

## Community-Acquired MRSA Skin/Soft Tissue Infection Rates Increasing

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March 27, 2006 — The prevalence of community-acquired methicillin-resistant *Staphylococcus aureus* (CA-MRSA) is rapidly increasing and should be considered in the differential diagnosis of patients presenting with skin and soft tissue infections (SSTI) or insect bites, according to findings from a retrospective study conducted at an urban hospital emergency department (ED).

The study was presented last week at the 16th annual meeting of the Society of Healthcare Epidemiology of America in Chicago, Illinois.

In certain patients, an analysis of data showed that the annual incidence of CA-MRSA increased by 250% in 2004 and 500% in 2005 compared with the 2003 rate.

Study investigators reviewed the records of 224 patients with culture-proven clindamycin-sensitive MRSA-associated SSTIs presenting to the ED from January 2004 to November 2005.

"We screened patients presenting to the ED with either the ICD9 code or any clinical descriptors that might suggest SSTI, then cross-matched those patients with microbiology data and selected MRSA-positive cultures with an antibiogram that was consistent with CA-MRSA (resistance to beta-lactams and azithromycin, and sensitivity to clindamycin)," lead investigator Seemi Andrabi, MD, infectious disease fellow at the Washington Hospital Center in Washington, DC, told Medscape.

Patients who had been hospitalized during the past year, intravenous drug abusers, and transfer patients were excluded from the analysis, as were those with indwelling catheters, diabetic foot ulcers, chronic stasis ulcers, or prior history of MRSA infection/colonization.

"This is a new and different strain of *S aureus* and it's important because of its magnitude — we have a high and increasing number of cases — and its virulence," said Nancy Donegan, MPH, coinvestigator and director of infection control at the Washington Hospital Center, adding that the strain is so virulent in healthy people that there is significant concern over what it will do to hospitalized patients.

Incision and drainage (I&D), the mainstay of treatment for CA-SSTI with or without adjunctive use of oral cephalosporins and/or antistaphylococcal penicillin, was performed in the majority (83%) of patients with CA-MRSA infections.

Approximately one third (34%) of patients needed up to 2 ED visits; 17% required more than 2 ED or outpatient (OP) visits; 29.5% were hospitalized once; 17% were hospitalized once with more than 2 ED/OP visits; and 2.3% of patients required hospitalization more than once.

"In our study, I&D and standard antimicrobial therapy were not adequate for two thirds of patients with CA-MRSA SSTIs, and about half of those presenting to the ED required hospitalization — some of them more than once," noted Dr. Andrabi. "That's a little more than I would expect for an SSTI that isn't very serious."

Study limitations include the possibility that some patients may have received follow-up care at other hospital facilities, and that other cases of CA-MRSA were not identified due to lack of culture data.

"Cultures were only taken about 60% of the time, even when patients had I&D on prior visits. Some were only cultured when patients returned on the second or third visit or more for the same problem," Dr. Andrabi said. "So there's no way of telling how many of the...patients presenting to the ED for SSTIs actually had CA-MRSA — the numbers could be even higher."

"The message is dramatic but relatively simple," Ms. Donegan said. "There's been a significant increase in CA-MRSA prevalence, and typical algorithms for patient care from even a year ago are not suitable and often result in the patient suffering with worse outcome."

"Now if a young, healthy, middle-aged patient comes in with a skin and soft tissue infection that forms an abscess, you need to have CA-MRSA as part of your differential when you're thinking about the etiological causes of that infection," Dr. Andrabi concurred, emphasizing that physicians should have a low threshold for suspecting CA-SSTI, especially from those initially resembling insect or spider bites.

In areas of high CA-MRSA prevalence, patients with serious infections requiring operating-room I&D may be treated empirically with vancomycin, pending tailoring of the antibiotic regimen based on culture findings.

"We really need more studies to determine the efficacy of I&D plus/minus appropriate antibiotics, and head-to-head trials to see which antibiotics are most effective against this organism," Dr. Andrabi concluded, adding that recurrence also needs to be defined as a function of organism burden to evaluate whether poor outcomes reflect recurrence or relapse of infection."

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