OHSU HEALTH
Skin and Soft Tissue Infection Empiric Antibiotic Guidelines

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Reviser (Title): Antimicrobial Subcommittee of CKTEC	Owner (Title): Clinical Knowledge & Therapeutics Executive Committee (CKTEC)	

PURPOSE:

To provide guidance on empiric antibiotic selection for adult EGS patients with skin and soft tissue infection.

PERSONS AFFECTED:

This procedure applies to OHSU EGS workforce members involved in prescribing, dispensing or administrating antibiotics for the treatment of skin and soft tissue infection.

DEFINITIONS:

- EGS: Emergency General Surgery
- MRSA: methicillin-resistant Staphylococcus aureus
- MSSA: methicillin-susceptible Staphylococcus aureus
- PCN: penicillin

GUIDELINE REQUIREMENTS:

Refer to Tables 1 and 2 below.

RELEVANT REFERENCES:

- Stevens DL, Bisno AL, Chambers HF, et al. Practice guidelines for the diagnosis and management of skin and soft tissue infections: 2014 update by the Infectious Diseases Society of America [published correction appears in Clin Infect Dis. 2015 May 1;60(9):1448. Dosage error in article text]. Clin Infect Dis. 2014;59(2):e10-e52. doi:10.1093/cid/ciu444.

RELATED DOCUMENTS/EXTERNAL LINKS:

- N/A

APPROVING COMMITTEE(S):

Antimicrobial Subcommittee of CKTEC
CKTEC

REVISION HISTORY

Revision History Table

Document Number and Revision Level	Final Approval by	Date	Brief description of change/revision
HC-CKT-171-GUD.Rev 011221	CKTEC	November 2020	• New guideline created

Table 1. Skin and soft tissue infection empiric antibiotic guidelines

	Purulent Skin and Soft Tissue Infection Abscess, Cellulitis with Abscess, Furuncle, Carbuncle		**Non-Purulent Cellulitis, Skin and Soft Tissue Infection**		
Severity	**Outpatient**	**Inpatient** Failed outpatient management, immunocompromised, or rapid progression	**Outpatient**	**Inpatient**	**Inpatient severe** Skin sloughing, severe sepsis or septic shock, neutropenia, AIDS, receiving chemotherapy
Pathogens	• *Staphylococcus aureus* (MSSA or MRSA) • Perianal/perirectal abscess: enteric gram negatives, anaerobes		*Streptococcus pyogenes* (Group A Strep); guidelines also recommend empirically covering for MSSA for moderate cases; reasonable to include broader coverage for inpatient "severe" cases		
Procedures & Cultures	• Incision & drainage • Culture abscess drainage		• Do not perform superficial swab culture from skin; if purulence is found, then culture & treat as purulent infection		
Empiric treatment options	Oral antibiotics as adjunctive to incision and drainage[1]: • **Doxycycline 100mg PO BID (preferred)** • Bactrim DS PO 1 tab BID For perianal/perirectal abscess with cellulitis, systemic signs of infection and/or immunosuppression: • Amoxicillin-clavulanate 875/125mg PO Q8H • Levofloxacin 750mg PO daily + metronidazole 500mg PO Q8H	IV antibiotics • Vancomycin IV per pharmacy For perianal/perirectal abscess with cellulitis, systemic signs of infection and/or immunosuppression: • Cefepime + metronidazole • Piperacillin-tazobactam	Oral antibiotic • Penicillin VK 500 mg PO Q8H • Cephalexin 1g PO Q8H • Alternative: Clindamycin 450 mg PO Q8H‡ ‡OHSU antibiogram shows decreased sensitivity of Strep pyogenes (Group A Strep) and Strep agalactiae (Group B Strep) to clindamycin	IV antibiotics • Cefazolin 2g IV Q8H • Alternative: Vancomycin IV per pharmacy	IV antibiotics • Vancomycin IV per pharmacy + cefepime + metronidazole • Vancomycin IV per pharmacy + piperacillin/tazobactam*
	***The combination of vancomycin and piperacillin-tazobactam has been associated with nephrotoxicity, especially when used for >48-72h.** **Recommend early re-assessment and de-escalation of antibiotics based on culture results.**				
Duration of Treatment	5 days after incision & drainage Consider step-down to oral antibiotic once patient is stable and signs of infection are resolving		5 days; treatment should be extended if the infection has not resolved within 5 days Consider step-down to oral antibiotics once patient is stable and signs of cellulitis are resolving		
Clinical Pearls	[1] **Mild infection with no signs of systemic toxicity**: the 2014 IDSA guidelines suggest adjunctive antibiotics are not needed; however, treatment with antibiotics in addition to incision and drainage was associated with higher clinical cure and lower incidence of subsequent drainage, new skin infections, and infections in household members in randomized trials (N Engl J Med 2016;374:823||N Engl J Med 2017;376:2545||Ann Emerg Med 2018;71:21||BMJ Open 2018;8:e020991.		Elevation of the affected area and treatment of predisposing factors, such as edema or underlying cutaneous disorders, are recommended. [2] *Staphylococcus aureus* is not known to cause non-purulent cellulitis; in a randomized trial, approximately 5% of patients failed treatment and had a previously unidentified abscess; however, treatment with an anti-staphylococcal agent did not reduce this incidence (JAMA 2017;317:2088); therefore, IV vancomycin is not recommended except for those with inpatient "severe" cellulitis		

Table 2. Necrotizing skin and soft tissue infection guidelines

NECROTIZING SKIN AND SOFT TISSUE INFECTIONS INCLUDING NECROTIZING FASCIITIS	
Common pathogens	● Presence of gas on imaging: typically *Clostridium* species ● Absence of gas on imaging: *Streptococcus pyogenes, Staphylococcus aureus, Aeromonas* (freshwater exposure), or *Vibrio* (saltwater exposure)
Procedure	● Emergently consult surgery for debridement; also consult infectious diseases ● Obtain multiple cultures from the operating room
Empiric treatment options	● Vancomycin IV per pharmacy protocol + cefepime + clindamycin 900mg IV Q8H ● Vancomycin IV per pharmacy protocol + piperacillin-tazobactam + clindamycin 900 mg IV Q8H*
Duration of Antibiotics	● Antibiotics should be continued until no additional debridement is needed and the patient is stable; duration is determined on a case-by-case basis