

VA Greater Los Angeles Healthcare System Antimicrobial Prophylaxis of Surgical Site Infections

BETA-LACTAM ALLERGY CONSIDERATIONS AND CEFAZOLIN

- The R-group side chain of the β -lactam ring is primarily responsible for allergic cross-reactivity.
- Cefazolin does not share a similar R-group side chain with other β -lactams (including penicillin, amoxicillin, etc.)
- *In the absence of known anaphylaxis or otherwise severe reaction (e.g., Stevens-Johnson syndrome) to a β -lactam or cephalosporin, cefazolin can be safely administered.*

Procedure Type		Antibiotic dose ^{1,2}	B-lactam Allergy ^{2,3}
Cardiac	Prosthetic valve, CABG, Implantable devices	Vancomycin 15mg/kg + Cefazolin 2 grams for <120 kg	Vancomycin 15mg/kg
Thoracic (non- cardiac)	Lobectomy, pneumonectomy , VATS	Cefazolin 2 grams for <120 kg	Clindamycin 900mg + gentamicin 5mg/kg
Gastrointestinal	Esophageal	Cefazolin 2 grams for <120 kg	Clindamycin 900mg + gentamicin 5mg/kg
	Gastroduodenal (entry into lumen)	Cefazolin 2 grams for <120 kg	Clindamycin 900mg + gentamicin 5mg/kg
	Small intestine non-obstructive	Cefazolin 2 grams for <120 kg	Clindamycin 900mg + gentamicin 5mg/kg
	Inguinal Hernia	Cefazolin 2 grams for <120 kg	Clindamycin 900mg + gentamicin 5mg/kg
	Colorectal	Cefotetan 2 grams	Clindamycin 900mg + gentamicin 5mg/kg
	Whipple’s	Cefotetan 2 grams	Clindamycin 900mg + gentamicin 5mg/kg
	Penetrating abdominal trauma	Cefotetan 2 grams	Clindamycin 900mg + gentamicin 5mg/kg
	Small intestine obstructed	Cefotetan 2 grams	Clindamycin 900mg + gentamicin 5mg/kg
	Appendectomy (uncomplicated)	Cefotetan 2 grams	Clindamycin 900mg + gentamicin 5mg/kg
Biliary Tract	Cholecystectomy (elective laparoscopic uninfected)	NONE	NONE
	Cholecystectomy (Open)	Cefotetan 2 grams	Clindamycin 900mg + gentamicin 5mg/kg
	Biliary tract Laparoscopic High Risk	Cefotetan 2 grams	Clindamycin 900mg + gentamicin 5mg/kg
	ERCP with obstruction,	Cefotetan 2 grams	Clindamycin 900mg + gentamicin 5mg/kg
Liver	Transplant or resection	Cefotetan 2 grams	Clindamycin 900mg + gentamicin 5mg/kg
Head and Neck	Clean	NONE	NONE
	Clean with placement of prosthesis (not tympanostomy tube)	Cefazolin 2 grams for <120 kg	Vancomycin 15mg/kg
	Clean-contaminated cancer surgery	Cefazolin 2 grams for <120 kg + metronidazole 500mg IV	Clindamycin 900mg + gentamicin 5mg/kg
	Other clean-contaminated	Cefazolin 2 grams for <120 kg + metronidazole 500mg IV	Clindamycin 900mg + gentamicin 5mg/kg
Neurosurgery	Elective Craniotomy and CSF shunting procedures	Vancomycin 15mg/kg + Cefazolin 2 grams for <120 kg	Vancomycin 15mg/kg
	Implantation of intrathecal pumps or reservoirs	Vancomycin 15mg/kg + Cefazolin 2 grams for <120 kg	
	Spinal procedures with and without implants	Vancomycin 15mg/kg + Cefazolin 2 grams for <120 kg	
Plastic Surgery	Free flap procedures	Cefazolin 2 grams for <120 kg	Vancomycin 15mg/kg
	Mastectomy	Cefazolin 2 grams for <120 kg	Clindamycin 900mg + gentamicin 5mg/kg

Vascular Surgery	Vascular implants (e.g., arteriovenous grafts, endovascular stents)	Vancomycin 15mg/kg + Cefazolin 2 grams for <120 kg	Vancomycin 15mg/kg
	All others	Cefazolin 2 grams for <120 kg	Vancomycin 15mg/kg
Gynecology	Vaginal, radical or complex hysterectomy, laparotomy, pelvic exenteration (cefotetan if bowel is involved)	Cefazolin 2 grams for <120 kg	Clindamycin 900mg + gentamicin 5mg/kg
	C-Section	Cefazolin 2 grams for <120 kg	Clindamycin 900mg + gentamicin 5mg/kg
Urology	Transrectal prostate biopsy: See GLA Protocol		
	Radical retropubic prostatectomy	Cefazolin 2 grams for <120 kg	Clindamycin 900mg + gentamicin 5mg/kg
	Bladder procedures	Cefazolin 2 grams for <120 kg	Clindamycin 900mg + gentamicin 5mg/kg
	Lower tract instrumentation with mucosal trauma	Cefazolin 2 grams for <120 kg ⁴	Gentamicin 5mg/kg
	Radical cystoprostatectomy	Cefazolin 2 grams for <120 kg	Clindamycin 900mg + gentamicin 5mg/kg
	Anterior exenteration	Cefotetan 2 grams	Clindamycin 900mg + gentamicin 5mg/kg
	Rectocele repair	Cefotetan 2 grams	Clindamycin 900mg + gentamicin 5mg/kg
Orthopedic Surgery	Clean surgery of hand knee or foot not involving implant	NONE	NONE
	Spinal procedures with and without implants	Vancomycin 15mg/kg + Cefazolin 2 grams for <120 kg	Vancomycin 15mg/kg
	Arthroplasty		
	ORIF	Cefazolin 2 grams for <120kg	
	Hip fracture repair		
	Lower Limb amputation	Cefazolin 2 grams for <120kg	Depends on decision of preferred regimen

¹Cefazolin 3 grams should be used for patients >120kg

²Vancomycin 15mg/kg (Max 2 grams) using actual body weight; vancomycin administration should begin within 2 hours prior to incision due to the longer infusion time to ensure adequate tissue levels at the time of incision.

³Gentamicin 5mg/kg using actual body weight. If the patient’s actual weight is >20% above ideal body weight (IBW), then use Adjusted Body Weight (AdjBW) = IBW + 0.4(actual weight – IBW).

⁴Or guided by pre-procedural urine culture

NOTES:

- Infusion of antibiotics (except vancomycin) should be administered within 60 minutes prior to the incision or instrumentation
- Infusions must be completed prior to incision and prior to application of a tourniquet
- Consider redosing of antibiotics with intraoperative blood loss >1.5 L or for surgeries lasting longer than 3 hours
- In addition to the prophylactic regimen, patients receiving antimicrobials for treatment of infection prior to surgery should receive an additional dose of these antibiotics in the 60 min prior to incision.
- In clean and clean-contaminated procedures, do not administer additional prophylactic antimicrobial doses after the surgical incision is closed in the OR, even in the presence of a drain (strong recommendation; high-quality evidence, *JAMA Surgery* 2017)
- If antimicrobials are continued post-operatively, they should be discontinued after 24 hours, even in the presence of a drain (SCIP, ASPH 2013, Joint Commission)

Antimicrobial Administration, Intraoperative Redosing, and Weight Adjustment Recommendations

*Intraoperative redosing interval is measured from start of the initial infusion

Antimicrobial	Usual Dose (IV)	Infusion time	Intraoperative redosing *	Adjustment for weight >120 kg
Cefazolin	2 grams	IV Push or 30 min infusion	4 hours	3 grams
Cefotetan	2 grams	30 min	6 hours	No Change
Gentamicin	5 mg/kg	30 min	N/A	No Change
Clindamycin	900mg	30 min	6 hours	No Change
Metronidazole	500mg	60 min	N/A	No Change
Vancomycin	15mg/kg (Max 2 grams)	60 min	N/A	15mg/kg (Max 2 grams)