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## A View - Community Associated MRSA.

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### ABSTRACT

The MRSA - methicillin-resistant Staphylococcus aureus, is more common in hospitals but now a days the spread is also there in the community and it's through the community. In the general community, MRSA can cause skin and other infections. In a healthcare setting, such as a hospital or nursing home, MRSA can cause severe problems such as bloodstream infections, pneumonia and surgical site infections.

**Keywords:** MRSA, CA-MRSA, antibiotics, infection, intravenous drugs, community, bacteria

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## INTRODUCTION

For any diseases the treatment regime is mostly with antibiotics. Now days the most of the bacteria has become resistant to most of the antibiotics. In that one is the MRSA an methicillin-resistant *Staphylococcus aureus*, a type of staph bacteria that is resistant to Penicillin, antibiotics including dicloxacillin or other methicillin-related antibiotics. These bacteria are also resistant to the cephalosporin. Taking antibiotics was a risk factor for infection with MRSA.

Originally MRSA was confined only to hospitals and long-term care facilities. Many of these hospital-associated MRSA infections caused very serious complications and were resistant to all oral antibiotics.

More recently a newer, more virulent strain of MRSA has emerged in the community that causes boils, abscesses, and other soft tissue infections that is not linked to previous antibiotic use. It is called community-associated MRSA(1).

### MEANING(3)

CA-MRSA is a bacterium that is like other *Staphylococcus aureus* bacteria with three differences:

- it can't be killed by the antibiotic, methicillin, but can be killed by several different antibiotics
- it arose from people in the community not the hospital
- it has special genes that make it more likely to produce pus

### BACKGROUND

*Staphylococcus aureus* simply called as "staph" usually carried on skin or nose in healthy persons approximately 25% to 30% of the population is colonized (when bacteria are present, but not causing an infection) in the nose with staph bacteria. It can also be carried in the armpit, groin, or genital area.

Most of these skin infections are minor (such as pimples and boils) and can be treated without antibiotics.

However, staph also can cause serious infections such as pneumonia, bloodstream infections, and joint infections. Most infections occur through direct physical contact of the staphylococci with a break in the skin (cut or scrape). If there is no break in the skin, contact with infected persons or contaminated objects may result in colonization.

### PREVELANCE

Studies show that about one in three people carry staph in their nose, usually without any illness. Two in 100 people carry MRSA. There are not data showing the total number of people who get MRSA skin infections in the community.

### RISK GROUPS(7)

- Direct contact with infected wound or by sharing personal items, such as towels or razors that have touched infected skin.
- crowded places, especially with shared equipment and skin-to-skin contact
- weaker immune systems (HIV/AIDS, lupus, or cancer sufferers; transplant recipients, severe asthmatics, etc.)
- Diabetics & Intravenous drug users
- Users of quinolone antibiotics<sup>1</sup>
- The elderly & College students living in dormitories
- Women with frequent urinary tract or kidney infections due to infections in the bladder
- People staying or working in a health care facility for an extended period of time

- People who spend time in confined spaces with other people, including occupants of homeless shelters and warming centers, prison inmates, military recruits in basic training and individuals who spend considerable time in changing rooms or gyms
- Veterinarians, livestock handlers, and pet owners<sup>1</sup>
- Extended stay in the hospital.
- Sports persons
- Homosexual men have a higher risk of developing MRSA infections.

#### HOW IT SPREADS IN THE COMMUNITY(7)

1. This infection mostly spread through direct physical contact staphylococci with a break in the skin (cut or scrape).
2. It can spread from infected person to someone else or to an object. Inanimate objects, such as
  - Clothing,
  - Bed linens,
  - Sports equipment
  - Personal items (soap or wash cloths)
  - Furniture, so when a person comes in contact with these infected articles it spreads.

If there is no break in the skin, contact with infected persons or contaminated objects may result in colonization.

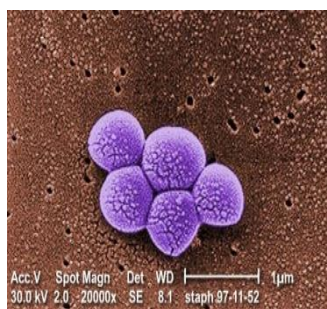
#### MRSA SYMPTOMS(2)(3)

Most staph skin infections, including MRSA, appear as a bump or infected area on the skin that might be:

- ✚ Pain, redness and swelling of skin areas smaller than a pencil eraser in diameter progression to larger areas that form a boil or abscess later
- ✚ Warm to the touch
- ✚ Full of pus or other drainage -larger sites drain yellow thick material
- ✚ low grade fever and malaise are uncommon but can occur and mean medical intervention is needed over in 1-2%, these symptoms can be followed by rapid onset of high fever,
- ✚ Severe pain, redness and swelling of an arm, leg, or foot so that bearing weight is impossible. These patients require immediate evaluation and hospitalization for antibiotics to be given by vein.

#### PHOTO GALLERY OF MRSA INFECTION

In the community, most MRSA infections are skin infections that may appear as pustules or boils which often are red, swollen, painful, or have pus or other drainage. They often first look like spider bites or bumps that are red, swollen, and painful. These skin infections commonly occur at sites of visible skin trauma, such as cuts and abrasions, and areas of the body covered by hair (e.g., back of neck, groin, buttock, armpit, beard area of men)



**MRSA BACTERIA**

**COMPARISON OF CUTANEOUS ABSCESS AND CUTANEOUS ABSCESS CAUSED BY MRSA(2)(3)**



**Cutaneous abscess located on the back;**



**cutaneous abscess caused by MRSA**



**Cutaneous abscess located on the foot;**



**cutaneous abscess caused by MRSA**

**DIAGNOSIS**

The only way to make a diagnosis is to get a

1. Culture of the infected site.
  - + If wound drain pus ,culture material can be sent from that
  - + No draining pus ,the doctors should drain the pus –for culture ,to relieve pain and for the antibiotic to work more effectively

**TREATMENT (5)(6)**

CA-MRSA treatment has 2 parts:

- Drainage of pus-filled sites like boils and abscesses
- Use of an appropriate antibiotic-
  - The drug of choice for treating CA-MRSA is now believed to be vancomycin,
  - Newer drugs, such as linezolid (belonging to the newer oxazolidinones class) and daptomycin, are effective against both CA-MRSA and HA-MRSA.

Studies suggest that allicin, a compound found in garlic, may prove to be effective in the treatment of MRSA.

**PREVENTING CA-MRSA**

- **Wash your hands.** Careful hand washing remains your best defense against germs. Scrub hands briskly for at least 15 seconds, then dry them with a disposable towel and use another towel to turn



off the faucet. Carry a small bottle of hand sanitizer containing at least 62 percent alcohol for times when you don't have access to soap and water.

#### HANDWASHING PROCEDURE (4)

1. Use warm water.
  2. Wet hands and wrists.
  3. Use a bar or liquid soap. Antimicrobial soap is not necessary to disinfect against MRSA.
  4. Work soap into a lather and wash palms, back of hands up to wrists, between fingers, around thumbs, and under fingernails for at least 15 seconds.
  5. Dry hands, using a disposable paper towel or hand-dryer.
- **Keep wounds covered.** Keep cuts and abrasions clean and covered with sterile, dry bandages until they heal. The pus from infected sores may contain MRSA, and keeping wounds covered will help prevent the bacteria from spreading.
  - **Keep personal items personal.** Avoid sharing personal items such as towels, sheets, razors, clothing and athletic equipment. MRSA spreads on contaminated objects as well as through direct contact.
  - **Shower after athletic games or practices.** Shower immediately after each game or practice. Use soap and water. Don't share towels.
  - **Sanitize linens.** If you have a cut or sore, wash towels and bed linens in a washing machine set to the hottest water setting (with added bleach, if possible) and dry them in a hot dryer. Wash gym and athletic clothes after each wearing.

#### HOW TO TAKE CARE OF WOUNDS AT HOME:

- The wound must remain covered. The dressing must be changed at least twice a day or more frequently if drainage is apparent or as directed by the clinician.
- Consider using clean, disposable, non sterile gloves to change bandages.
- Isopropyl alcohol and friction should be used to disinfect reusable materials, such as scissors or tweezers.
- Reusable equipment that come in contact with the wound must be disinfected with a fresh (daily) mix of one tablespoon of household bleach to one quart of water or a phenol-containing product such as Lysol or Pinesol.
- Place disposable items that have come in contact with the infected site, including soiled dressings, in a separate trash bag and close the bag before placing in the common garbage or household trash.

#### PREVENTION OF SPREAD TO OTHERS AT HOME (7)

- Family members, other close contacts should wash their hands frequently with soap and warm water
- Laundry should be carried away from the body in a plastic or other lined bag that will not allow wet articles to drain through.
- All clothing, towels, linens that come in contact with the wound should be handled separately
- Articles that come in contact with the wound should be washed in the hottest water the fabric will tolerate with the usual detergent.
- Clothing should be dried thoroughly using the hottest setting the fabric will tolerate.
- Change towels and linens daily if possible.

#### HOW TO TAKE CARE OF WOUNDS AT SCHOOL (7)

- Instruct the students to carry and use an alcohol-based hand sanitizer when soap and water are not available.
- Clean and disinfect sports and other equipment or any part of the area that comes in contact with the wound with commercial disinfectant or fresh solution of diluted bleach before any other athlete comes in contact with the equipment or area.
- Trainers or others who care for the wound should use clean non-sterile gloves.
- Put on clean gloves just before touching broken skin.
- Remove gloves promptly after use and discard.

- Wash hands immediately after contact with the wound even if gloves were worn.
- Place disposable items that have come in contact with the infected site in a separate trash bag and close the bag before placing in the common garbage.
- Do not give other team members prophylactic antibiotics.

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