ANMC Antibiotic Guidelines for Gastrointestinal Infection

High Risk/Severe Criteria	Suspected Pathogens	Cultures
• Albumin <2.5 • Age >70 yo • Immunocompromised state • Severe sepsis/septic shock	Polymicrobial process: Enterobacteriaceae *Enterococcus sp.* Anaerobes (including *Bacteroides sp.*) *Anaerobes are less significant for biliary sources unless bile duct to bowel anastomosis or fistula present	• Routinely obtaining cultures is not recommended for community-acquired infections. • Cultures **SHOULD** be obtained in patients with nosocomial infection or who require operation for prior treatment failure

Antibiotic Selection

	Mild-Moderate Risk	High Risk/Severe	Duration of Therapy

Extra-biliary Source
• Appendicitis
• Diverticulitis
• Bowel perforation with peritonitis
	Preferred therapy:
	• Cefazolin 2gm IV q8hr **PLUS**
	• Metronidazole 500mg IV q8hr
	
	Type I PCN Allergy:
	• Levofloxacin 500mg IV q24hr **PLUS**
	• Metronidazole 500mg IV q8hr
		Preferred therapy:
		• Piperacillin/Tazobactam 3.375gm IV q8hr (extended infusion over 4 hours)
		
		Type I PCN Allergy:
		• Levofloxacin 500mg IV q24hr **PLUS**
		• Metronidazole 500mg IV q8hr
			• Adequate surgical source control achieved*: **4 days**
			• Retained focus of infection
			  ○ **Guided by clinical response**
			  ○ **Consider ID consult**
			• Uncomplicated diverticulitis: **5 days**

Biliary Source
• Cholecystitis
• Cholangitis
	Preferred therapy:
	• Cefazolin 2gm IV q8hr
	
	Type I PCN Allergy:
	• Levofloxacin 500mg IV q24hr
	
	***If bilio-enteric anastomosis present add metronidazole 500mg IV/PO q8h**
		Preferred therapy:
		• Piperacillin/Tazobactam 3.375gm IV q8hr (extended infusion over 4 hours)
		
		Type I PCN Allergy:
		• Levofloxacin 500mg IV q24hr **PLUS**
		• Metronidazole 500mg IV q8hr
			• Uncomplicated: ≤ **24 hours**
			• Non-operative (uncomplicated) management: **5 days**
			• Complicated: **7-14 days**
			  ○ Delayed clinical response
			  ○ Inadequate source control*
			  ○ Consider ID consult

Pediatric Dosing	IV to PO Conversion
• Cefazolin 30 mg/kg/dose IV q8hr • Cephalexin 10 mg/kg/dose PO q6hr • Ciprofloxacin 15 mg/kg/dose PO q12hr • Levofloxacin 10 mg/kg/dose IV q24hr (q12hr if <5 yo) • Metronidazole 10 mg/kg/dose IV/PO q8hr • Piperacillin/Tazobactam 50 mg/kg/dose (piperacillin) IV q6hr *Pediatric abx selection is the same as adults, dosing is provided here for reference.	• Cefazolin 2g IV q8hr→Cephalexin 1g PO TID • Levofloxacin 500mg IV q24hr→Levofloxacin 500mg PO q24hr • Metronidazole 500mg IV q8hr→Metronidazole 500mg PO q8hr Piperacillin/Tazobactam→Depends on clinical scenario; consider antimicrobial pharmacy or infectious diseases consultation

Comments:

- Due to *E.coli* resistance >10%, empiric quinolone use alone is cautioned in high-risk/severe cases
  - ANMC *E.coli* susceptibility for 2016: Cefazolin 95%; Cefoxitin 86%; Ciprofloxacin 84%; Levofloxacin 84%; Cefepime 100%; Piperacillin-Tazobactam 97%
  - Ampicillin-sulbactam is not recommended for use because of high rates of resistance among community-acquired *E. coli* (60% susceptibility for ANMC 2016) and *B. fragilis*
- *Source control as determined by operative surgeon (as defined per IDSA: single procedure or series of procedures that eliminate infectious foci, control factors that promote ongoing infection, and correct or control anastomatic derangements to restore normal physiologic function)
- Empiric coverage of *Enterococcus* or *Candida* is NOT recommended for mild-moderate community-acquired intra-abdominal infections
  - Empiric Enterococcal tx is recommended for health-care associated infections with previous cephalosporin therapy, immunocompromised patients, and those with valvular heart disease or prosthetic intravascular materials.
- Bowel injuries from penetrating, blunt, or iatrogenic trauma repaired w/in 12hr or other intraoperative contamination of the operative field by enteric contents should be treated w/ abx for ≤ 24hrs.
- Use of ursodeoxycholic acid and/or antibiotics for the prevention of biliary stent occlusion or infection is NOT routinely recommended.
- Need for antibiotics in mild, outpatient diverticulitis disease remains controversial
- Aminoglycosides are not recommended for routine use in adults with community acquired intra-abdominal infection because of the availability of less toxic agents demonstrated to be at least equally effective but may be necessary in high risk/severity patients with Type I PCN or Cephalosporin allergy.

Antimicrobial Stewardship Program Approved April 2017

Joint Surgical Infection Society and Infectious Diseases Society of America Guidelines (CID 2010:50); Clinical Practice Guidelines for Antimicrobial Prophylaxis in Surgery (ASHP 2013;70(3)); Trial of short-course antimicrobial therapy for intraabdominal infection (NEJM 2015;372:1996-2005)