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January 30, 2009

Info Poem: “Abx do not improve outcomes after I & D of skin abscess.” –April 2008.

Clinical Question:
Are Abx necessary after I & D of superficial abscess?

Bottom Line:
"Simply incising and draining a superficial skin abscess is sufficient treatment and results in a very high cure rate. Adding a beta-lactam abx does NOT improve outcomes."

Reference:
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." Antimicrobial Agents and Chemotherapy, Nov. 2007, p. 4044-4048.

ABSCESS

Epidemiology:

Changing resistance patterns of S. aureus requires consideration that an abscess is caused by MRSA.
Risk factors for MRSA infection and other abscesses-IVDA, homelessness, dental disease, contact sports, incarceration, and high prevalence in the community.

Etiology and Pathophysiology:
Most cutaneous abscesses are caused by S. aureus.
Community acquired MRSA can cause single or multiple abscesses, especially in those populations mentioned.
A dental abscess can spread into tissue outside the mouth as in the homeless person here…
CA-MRSA has become so prevalent in our community that both of these patients had no special risk factors and both had abscesses that grew out MRSA.

Diagnosis:
Clinical Features:
Collection of pus in or below the skin. Pts often feel pain and have tenderness at the involved site. There is swelling, erythema, warmth, and fluctuance in most cases.
Typical Distribution:
Skin abscesses can be found anywhere from head to toe. Frequent sites include the hands, feet, extremities, head, neck, buttocks and breast.
Lab Studies:
Culture to determine if the organism is MRSA to guide antibiotic treatment when needed.

Differential Dx:

Epidermal inclusion cyst with inflammation/infection- these cysts (AKA sebaceous cysts) can become inflamed, swollen, and superinfected. While the initial erythema may be sterile inflammation, these cysts can become infected with S. aureus. Treatment= I & D and abx if cellulitis is also present. If removed before they become inflamed, the cyst may be removed intact.

Cellulitis with swelling and no pocket of pus- when it is unclear if an area of infected skin has an abscess, needle aspiration with a lrg gauge needle may be helpful to determine whether to incise the skin. Cellulitis alone should have no area of flatulence.

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Hidradenitis suppurativa: recurrent inflammation surrounding the apocrine glands of the axilla and inguinal areas.

Furuncles and carbuncles: A furuncle or boil is an abscess that starts in a hair follicle or sweat gland. A carbuncle occurs when the furuncle extends into the subcutaneous tissue.

Acne cysts: more sterile inflammation than true abscess, often better to inject with steroid rather than I & D.

Management:
Time honored and best treatment for an abscess .
Inject 1% lidocaine w/ epi into the skin at the site you plan to open using a 27- or 30-gauge needle. Open the abscess with a linear incision using a #11 blade scalpel following skin lines if possible. Drain the pus and pack with gauze.

Culture?
If there is no surrounding cellulitis, an abx should not be needed. If you suspect MRSA and there are signs of cellulitis as well, culture the purulent discharge and start one of the following oral abx:
Trimethoprim-sulfamethoxazole, clindamycin, tetracycline, or doxycycline.
Note there is inducible MRSA resistance to clindamycin. (D-test)

Patient Education:
Patients may shower daily and reapply outer gauze. They should not take a bath or swim and immerse the wound in water until the incision is closed.

Follow-Up
Follow-up visits and removal of packing can be handled in many different ways. There is no evidence to support one practice over another. Pts or family members can be taught to change the packing at home.

Study Reasoning and Design:
A 2005 survey found that 87% of health care providers continue to prescribe antibiotics after I & D of abscesses, and a beta-lactam abx is typically used. (Rajendran, 2007).
Overuse of antibiotics has adverse consequences, including untoward side effects and financial costs and may contribute to the spread of antibiotic-resistant organisms.

The purpose of the study was (i) to compare a current "standard-of-care" abx, cephalexin, to placebo after surgical incision and drainage of uncomplicated skin abscesses; (ii) to establish the prevalence of MRSA in the population under study; and (iii) to prospectively determine whether discordance between therapy and isolate susceptibility affected outcome.

Study location: ISIS Clinic at the San Francisco General Hospital from November 2004 to March 2005.
Materials and Methods:
Diagnostic criteria for an abscess were as follows:
Acute onset within 7 days prior to enrollment
Purulent drainage or purulent aspirate
Erythema, induration (≥ 2 cm in diameter) or tenderness
Evidence of loculated fluid at time of enrollment

Center's clinical standard was to prescribe antibiotics when two or more of these criteria are met.
166 patients randomized (82 assigned to receive cephalexin/ 84 assigned to receive placebo)

Abx regimen: Oral cephalexin 500 mg four times daily for 7 consecutive days.

All subjects seen daily in the clinic by a nurse who assessed wound healing and changed dressings until the wound showed the following signs of healing:
Absences of purulent wound drainage, erythema, fluctuance, localized warmth, pain/tenderness, and edema/induration.
Pts asked to return 7 days after initial enrollment for their follow-up visit.
All patients, investigators, and clinic staff were blinded to study group assignment.

Results:
There was no difference in the clinical cure rate between subjects receiving placebo and those receiving cephalexin (90.5% [n=76/84] verses 84.1% [n=69/82]; P= 0.25
Of the 162 pts for whom cultures were obtained, S. aureus was isolated from 114 (114/162 = 70.4%). Of these 114 S. aureus isolates, 99 were tested for abx susceptibilities; 87 (87/99 = 87.8%) were MRSA.
Pt with comorbidities such as HIV infection, hepatitis, diabetes, and folliculitis were included.
Pt with abscesses ≥ 5cm were also included.
Follow-up study:
Recurrence rates also were not determined, and whether antimicrobial therapy might have a beneficial effect by preventing recurrent infections some weeks or months later is an important question that merits further study.

Resources:

"Practice guidelines for the diagnosis and management of skin and soft-tissue infections." Clinical Infectious Disease 2005; 41:1373-1406.

"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." Antimicrobial Agents and Chemotherapy, Nov. 2007, p. 4044-4048.

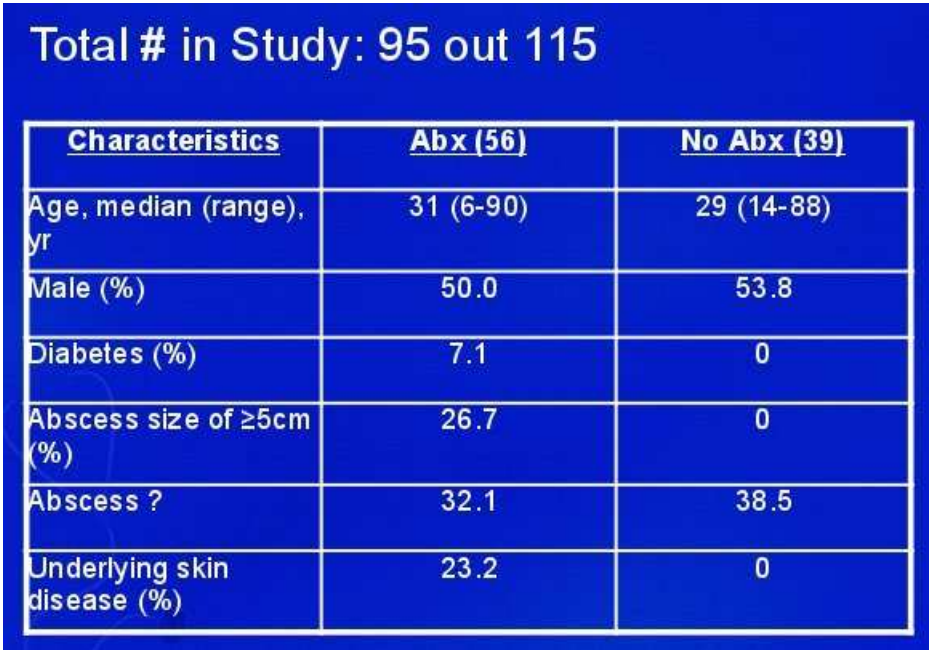
Usatine, R. "Abscess." Color Atlas of Family Medicine 2009; 115: 482-484.

Schreckenberger PC, Ilendo E, Ristow KL. Incidence of constitutive and inducible clindamycin resistance in Staphylococcus aureus and coagulase-negative staphylococci in a community and a tertiary care hospital. J Clinical Microbiology. 2004; 42 (6): 2777-2779.

Rajendran, P. M., D. M. Young, T. Maurer, H. F. Chambers, M. A. Jacobson, et al. "Antibiotic use in the treatment of soft tissue abscesses: a survey of current practice. 2007. Surg. Infect. 8:237-238.

How did we do?

Total # in Study:
95 out 115



We as a group still have a little more work to do when it comes to:
Documentation
Decreasing Abx with I&D use if not indicated

Management for follow-up audit:

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