Methicillin-resistant *Staphylococcus Aureus* (MRSA)

Disease Description

The common skin lesions caused by Staph aureus are impetigo, boils, carbuncles, abscesses, and infected lacerations. These are usually localized and discrete. Methicillin-Resistant Staphylococcus Aureus (MRSA) is a type of Staphylococcus bacterium that has developed resistance to some antibiotics. There are two main types of MRSA. Healthcare-associated (HA) MRSA is found primarily in hospital patients and long-term care residents with weakened immune systems. When MRSA is acquired outside of the hospital, it is referred to as community associated (CA) MRSA. CA-MRSA occurs in healthy individuals in the general population who report no contact with healthcare facilities. CA MRSA typically causes skin infections, such as pimples, boils or abscesses, and are often initially mistaken for spider bites. Occasionally, it results in more serious soft tissue, blood, and systemic infections. This guideline discusses CA-MRSA.

Transmissibility and infectivity is comparable between infections caused by *Staphylococcus aureus* with and without methicillin resistance. Therefore signs and symptoms, incubation and contagion periods, control of spread and exclusion guidelines are identical for all Staphylococcus aureus infections, including MRSA.

Risk factors for CA-MRSA include skin trauma, crowding, frequent skin-to-skin contact, sharing potentially contaminated personal items or equipment, and frequent exposure to antimicrobial agents.

Time Between Exposure and Appearance of Symptoms (Incubation Period)

The incubation period for *S. aureus* is unknown. Some people may carry Staph or MRSA without having symptoms of active infection. About one in three people carry Staph in their nose, usually without any illness. Two in 100 people carry MRSA. These colonized persons are not considered to be infectious when they do not have an active infection.

How a Person Acquires Staph Infections (Method of Spread)

S. aureus skin infections may occur at sites of skin trauma. Anyone can get MRSA through direct contact with an infected wound, often via hands, or by sharing personal items, such as towels or razors, that have touched infected skin. However, for an infection to occur, the bacteria must get through a break in the skin. MRSA infection risk can be increased when a person participates in certain activities that involve skin-to-skin contact and/or shared equipment or supplies such as athletics.

Length of Time Staph Aureus Can Be Spread (Period of Communicability)

Skin lesions are considered infectious until they have healed. They are most infectious when they are draining or weeping.

Treatment

Most MRSA skin infections will heal without the use of antibiotics. Treatment for MRSA skin infections may include having a healthcare provider drain the infection and in some cases, prescribe an antibiotic. MRSA is resistant to some commonly prescribed antibiotics such as amoxicillin and cephalexin (Keflex), but other antibiotics remain effective. Good hand hygiene and avoiding contact with people's wounds are important to limit spread of the infection.

Prevention

Prevention steps include practicing good hygiene by:

- Wash hands often or use an alcohol-based hand sanitizer.
- Keep cuts and scrapes clean and covered with bandages.
- Avoid touching cuts or bandages (wear gloves).
- Place soiled items in the trash.
- Good cleaning with a household disinfectant, such as bleach, is adequate.

Additional practices for locker rooms and student athletes

- Showers, locker rooms, weight rooms, mats, benches, sports equipment and other commonly used items and areas should be routinely cleaned and disinfected with EPA registered disinfectants effective against MRSA or diluted bleach solution.
- Whirlpools/swimming pools should not be used by persons with open wounds or active skin infections.
- Remind coaches and trainers that used bandages and dressings that are heavily soiled or saturated with blood or wound drainage should be sealed in a plastic bag before discarding into regular trash containers.
- Uniforms, towels, and other laundry should be washed routinely in hot water and detergent or warm water and bleach and dried thoroughly in a hot dryer.
- Liquid soap dispensers are recommended in place of soap bars for use in common areas such as restrooms and locker rooms. Soap dispensers should contain bottles or bags that are replaced when empty to avoid addition of soap to used containers.

Initial Management **Wisconsin Communicable Disease Chart**

See Skin Rash

1. Obtain subjective data:
    a. Symptoms
    b. Timeline of symptoms

   c. Any household/close contact with symptoms

2. Obtain objective data:
   a. Inspect skin, looking for impetigo, boils, carbuncles, abscesses, infected lacerations.
   b. Measure temperature.

3. Discuss findings with student and parent.
4. Recommend health care provider contact for diagnosis and treatment.

5. Discuss self-care measures with parent, including proper hand hygiene and care of the environment. Encourage children to keep hands away from lesions.

6. All lesions should be kept clean and covered until healed.

7. Students with MRSA infections are not excluded from school unless lesions are draining and cannot be adequately covered with a dry dressing, or the dry covering cannot be maintained.

8. Document in electronic student health record
9. Subjective data
   a. Symptoms and when they occurred
   b. Any household/close contacts with similar symptoms
10. Objective data
   a. Presence and location of lesions
   b. Vital signs
11. Intervention
   a. Care provided
   b. Disposition/referral to further care
   c. Education provided

Follow-up

1. Refer to nurse for diagnosis and treatment if student has no health insurance or has significant barriers to accessing health care.

2. Follow up with teacher and close contacts regarding possible spread of disease.

References

Kaplan, S. (2023). MS Edwards, D Blake (Eds) Methicillin-resistant Staphylococcus aureus infections in children. *UpToDate.* Available from:

https://www.uptodate.com/contents/methicillin-resistant-staphylococcus-aureus-infections-in-children-epidemiology-and-clinical-spectrum/contributors (Accessed 7/24/2023)