

CLINICAL UPDATE

ON COMMUNITY-ASSOCIATED METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS IN MEN WHO HAVE SEX WITH MEN | FEB 08

KEY POINTS:

- Community-associated methicillin-resistant *Staphylococcus aureus* (CA-MRSA) is increasingly a cause of skin and soft tissue infections in the U.S.
- All persons, including gay and other men who have sex with men (MSM) and persons with HIV infection, are at risk of infection with CA-MRSA
- MRSA is not a sexually transmitted disease (STD), as conventionally defined. Predominately, transmission is through skin-to-skin contact. Risk of MRSA from specific sex practices is unclear and continues to be studied
- Management of soft tissue infections primarily involves incision and drainage of fluid-filled collections
- Local antibiotic susceptibility patterns should direct ancillary antibiotic therapy, which is not always required to cure infection; judicious use of antibiotics is recommended
- Providers should counsel at-risk patients on symptom recognition and standard precautions, including basic risk reduction steps that can decrease risk of acquiring Staph, including MRSA

BACKGROUND

Since the mid-1990s, community-associated methicillin-resistant *Staphylococcus aureus* (CA-MRSA) has emerged as a principal cause of community acquired skin and soft tissue infections. Approximately 30% of the general population is colonized with *S. aureus* and less than 2% of the general population is colonized with MRSA. *S. aureus*, including CA-MRSA, can cause a wide range of clinical conditions, from folliculitis and furunculitis, to cellulitis and other soft tissue infections with abscess components. Infection may become systemic, and in rare cases CA-MRSA may cause pneumonia, osteomyelitis, pyomyositis, bloodstream infections, and other serious infections.

CA-MRSA is well known to affect a wide range of populations, including children, athletic team members, military recruits, incarcerated persons, injection drug users, as well as gay men and MSM, and HIV-infected persons. Transmission is primarily through skin-to-skin contact. In particular, skin abrasions, shaving, contact with contaminated surfaces and items, chronic skin diseases, and poor hand and skin hygiene increase risk.

By definition, CA-MRSA is resistant to β -lactam antibiotics and also frequently resistant to macrolides and fluoroquinolones. However, most isolates remain susceptible to more than one drug class. Of note, *Staphylococcus aureus* that is sensitive to methicillin (MSSA) can also be the cause of serious community-associated infections, such that methicillin sensitivity itself should not be perceived as a marker of less serious infections.

MRSA AND SEX

CA-MRSA is not an STD as conventionally defined. It is not predominately spread through sexual contact, and mucosal sexual contact has not been found to directly transmit the infection. Nonetheless, close contact that occurs during sex, like other forms of skin-to-skin contact, may allow acquisition of MRSA from an infected or colonized partner, as reflected by reports in heterosexuals and MSM alike. Use of barrier methods such as condoms, while advantageous for STD prevention, will not protect adequately against MRSA transmission if infected skin surfaces are not covered fully.

MRSA IN MSM

CA-MRSA outbreaks have been described in MSM. In addition, a recent report by Diep and colleagues suggested an association between a specific USA300 CA-MRSA strain that was resistant to macrolides, clindamycin, tetracycline, and mupirocin, and male-to-male sex based in part on retrospective, cross-sectional analyses of MSM in a San Francisco, CA HIV care clinic and a community clinic in Boston, MA, from 2004-2006. While all patients with CA-MRSA were HIV-positive in the San Francisco cohort, only 45% of those with the infection in the Boston group were HIV-positive.

In these cohorts, 25-37% of infections involved the genitals, perineum, and/or buttocks, which are also common sites of CA-MRSA infection in heterosexuals. This study was not designed to determine a causal relationship between specific sexual practices and MRSA infection. While other reports also have shown an increased incidence of CA-MRSA infection in MSM populations, associations with specific sex practices have not been demonstrated.

CLINICAL CARE CONSIDERATIONS

DIAGNOSIS AND TREATMENT. Recent reports of CA-MRSA in MSM do not alter the fundamental principles of outpatient management of skin and soft tissue infections (SSTIs). Those involving collections of purulent material (e.g., furuncle, abscess) should be primarily treated with incision and drainage (I&D). Not only is I&D alone curative in many cases, but drainage allows antibiotic susceptibility testing, useful for both patient management if I&D alone is not curative, and improved understanding of local resistance patterns. Indications for ancillary antibiotic therapy in addition to I&D, or when drainage is not possible include: presence of systemic symptoms (e.g., fever, chills, dyspnea), cellulitis or worsening local symptoms (e.g., spreading SSTI, fasciitis), immunosuppression (including HIV), extremes of age, or symptoms refractory to initial management. Depending on local epidemiology, empiric oral antibiotic therapy for less severe infections thought to be caused by CA-MRSA often includes trimethoprim-sulfamethoxazole (TMP-SMX), and may include a tetracycline or clindamycin; linezolid is a comparatively expensive option.

KEY MANAGEMENT CONSIDERATIONS AND STEPS:

- Antibiotic susceptibility patterns of *S. aureus* infections are not distinguishable clinically.
- Incise and drain abscesses as first-line management whenever possible.
- Send one or more drainage specimens for bacterial culture and sensitivity testing. Note: culturing the nares or skin is not helpful as results may not reflect the bacteriology of the underlying infection.
- When antimicrobial therapy is indicated in infected patients and where local epidemiology reflects substantial prevalence of CA-MRSA, initial therapy should be directed against MRSA.
- Beta-lactams (penicillins/cephalosporins) should not be prescribed when MRSA is a possible etiology.
- Educate patients on proper wound care and prevention of transmission to close contacts.
- Exercise standard precautions in clinical settings to avoid transmission of MRSA.
- Widespread screening for nasal colonization is not recommended.

PATIENT EDUCATION MESSAGES. Recent studies reinforce the importance of educating patients about standard precautions, which include practical steps that may reduce risk of acquiring CA-MRSA. The following are general risk reduction steps clinicians should convey to patients who are concerned about CA-MRSA, as well as patients with previous MRSA infections.

PRACTICE GOOD HYGIENE:

- Proper and frequent hand hygiene (washing with soap and water or using an alcohol-based hand sanitizer) to eliminate bacteria on skin surfaces.
- Keep skin clean and bathe with soap; it is unknown if antibacterial soaps offer additional benefit.
- Keep skin moist with lotion to avoid damaged skin that may become dry and cracked.
- Avoid shaving in moist body areas or areas that have been previously infected and/or ensure that shaved skin remains clean and dry.
- Keep skin cuts and scrapes clean and covered with a bandage until healed; antibiotic containing ointments (i.e., bacitracin) are acceptable.
- Avoid direct contact with other people's wounds or bandages; wash hands thoroughly with soap after any such contact.
- Avoid sharing personal hygiene items such as towels or razors.
- In a gym, steam room, or locker room use a clean towel when sitting on benches. There is no evidence toilet seats are associated with transmission of *S. aureus*.
- Use a disinfectant spray on gym equipment before and after use.

WITH SEXUAL CONTACT: Avoid contact with an area of another person's skin that is known to be infected. Shower and/or clean the skin after sex. Research shows reducing the number of sex partners helps lower risk of getting other STDs, including HIV. It may help reduce the risk of contracting MRSA by decreasing amount of exposure to skin of others who might be infected.

REPORTING IN CALIFORNIA. Currently individual MRSA cases are not reportable in California. However, all outbreaks, including those due to MRSA, must be reported to local public health departments.

FOR MORE INFORMATION

- Centers for Disease Control and Prevention (http://www.cdc.gov/ncidod/dhqp/ar_mrsa_ca.html)
- Infectious Diseases Society of America (<http://www.idsociety.org/newsArticle.aspx?id=8304>)
- Los Angeles County Department of Public Health (<http://www.lapublichealth.org/acd/MRSA.htm>)
- San Francisco Department of Public Health (<http://www.mrsasf.org>)

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