

CIC Study Group 8/30

Skin and soft tissue infections, staphylococci, streptococci

What is not a part of the skin?

- A. Epidermis
- B. Dermis
- C. Subcutaneous
- D. Fascia

What is not a part of the skin?

D. Fascia

Deep fascia is considered part of the subcutaneous layer of the skin. Fascia can be found throughout the body surrounding muscles and organs.

What is the prevalence rate of MRSA in hospitalized patients in the US?

- A. 23%
- B. 41%
- C. 47%
- D. 64%

What is the prevalence rate of MRSA in hospitalized patients in the US?

C. 47%

The most common microorganism isolated from hospitalized patients with SSTIs has been *S. aureus* with a range in MRSA prevalence from as high as 23% in Western Europe to 47% in the United States. (2000)

What is not a risk factor for a MRSA infection?

- A. Prior exposure to antimicrobial agents
- B. Prolonged hospital stay
- C. ICU
- D. Burn unit
- E. Laceration
- F. Use of invasive devices
- G. Surgical procedures
- H. Underlying illness

Risk factors for MRSA Include:

Prior exposure to antimicrobial agents

Prolonged hospital stay

ICU

Burn unit

~~Laceration~~

Use of invasive devices

Surgical procedures

Underlying illness

What is the abbreviation for MRSA infection outside a healthcare setting?

- A. Ca-MRSA
- B. CA-MRSA
- C. Co-MRSA
- D. CO-MRSA

What is the abbreviation for MRSA infection outside a healthcare setting?

B. CA-MRSA

Community Acquired MRSA

Matching!



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| | | |
|-----------------|---------------|---------------|
| A. Impetigo | C. Furuncles | E. Erysipelas |
| B. Folliculitis | D. Carbuncles | F. Paronychia |

Folliculitis

Circumscribed infectious process originating in hair follicles that can be defined as superficial or deep

Usually *S. aureus*

Pseudomonas aeruginosa has been associated with water exposures

Initial lesions appear usually within 48 hours of exposure



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Impetigo

Superficial infection affecting children and older adults

Characterized by blisters without crusts that progress lesions that ooze yellow or honey colored crust

S. aureus infection - bullous impetigo

Group A streptococcal infection - nonbullous infection



Photo Credit: Gregory Moran, M.D.

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Carbuncle

Usually occur at the nape of the neck or on the back or thighs

Larger than a furuncle, with infection spreading under and between fibrous septa in deep skin tissues, forming a series of interconnected small abscesses.

Most commonly caused by *S. aureus*



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Furuncle

Boil

Most commonly caused by *S. aureus*

Tx: I&D

Photo: CDC Case #423 July 2016

Furuncular myiasis

A six-year-old boy from Washington, D.C. presented with a non-migratory furuncle on his scalp several weeks after returning from a trip to Belize. A small incision was made and a larval bot fly was removed.





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Paronychia

Infection of the proximal or lateral fingernail or toenail folds

Associated with trauma or chronic moisture

Acute infection

S. aureus

Group A streptococci

Chronic infection

Candida albicans

Tx: minimize water exposure



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Erysipelas

Painful, bright red, edematous, indurated skin plaque with an advancing border, sharply demarcated from the surrounding normal skin.

Legs and face

Most commonly Group A streptococci

Spreads through lymphatic system

Less common: Streptococcus groups B, C, and G

Tx: Oral penicillin or clindamycin

vs Cellulitis

Similar to erysipelas BUT it often extends into subcutaneous layer

Not raised

Lower legs below the knee

Most commonly *S. aureus* and *S. pyogenes*

Lymphangitis associated with group A streptococcal infection

Tx: Varies depending on severity of disease

Methicillin resistance is defined as an oxacillin minimum inhibitory concentration (MIC) of at least _____ $\mu\text{g/mL}$

- A. 4
- B. 5
- C. 16
- D. 20

Methicillin resistance is defined as an oxacillin minimum inhibitory concentration (MIC) of at least _____ $\mu\text{g/mL}$

A. 4

Streptococci

Are streptococci gram negative or gram positive?

- A. Negative
- B. Positive

Are streptococci gram negative or gram positive?

B. Gram Positive

What are the 3 serologic tests to commonly diagnose streptococcal infection?

- A. Antistreptolysin O (ASO), Anti-DNase B, Antihyaluronidase
- B. Enzyme-linked immunosorbent assay (ELISA)
- C. Anti-DNase B
- D. Antihyaluronidase

What are the 3 serologic tests to commonly diagnose streptococcal infection?

A. Antistreptolysin O (ASO), Anti-DNase B, Antihyaluronidase

_____ is the drug of choice in the treatment of streptococcal infections such as Group A Streptococci.

- A. Erythromycin
- B. Penicillin
- C. Clindamycin
- D. Doxycycline

Penicillin is the drug of choice in the treatment of streptococcal infections such as Group A Streptococci.

B. Penicillin

Penicillin is the drug of choice for GAS infections. Penicillin resistance has not yet been identified in GAS infections. Erythromycin is recommended to patients with a penicillin allergy, however there has been reports of GAS resistance.

Clindamycin is recommended when NF is present as penicillin is less effective.

What is the difference between streptococci and staphylococci?

- A. Streptococci are gram positive while staphylococci are gram negative
- B. Streptococci are unable to produce catalase
- C. Staphylococci are unable to produce catalase
- D. Streptococci are spherical or ovoid while staphylococci are not

What is the difference between streptococci and staphylococci?

B. Streptococci are unable to produce catalase

A negative catalase test result distinguishes streptococci from staphylococci.

GAS causes approximately _____ of all sore throats in children.

- A. 5%
- B. 10%
- C. 15%
- D. 25%

GAS causes approximately _____ of all sore throats in children.

C. 15%

Transmission occurs by direct person to person contact, probable through infected droplets of saliva or nasal secretions, possibly through hand to hand to mouth contact. Crowding (in schools) may account for increased incidence in the colder months of the year.

Asymptomatic carriage of GAS occurs at a rate of 15-20% in school aged children.

What is the gold standard diagnostic tool for streptococcal pharyngitis?

- A. Latex agglutination
- B. Enzyme immunoassay
- C. Rapid antigen detection test
- D. Throat culture

What is the gold standard diagnostic tool for streptococcal pharyngitis?

D. Throat Culture

What population is at greatest risk of Group B Streptococci infection?

- A. Type II diabetes patients
- B. 65+
- C. Neonates
- D. Post operative patients

What population is at greatest risk of Group B Streptococci infection?

C. Neonates

GBS neonatal infections are associated with increased morbidity and mortality. Risk factors include preterm delivery, prolonged membrane rupture during labor, maternal fever during labor, and maternal history of prior infant with GBS sepsis.

THE END