

Antimicrobial Surgical Prophylaxis

Guiding Principles

- Prophylactic antibiotics should be given within one hour prior to incision
- Post-operative antibiotics should not be given
- Intra-operative antibiotics should be considered in prolonged surgeries or cases with a large volume of blood loss (see Table 2)

Table 1. Treatment Recommendations

Type of Surgery	First-line regimen	Alternate regimen (anaphylaxis to beta-lactams)	MRSA Colonization
General Surgery			
Laparoscopic cholecystectomy (low risk)	None required		
Laparoscopic cholecystectomy (high risk: age >70, obstructive jaundice, diabetes, acute inflammation)	Cefazolin 2 g IV	Vancomycin 15 mg/kg IV + Gentamicin 5 mg/kg IV	
Biliary/Pancreatic/Liver			
Colorectal Surgery	Cefazolin 2 g IV + Metronidazole 500 mg IV	Gentamicin 5 mg/kg IV + Metronidazole 500 mg IV	Vancomycin 15 mg/kg IV + Gentamicin 5 mg/kg IV + Metronidazole 500 mg IV
Appendectomy			
Gastroduodenal/Esophageal (including bariatric)	Cefazolin 2 g IV	Vancomycin 15 mg/kg IV + Gentamicin 5 mg/kg IV	
Low Risk Anorectal Procedures	None required		
Gynecological & Obstetrics			
C-section (emergent or elective)	Cefazolin 2 g IV	Vancomycin 15 mg/kg IV	
Hysterectomy/Pelvic organ prolapse/Stress incontinence surgery			
Head & Neck			
Breast, Thyroid, parathyroid	Cefazolin 2 g IV	Vancomycin 15 mg/kg IV	
Head & Neck Surgery, involving incision of oral, pharyngeal or nasal mucosa			
Clean	None required		
Clean with prosthesis placement	Cefazolin 2 g IV	Vancomycin 15 mg/kg IV + Metronidazole 500 mg IV	
Clean-contaminated cancer surgery	Cefazolin 2 g IV + Metronidazole 500 mg IV		
Other clean-contaminated procedures with exception of tonsillectomy, and functional endoscopic sinus procedures			
Orthopedic			
Total joint replacement, Hip fracture	Cefazolin 2 g IV	Vancomycin 15 mg/kg IV	
Thoracic/Vascular/Pacemaker			
All procedures (except carotid or brachial)	Cefazolin 2 g IV	Vancomycin 15 mg/kg IV	

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Urologic Surgery ‡			
Lower tract			
Cystoscopy with manipulation	Cefazolin 2 g IV	Gentamicin 5 mg/kg IV	N/A
Transrectal ultrasound with prostate biopsy	Fosfomycin 3 g x 1 dose		
Upper Tract			
Shock wave lithotripsy	Cefazolin 2 g IV	Gentamicin 5 mg/kg IV	N/A
Ureteroscopy		Gentamicin 5 mg/kg IV	
Open or laparoscopic			
Not entering the GU/GI tract	Cefazolin 2 g IV	Vancomycin 15 mg/kg IV	N/A
Entering the GU tract		Vancomycin 15 mg/kg IV + Gentamicin 5 mg/kg IV	
Entering the GU and GI tract	Cefazolin 2 g IV + Metronidazole 500 mg IV	Vancomycin 15 mg/kg IV + Gentamicin 5 mg/kg IV + Metronidazole 500 mg IV	

Intra-operative antibiotic re-dosing

In cases of prolonged surgical time (> 4-6 hours), certain antimicrobials require intra-operative re-dosing

Table 2. Timing of intra-operative antibiotics

Antimicrobial	Re-dosing Interval (hr)	Recommended dose
Cefazolin IV	4*	1 g
Clindamycin IV	4-6	900 mg
Metronidazole	8	500 mg
Vancomycin	8*	15 mg/kg

* Patients with renal dysfunction may not require intra-operative re-dosing due to prolonged drug half-life due to decreased renal clearance