VANDERBILT UNIVERSITY MEDICAL CENTER

Department of Emergency General Surgery

Practice Management Guidelines: Antimicrobial Therapy

I. **Purpose:** Many patients who present to the Emergency General Surgery service do so for infectious causes. This serves to provide guidance and consistency in antibiotic prescribing for common EGS presenting diagnoses.

II. **Guideline:** Guideline Empiric antimicrobials should be ordered through the adult emergency surgery order panel.

***Pseudomonas aeruginosa* risk factors**	**MRSA Risk factors**	**Fungal risk factors**	**Enterococcal risk factors**
Immunocompromised Culture with pseudomonas in last 6 months Extensive healthcare exposure or broad-spectrum antibiotic exposure in the past 90 days	Prior MRSA infection or colonization Extensive healthcare exposure or broad-spectrum antibiotic exposure in the past 90 days	Critically ill patients with an upper gastrointestinal source Recurrent bowel perforations or anastomotic leak Surgically treated necrotizing pancreatitis	Healthcare-associated IAI with post-op infections Recent exposure to broad-spectrum antimicrobial therapy Known colonization

** If empirically starting MRSA coverage for IAI, placer order for "PCR staph nasal colonization" nasal swab. MRSA nasal screening has high negative predictive value for IAI. If the "PCR staph nasal colonization" swab does not detect MRSA, vancomycin can be discontinued unless there is another indication for vancomycin. Caution in patients that have received intranasal mupirocin administration, as the results will not be accurate.

A. **Acute Appendicitis**
   a. Without Shock
      i. First Line: Ceftriaxone/metronidazole
      ii. Severe PCN allergy: Levofloxacin/metronidazole
   b. Shock/pseudomonal risk
      i. First Line: Piperacillin/Tazobactam
      ii. Severe PCN allergy: Cefepime/Metronidazole/Vancomycin
   c. Duration
      i. Non-perforated: stop postoperatively
      ii. Perforated: 4 days after source control
      iii. No appendectomy: 7 days (Oral Levofloxacin/Metronidazole)

B. **Acute Cholecystitis**
    a. Community-acquired (no shock)
        i. First Line: Ceftriaxone/Metronidazole (only need metronidazole if biliary-enteric anastomosis)
        ii. Severe PCN allergy: Levofloxacin/Metronidazole (only need metronidazole if biliary-enteric anastomosis)
    b. Shock/pseudomonal risk
        i. First Line: Piperacillin/Tazobactam
        ii. Severe PCN allergy: Cefepime/Metronidazole/Vancomycin
    c. Duration
        i. Stop postoperatively if cholecystectomy performed
        ii. 4 days if cholecystostomy tube placed

C. **Secondary Peritonitis:** *(Perforated gastric/duodenal ulcer, Diverticulitis WITH operation/drain (source control), colon perforation)*
    a. Community-acquired or No shock
        i. First Line: Ceftriaxone/Metronidazole
        ii. Severe PCN allergy: Levofloxacin/Metronidazole
    b. Shock/pseudomonal risk
        i. First Line: Piperacillin/Tazobactam
        ii. Severe PCN allergy: Cefepime/Metronidazole/Vancomycin
    c. Duration: 4 days after source control

D. **Uncomplicated Diverticulitis without operation/drain AND hemodynamically normal**
    a. First line: Amoxicillin/Clavulanic Acid or Ceftriaxone/Metronidazole (if need IV)
    b. Severe penicillin allergy: Levaquin/Metronidazole
    c. Duration: 7 days

E. **Necrotizing Soft Tissue Infection**
    a. First Line: Linezolid, Piperacillin/Tazobactam
    b. Severe PCN Allergy: Linezolid, Cefepime, Metronidazole
    c. Duration: Stop once source controlled, hemodynamically normal, and no signs of active infection (typically 5-7 days)

III. References

1. Sawyer RG, Claridge JA, Nathens AB, et al. Trial of Short-Course Antimicrobial Therapy for Intraabdominal Infection. N Engl J Med 2015;372:1996-2005.
2. Lehman A, Santevecchi BA, Maguigan KL, et al. Impact of Empiric Linezolid for Necrotizing Soft Tissue Infections on Duration of Methicillin-Resistant *Staphylococcus aureus*-Active Therapy. Surg Infect (Larchmt). 2022 Apr;23(3):313-317.
3. Mazuski JE, Tessier JM, May AK, et al. The Surgical Infection Society Revised Guidelines on the Management of Intra-Abdominal Infection. Surgical Infections 2017(18)1:1-76.
4. Pappas PG, Kauffman CA, Andes DR, et al. Clinical Practice Guideline for the Management of Candidiasis: 2016 Update by the Infectious Diseases Society of America. Clinical Infectious Diseases. 2015 Dec 16;62(4):e1–e50

5. Solomkin JS, Mazuski JE, Bradley JS, etl al. Diagnosis and Management of Complicated Intra-abdominal Infection in Adults and Children: Guidelines by the Surgical Infection Society and the Infectious Diseases Society of America. Clinical Infectious Diseases 2010; 50:133–64

IV. Authors

Jade Flynn, PharmD, BCPS
Kelly Rumbaugh, PharmD, BCPS, BCCP
Michael C. Smith, MD

September 23, 2025