Right Prophylactic use of Antibiotics - Cardiology Procedures

- Cardiac procedures do not require anti-biotics prophylaxis for IE.
- Antibiotics prophylaxis required to prevent SSI including mediastinitis and thoracic wound infection in cardiac surgery
- Routine cardiac catheterization and angioplasty do not require any anti-microbial prophylaxis.

Pre-Operative Dose Timing:
Within 60 minutes before the surgical Incision
Redosing:
If the duration of the procedure exceeds two half-lives of the antimicrobial or there is excessive blood loss (i.e. >1500 mL)
Postoperative: Less than 24 hours irrespective of whether indwelling drains and intravascular catheters are removed

1. Dajani AS et al. Prevention of bacterial endocarditis: recommendations by the American Heart Association. Circulation. 1997 Jul 1;96(1):358-66.
2. Bratzler DW et al. Clinical practice guidelines for antimicrobial prophylaxis in surgery. Surgical infections. 2013 Feb 1;14(1):73-156.

Right Prophylactic use of Antibiotics - Cardiology Procedures

Type Of Procedure	Rationale	Recommended Agent	Alternative Agent In Patient with Beta- Lactam Allergy
Coronary Artery Bypass	To Prevent SSI	Cefazoline or Cefuroxime	Clindamycin or Vancomycin
Cardiac Device Insertion Procedure (Pacemaker Implantation)		Cefazoline or Cefuroxime	Clindamycin or Vancomycin
Ventricular Assist Device		Cefazoline or Cefuroxime	Clindamycin or Vancomycin
Congenital heart repair procedures requiring an open sternum postoperatively		Cefazoline	Vancomycin

Recommended Dose: Cefazoline- 2 gm, Clindamycin- 900 mg, Cefuroxime- 1.5 gm, Vancomycin- 15 mg/kg

Bratzler DW et al. Clinical practice guidelines for antimicrobial prophylaxis in surgery. Surgical infections. 2013 Feb 1;14(1):73-156

Right Prophylactic use of Antibiotics - GI Endoscopic Procedures

Scenario for Prophylaxis	Rationale	Antibiotics	Dose/Route
1.Patients with valvular heart disease, valve replacement, and/or surgically constructed systemic-pulmonary shunt or conduit, or vascular graft	Prevention of infective endocarditis or conduit/graft infection	Not indicated	Not indicated
2. ERCP			
a. ongoing cholangitis or sepsis anywhere	Prevention of procedure related bacteremia	Based on culture reports or ongoing antibiotics	
b. Bilary obstruction/cbd stones and/or straightforward stent exchange	Prevention of cholangitis	Not indicated unless biliary decompression not achieved. If so then like cholangitis	
c. ERCP when complete biliary obstruction unlikely to resolve(PSC, hilar CCA)	Prevention of cholangitis	Ciprofloxacin	750mg orally 60-90mins before procedure 20mg/kg iv over 1 hr
d. Biliary complications following LT	Prevention of cholangitis	As c. plus vancomycin	As c.
e. Communicating cyst or pseudocyst	Prevention of cholangitis	As c.	
3. Variceal bleeding	Prevention of bacterial peritonitis	Ceftriaxone	1g iv OD for 5 days

Allison MC, et al. Antibiotic prophylaxis in gastrointestinal endoscopy: BSG guidelines.Gut 2009; 58: 869-80

Right Prophylactic use of Antibiotics - GI Endoscopic Procedures

Scenario for Prophylaxis	Rationale	Antibiotics	Dose/Route
4. Percutaneous endoscopic gastrostomy(PEG)	Prevention of peristomal infection	Coamoxiclav or Cefuroxime	1.2g iv just before procedure 750mg iv just before procedure
5. Endoscopic ultrasound guided intervention: a. FNA solid lesions b. FNA of cystic lesions in or near pancreas, or drainage of cyst	 Prevention of local infection Prevention of cyst infection	 Not indicated Co-amoxiclav or Ciprofloxacin	 --------- 1.2g iv single dose 750mg oral one dose
6. Profound immunocompromise(eg. neutropenia <500/cumm or hematological malignancy	Prevention of procedure-related bacteremia	Only indicated in patients with high risk of bacteremia (eg. Sclerotherapy, dilatation, ERCP with obstructed system)	Discuss with hematologist and clinical microbiologist

Allison MC, et al. Antibiotic prophylaxis in gastrointestinal endoscopy: BSG guidelines.Gut 2009; 58: 869-80

Right Procedural Prophylaxis – General Surgery

Procedure	Likely organism	Recommended antibiotic	dosage
Oesophageal surgery	Gram positive cocci and gram negative bacilli	Cefazolin	1 to 2g intravenously
Gastroduodenal surgery	Gram positive cocci and gram negative bacilli	Cefazolin	1 to 2g intravenously
Colorectal surgery	gram negative bacilli, anaerobes	Oral: neomycin and erythromycin base	1g orally
		Parenteral: cefotetan or cefoxitin	1-2g intravenously
Appendicectomy	gram negative bacilli, anaerobes	Cefotetan or cefoxitin	1-2 g i.v.
Bile duct surgery	gram negative bacilli	Cefazolin.	1-2 g i.v.

Crader MF, et al. Preoperative Antibiotic Prophylaxis. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 Jan.

Right Procedural Prophylaxis – Obstetrics

PROCEDURE	ANTIBIOTICS	DOSE (single dose within 1 hour before procedure)
Caesarean section	Cephazolin	1 gm (adult 80 kg or more; 2gm) IV
Termination of pregnancy (surgical)	Metronidazole Doxycycline	500mg IV 400 mg PO
Manual Removal of Placenta	Metronidazole Cephazolin	500mg IV 1gm IV
3rd and 4th degree vaginal tears	Metronidazole Cephazolin	500mg IV 1gm IV

- If allergic to cephalosporin/penicillin, Clindamycin 600 mg can be given.
- There is insufficient evidence regarding antibiotic prophylaxis in cases of cervical cerclage.
- Administration of antibiotics solely to prevent endocarditis is **not recommended** for patients who undergo a genitourinary procedure.

- If a procedure is lengthy (i.e., >3 hours), or if estimated blood loss is >1500 mL, an additional dose of prophylactic may be given 3-4 hours after the initial dose.
- In patients with morbid obesity (BMI > 35 kg/m2), doubling of antibiotic dose may be considered.

Committee on Practice Bulletins-Obstetrics. ACOG Practice Bulletin No. 199: Use of Prophylactic Antibiotics in Labour and Delivery.

Right Procedural Prophylaxis - Gynaecology

Procedure	Antibiotic	Dose (Single dose within 1 hour before procedure)
Hysterectomy Vaginal Abdominal Laparoscopic Robotic	Cefazolin	2 grams IV
Uterine evacuation (Suction D&C or D&E)	Doxycycline	200 mg orally
Colporrhaphy	Cefazolin	2 grams IV
Vaginal sling placement	Cefazolin	2 grams IV
Laparotomy without entry into bowel/vagina	Cefazolin	2 grams IV

ACOG Practice Bulletin No. 195: Prevention of Infection After Gynecologic Procedures. Obstet Gynecol. 2018 Jun;131(6):e172-e189. doi: 10.1097/AOG.0000000000002670. PMID: 29794678.

Right Procedural Prophylaxis - Gynaecology

- If allergic to cephalosporin/penicillin, Clindamycin 600 mg IV and Erythromycin 500 mg IV can be given.
- Antibiotic prophylaxis is **not recommended** for:

❑ Cervical tissue excision procedures like LEEP, biopsy
❑ Cystoscopy
❑ Endometrial biopsy
❑ Laparoscopic procedures without entry into bowel/vagina
❑ Hysteroscopy
❑ Intrauterine device insertion
❑ Oocyte retrieval

- Antibiotic prophylaxis is **not recommended** for hysterosalpingogram or chromopertubation unless there is a history of PID.
- Administration of antibiotics solely to prevent endocarditis is **not recommended** for patients who undergo a genitourinary procedure.

- If a procedure is lengthy (i.e., >3 hours), or if estimated blood loss is >1500 mL, an additional dose of prophylactic may be given 3-4 hours after the initial dose.
- In patients with morbid obesity (BMI > 35 kg/m2), doubling of antibiotic dose may be considered.

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