Prophylactic Antibiotics For Surgery

Introduction:

These antibiotics represent reasonable but not exclusive choices for surgical prophylaxis

Recommendations:

- Not all procedures require antibiotic prophylaxis.
- Antibiotics must be started within 60 minutes before incision (120 minutes for vancomycin or ciprofloxacin)
- Intraoperative redosing may be required for long cases (>2 hrs); see table.
- Antibiotics during the operation can prevent infections. Extending antibiotics beyond 24 hours after surgery is of no benefit. Exception is heart transplant and ventricular assist device prophyalxis.
- Alternate regimen is for patients allergic or intolerant of the primary regimen.
- These antibiotics represent reasonable but not exclusive choices for surgical prophylaxis. Other antibiotic choices should be predicated by current or prior antibiotic therapies.
- These guidelines comply with all recommendations for surgical prophylaxis in the Surgical Care Improvement Project (SCIP) quality measures and are reviewed as these are updated.

See table below

Prophylaxis Type	Recommended Antibiotic Regimen	Alternative Antibiotic Regimen
A	Cefazolin 2 IV (redose 2-5h) (< 50kg 1g IV)	**Alternative 1:** Vancomycin IV For ≤ 80kg: 1g IV infused over 90 min For >80 kg: 1.5 g IV infused over 2 hrs (redoes 6-12h)
B	**Option 1:** Cefoxitin 2g IV (redoes 2-3 h) **Option 2:** Cefazolin 2g IV (redose 2-5 h) -PLUS – Metronidazole 500mg IV (redoes 6-8 h) **Option 3:** Ampicillin/sulbactam 3g IV (redoes 2-4 h)	**Alternative 1:** Clindamycin 600mg-900mg IV **and** one of: - Gentamicin 2mg/kg IV (redose 4-6 h) - Ciprofloxacin 500mg po/400mg IV over 1 hr (redose 4-10 h) - Aztreonam 2g IV (redose 3-5h) **Alternative 2:** Metronidazole 500mg IV (redose 6-8 h) **and** one of: - Gentamicin 2mg/kg IV (redose 4-6 h) - Ciprofloxacin 500mg po/400mg IV over 1 hr (redose 4-10 h)
C	Ciprofloxacin 500mg po/400mg IV over 1 hr (redose 4-10 h)	Gentamicin 2mg/kg IV (redose 4-6 h)

Guidelines are intended to be flexible. They serve as reference points or recommendations, not rigid criteria. Guidelines should be followed in most cases, but there is an understanding that, depending on the patient, the setting, the circumstances, or other factors, guidelines can and should be tailored to fit individual needs.

Type of Surgery	Recommended Antibiotic Regimen	Notes
Gastrointestinal Procedures:		
Esophageal, gastroduodenal, biliary tract, cholecystectomy – high risk*	A	Not neede for elective cholecystectomy; Alternative: Clindamycin 900mg IV plus Gentamicin 2mg/kg IV
Colorectal	B AND mechanical bowel prep (MBP) plus oral antibiotic regimen***	24 hours of coverage is enough. Alternative: Ertapenem 1g IV (redose 8h)**; Oral antibiotic regimen: Metronidazole 1g po PLUS Neomycin sulfate 1g po, give 3 doses over 10 hrs after MBP on the day before surgery or within 24 hrs prior to surgery.
Appendectomy	B	If ruptured, treat as infected
Head and Neck procedures (if clean-contaminated)	A or B	Some prefer clindamycin and gentamicin combination
Neurosurgery Laminectomy, craniotomy, spinal fusion, VP shunt	A	Optional for laminectomy
Obstetrics and Gynecology		
Cesarean section	A	Prior to skin incision, single dose
Abdominal/vaginal hysterectomy	B	Single dose
Orthopedic		
Total joint replacement	A	Alternative: vancomycin
Other clean orthopedic surgery	A	Not needed for arthoscopy
General and Plastic Surgery		
Implants and complex reconstructions, mesh	A	Not required in most cases
Urological Procedures		
TURP, resection of bladder tumor	C	High risk only; treat bacteriuria
Radical prostatectomy	A	

Vascular Surgery		
Vascular	A	Alternative: vancomycin IV
Dialysis access procedures	A	Alternative: vancomycin IV
Cardiothoracic******		
Thoracotomy	A	Single dose

*High risk: > 70 years old, acute cholecystitis, obstructive jaundice or common duct stones

**Ertapenem meets CMS guidelines for colorectal surgery ONLY

*** In most patients, mechanical bowel prep plus oral antibiotics should be given in addition to IV prophylaxis.

**** Vancomycin for true penicillin allergy; history of MRSA, high risk for MRSA (ie hemodialysis, chronic care facility)

References:

Bratzler, et al. Clinical Practice Guidelines for antimicrobial prophyalxis in surgery. Am J Health-Syst Pharm 2013; 70: 195-283.

Highland Hospital Clinical Practice Guideline – Prophylactic Antibiotics for surgery (reviewed 8/13)

Approved:

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