

CLINICAL INQUIRIES

Evidence Based Answers
from the Family Physicians
Inquiries Network

Todd J. May, DO
University of Washington,
Bremerton

Sarah Safranek, MLIS
University of Washington
Seattle

When should you suspect community-acquired MRSA? How should you treat it?

Evidence-based answer

There are no clinical or epidemiologic features that will help you to clearly distinguish community-acquired methicillin-resistant *Staphylococcus aureus* infections (CA-MRSA) from methicillin-sensitive (CA-MSSA) infections (strength of recommendation [SOR]: **B**,

prospective cohort studies).

Incision and drainage is the primary therapy for purulent skin and soft tissue infections (SOR: **B**, randomized, controlled clinical trials [RCTs]). There are inadequate data evaluating the role of oral antibiotics for MRSA (SOR: **B**, single RCT).

Evidence summary

Two prospective cohort studies have looked at the usefulness of clinical characteristics to help differentiate MRSA from MSSA infections. The studies—a 2002 observational study of 144 children and a 2007 study of 180 consecutively enrolled adults—found no clear distinguishing features for MRSA.^{1,2} They did note some commonly associated risk factors, however (**TABLE**).^{2,3}

Abscess formation was the most common presentation of CA-MRSA, followed by purulent cellulitis.^{3,4} The prevalence and incidence of nonpurulent CA-MRSA is not well defined.

Best treatment bet:

Incision and drainage

Incision and drainage remains the mainstay of abscess treatment.^{3,5} A 2007 RCT of 166 indigent, inner-city patients with confirmed MRSA investigated combining incision and drainage with 7 days of therapy using either cephalexin or placebo. The primary outcome was clinical

cure or failure 7 days after incision and drainage. The trial found no advantage to adding antibiotics; MRSA would likely be resistant to cephalexin in any case.⁶

A 2006 summary from *Clinical Evidence* found no RCT support for any outpatient antibiotic.⁷ No evidence exists that intranasal mupirocin or antiseptic body washes reduce the recurrence rate.⁷ We found no studies evaluating the optimal treatment of purulent skin and soft tissue infections without abscesses.

Avoid fluoroquinolones

MRSA isolates demonstrate a high resistance to fluoroquinolones, so this class of drugs isn't recommended.³

Recommendations

The Centers for Disease Control and Prevention (CDC) recommends the following treatment for CA-MRSA:

- drain all abscesses; incision and drainage alone suffices for immunocompetent patients
- for other patients, consider adjunct

FAST TRACK

No clinical or epidemiologic features clearly differentiate CA-MRSA from methicillin-sensitive infections.

TABLE

Is it MRSA? A look at the odds

RISK FACTOR	OR (95% CI)*
Antibiotics in past month	2.4 (1.4-4.1)
Abscess	1.8 (1.0-3.1)
Reported spider bite	2.8 (1.5-5.3)
Underlying illness	0.3 (0.2-0.6)
History of MRSA infection	3.3 (1.2-10.1)
Close contact with a person with a similar infection	3.4 (1.5-8.1)
Older age (odds ratio per decade of life)	0.9 (0.9-1)
Snorting or smoking illegal drugs	2.9 (1.2-6.8)
Incarceration within previous 12 months	2.8 (1.1-7.3)
Presentation with a nonskin infection	0.3 (0.1-0.8)

CI, confidence interval; MRSA, methicillin-resistant *Staphylococcus aureus*; OR, odds ratio.

*Odds ratio of MRSA vs methicillin-sensitive *Staphylococcus aureus* or another bacterium.

Source: Miller LG, et al² and Moran GJ, et al.³

treatment with clindamycin, trimethoprim and sulfamethoxazole, tetracyclines, or linezolid.

The CDC also recommends consulting an infectious disease specialist before using linezolid and avoiding fluoroquinolone and macrolide antibiotics because resistance develops rapidly.⁸ Rifampin can be used in combination with other standard treatments.⁸

The CDC doesn't recommend treating nonpurulent skin infections with CA-MRSA-specific antibiotics. These infections are generally caused by *Streptococcus pyogenes* and remain sensitive to β -lactam antibiotics. When the community prevalence of CA-MRSA is low, a

β -lactam antibiotic can be used with close follow-up.⁸

The Infectious Diseases Society of America recommends incision and drainage for abscesses and treatment with CA-MRSA-specific antibiotics for purulent skin infections.⁹ ■

References

- Sattler CA, Mason EO Jr, Kaplan SL. Prospective comparison of risk factors and demographic and clinical characteristics of community-acquired methicillin-resistant versus methicillin-susceptible *Staphylococcus aureus* infection in children. *Pediatr Infect Dis J*. 2002;21:910-917.
- Miller LG, Perdreaux-Remington F, Bayer AS, et al. Clinical and epidemiological characteristics cannot distinguish community-associated methicillin-resistant *Staphylococcus aureus* infection from methicillin-susceptible *S aureus* infection: a prospective investigation. *Clin Infect Dis*. 2007;44:471-482.
- Moran GJ, Krishnadasan A, Gorwitz RJ, et al. Methicillin-resistant *S aureus* infections among patients in the emergency department. *N Engl J Med*. 2006;355:666-674.
- Ruhe JJ, Smith N, Bradsher RW, et al. Community-onset methicillin-resistant *Staphylococcus aureus* skin and soft tissue infections: impact of antimicrobial therapy on outcome. *Clin Infect Dis*. 2007;44:777-784.
- Gorwitz RJ. A review of community-associated methicillin-resistant *Staphylococcus aureus* skin and soft tissue infections. *Pediatr Infect Dis J*. 2008;27:1-7.
- Rajendran PM, Young D, Maurer T, et al. Randomized, double-blind, placebo-controlled trial of cephalexin for treatment of uncomplicated skin abscesses in a population at risk for community-acquired methicillin-resistant *Staphylococcus aureus* infection. *Antimicrob Agents Chemother*. 2007;51:4044-4048.
- Weller T. MRSA treatment. *BMJ Clin Evid*. 2006;6:922-933.
- Gorwitz RJ, Jernigan DB, Powers JH, et al. Strategies for clinical management of MRSA in the communities: summary of an expert's meeting convened by the Centers for Disease Control and Prevention; March 2006. Available at: www.cdc.gov/ncidod/dhqp/ar_mrsa_ca_04meeting.html. Accessed June 18, 2008.
- Stevens DL, Bisno AL, Chambers HF, et al. Practice guidelines for the diagnosis and management of skin and soft-tissue infections. *Clin Infect Dis*. 2005;41:1373-1406.

FAST TRACK

Abscess formation is the most common presentation of CA-MRSA, followed by purulent cellulitis.

CLINICAL INQUIRIES

online this month at www.jfponline.com

THE JOURNAL OF
FAMILY
PRACTICE

- What's the most practical way to rule out adrenal insufficiency?
- Do hyaluronic acid injections relieve osteoarthritic knee pain?

Get the answers to these Clinical Inquiries by going to www.jfponline.com and clicking on "Online Exclusives" in the left-hand navigation bar.