



Community Acquired MRSA

Information for Health Care Providers

Health Advisory

6/7/05

This MRSA health advisory is being sent to you in response to inquiries from primary care providers expressing a concern over the number of MRSA cases that they are seeing in their practices.

What is MRSA/CA-MRSA/HA-MRSA?

Some *Staphylococcus aureus* (*S. aureus*) bacteria are resistant to antibiotics. MRSA is a type of *S. aureus* that is resistant to antibiotics called beta-lactams. Beta-lactam antibiotics include methicillin and other more common antibiotics such as oxacillin, penicillin and amoxicillin. Most healthcare-associated MRSA (HA-MRSA) are also resistant to macrolides, fluoroquinolones, clindamycin, and trimethoprim/sulfamethoxazole. While 25% to 30% of the population is colonized with *S. aureus* overall, only 1% are colonized with MRSA. In the US, HA-MRSA has been a long-standing problem. HA-MRSA is also commonly seen in hospitals and in long-term care facilities and in US hospitals, 52% of *S. aureus* isolates recovered from patients in ICUs and 42% of *S. aureus* recovered from non-ICU patients are MRSA.

Community-Acquired MRSA (CA-MRSA) is a rapidly emerging public health problem. CA-MRSA strains are generally susceptible to a wider range of antibiotics (e.g., usually susceptible to fluoroquinolones and trimethoprim/sulfamethoxazole [TMP/SMX]) and some CA-MRSA carry genes encoding toxins and virulence factors (e.g. Pantone-Valentine leukocidin) which predispose to severe skin and soft-tissue infections and necrotizing pneumonia. Unlike HA-MRSA, CA-MRSA often arises in children and adults without any obvious risk factors.

Are certain people at increased risk for CA-MRSA infections?

Clusters of CA-MRSA skin infections have been documented among athletes participating in contact sports, military recruits, Pacific Islanders, Alaskan Natives, Native Americans, men who have sex with men, IV drug users, and prisoners. Correctional inmates with HIV

infections are twice as likely to develop MRSA infections compared with HIV-negative inmates. Factors that have been associated with the spread of CA-MRSA skin infections in otherwise healthy people include close skin-to-skin contact, openings in the skin such as cuts or abrasions, contaminated items and surfaces, crowded living conditions, and poor hygiene. However, as noted above, children and adults have developed CA-MRSA infections without any known risk factors.

What are the clinical features of CA-MRSA?

CA-MRSA most often presents as furuncles, deep-seated folliculitis, impetigo, abscesses, or ecthyma. Patients and their physicians may assume that the lesion is a spider or bug bite. The involved site is red, swollen, painful and may be draining. *S. aureus* infections also can cause more serious infections, such as bloodstream infections, osteomyelitis, septic arthritis or endocarditis. CA-MRSA can be differentiated from HA-MRSA if the person meets all of the following criteria: diagnosis of MRSA was made in the outpatient setting or by a culture positive for MRSA within 48 hours after hospital admission; no past medical history of MRSA infection or colonization; no hospitalizations, admission to a nursing home, skilled nursing facility, or hospice, dialysis, or history of surgery in the past year; and no permanent indwelling catheters or medical devices that pass through the skin into the body.

How does one manage CA-MRSA?

Assess risk factors for CA-MRSA infection as noted above, including contact with other known or suspected cases, and presentation with a the above-noted skin infection or pneumonia. Evaluate skin lesion for underlying abscess formation, crepitus, fluctuance and sinus drainage. Drain/aspirate an infected skin site when possible and obtain cultures from aspirated fluid or wound drainage cleaning the surrounding tissue. Minor infections may resolve with I&D alone.

After obtaining appropriate cultures, treat with empiric oral antibiotics for infections such as large or multiple furuncles, soft-tissue abscesses, cellulitis, deep-seated folliculitis, impetigo, ecthyma. If no MRSA risk factors: consider such antibiotics as dicloxacillin, cephalexin or amoxicillin/clavulanate. In context of an MRSA outbreak or presence of MRSA risk factors, treat with: TMP/SMX + rifampin. Treat with clindamycin rather than TMP/SMX if streptococcal infection is in the differential diagnosis. However, some MRSA isolates can become resistant to clindamycin while on therapy (i.e., inducible clindamycin

resistance) and this should be suspected if a CA-MRSA isolate is erythromycin-resistant. Thus, an alternative to clindamycin (e.g. high-dose levofloxacin) should be considered for erythromycin-resistant isolates. Treat with IV vancomycin (or linezolid) for severe skin infection caused by CA-MRSA, or any evidence of invasive disease, or patients who are otherwise at risk for serious complications, such as those with prosthetic valves or prior endocarditis.

Adjust treatment based on culture and susceptibility data. Re-evaluate throughout course of treatment; examine for recurrent lesions during follow-up visits. Persistent/recurrent disease may indicate non-adherence, new infection, or resistance.

Provide the patient with information and education on prevention. Treatment duration will depend on severity of illness and clinical response. Adequately drained, uncomplicated skin and soft tissue CA-MRSA infections usually resolve with 10-14 days of antibiotics. Systemic infections, including sepsis and osteomyelitis require intravenous antibiotics (or oral linezolid) for a more prolonged course.

Prevention Strategies : clean any fresh wounds (e.g. lacerations and abrasions) thoroughly; document and treat nasal MRSA colonization with Mupirocin (bactroban) nasal ointment to both nares BID x 5 days. This can be done with or without showering with Hibiclens from neck down daily x 3-5 days. To reduce person-to-person spread, educate MRSA-infected or colonized patients regarding good hand hygiene; reduce as much as possible use of shared objects, such as athletic equipment, towels, and personal items such as razors; and wash towels and sheets frequently in hot water.

Is MRSA reportable in RI?

Because of the high volume of cases, *S. aureus* infections and MRSA are not reportable events, but it is recommended that clusters and outbreaks noted by clinicians be called in to the Department of Health (Office of Communicable Diseases at 222-2577) to assist in managing public risk communications and to recommend and enforce institutional control measures.