ated with an increased risk of the community-associated MRSA infections, Dr. Moran said, including recent antibiotic use, abscess, a history of "spider bite" (insect bite of unknown origin), prior MRSA infection, and close contact with a MRSA-infected individual.

However, none of those was a strong predictor. "The reality is you can't use any of these risk factors to decide who you're going to treat for MRSA," he said. Despite their prevalence, most of these infections are not serious and don't grow the "killer flesh-eating super bugs" touted in grocery store tabloids, Dr. Moran said. "We still have a number of antibiotic options. More than 90% of the isolates in our study were susceptible to at least one agent."

Dr. Moran had the following comments about the available antibiotic choices:

► **Vancomycin.** "Even though this is the gold standard, we are now recognizing its limitations. We are seeing more resistance to this that we used to."

► **Clindamycin.** "Ninety-five percent of the isolates were susceptible to this in our study, although that appears to be decreasing. In our hospital, susceptibility is now down to about 85%."

► **Linezolid.** "It's very effective, but also very, very expensive. Post hoc data suggest that it may be clinically superior for hospital-acquired MRSA pneumonia, but there are no prospective data on this."

► **Daptomycin.** "Very good for skin infections, but we don't use it for MRSA pneumonia—it binds to the pulmonary surfactant and is inactivated."

► **Tigecycline.** "This is a good choice when you want to both gram-negative and gram-positive activity."

► **Trimethoprim sulfa.** "This is close to 100% effective in vitro, but there isn't much clinical data for its use in skin infections."

► **Tetracycline.** "It's a cheap generic with reasonable effectiveness."

Current studies conclude there's no real benefit to adding antibiotics to the treatment regimen, he said. However, there are quite a few limitations to those studies: Many had small treatment numbers and were done before the MRSA phenomenon, Dr. Moran added. Therefore, more aggressive treatment may be warranted now.

For most uncomplicated skin infections, he performs an incision and drainage, and doesn't give antibiotics. However, "I do give antibiotics if there is a fever, significant associated cellulitis, immune or vascular compromise, if the lesion is in a high-risk area like the hands or face, or if the patient has already failed an incision and drainage," Dr. Moran explained. ■