

Intervention Radiology Antimicrobial Prophylaxis - Full Guideline

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1. Introduction

If antimicrobial prophylaxis is indicated, a **single dose** of antibiotic is generally adequate unless accessing blocked viscus, where antibiotic therapy should be continued until satisfactory drainage of the viscus is achieved, or for transrectal prostate biopsy. Parenteral antibiotics should be administered just as the procedure is about to begin (or within 1 hour before the procedure) in order to achieve a bactericidal concentration in the tissues before bacterial contamination occurs. Scrupulous topical disinfection with chlorhexidine in alcohol is mandatory prior to any percutaneous intervention. Dosage adjustment for patients with renal impairment is not necessary for single dose prophylaxis with the possible exception of gentamicin. In the presence of acute kidney injury or concern over *potential* acute kidney injury with gentamicin, contact the antimicrobial pharmacist or consultant microbiologist for advice. Consider prescribing antibiotic prophylaxis for patients who are profoundly immunocompromised (e.g. those with neutropenia $<0.5 \times 10^9/L$ or advanced haematological malignancy) undergoing **any** interventional radiology procedure. All patients must have their “alert screen” (infection risk) checked before prescribing. This will alert prescribers as to the MRSA status of the patient as well as the risk of other multi-resistant organisms which may require different antimicrobial prophylaxis.

2. Antibiotic dosing table

Antibiotic	Dose	Administration
Co-amoxiclav IV	1.2g	Slow intravenous bolus
Gentamicin IV	3mg/kg up to a maximum dose of 300mg (round doses to the nearest 4mg) Check previous charts to ensure patient has not recently received a dose of gentamicin	Doses up to 160mg can be given as a bolus over 3-5 mins. Doses >160mg to be added to 100ml sodium chloride 0.9% and infused over 30 mins
Metronidazole IV	500mg	Intravenous infusion over 20 mins
Teicoplanin IV	6mg/kg rounded up to the nearest 200mg. Max 800mg	Intravenous infusion over 30 mins to reduce the risk of infusion related reactions
Cefuroxime IV	750mg	Slow intravenous bolus

3. Intervention radiology - antibiotic prophylaxis recommendations

	First line	Second line	Current or previous MRSA carriage
Percutaneous biliary procedures Patients treated with appropriate antibiotics for biliary sepsis at the time of prophylaxis do not usually require additional prophylactic antibiotics (but check when the last dose was given)	Co-amoxiclav	Penicillin allergy: Gentamicin plus metronidazole	ADD teicoplanin to the regimens
Percutaneous abdominal/pelvic abscess drainage Patients should already be receiving treatment with appropriate antibiotics.	<ul style="list-style-type: none"> Review what antimicrobial therapy the patient is currently prescribed and check when the last dose was given. If patient is currently on regular co-amoxiclav or piperacillin/tazobactam and the last dose was given within 2 hours prior to the procedure, no extra antibiotic dose is required prior to the radiological procedure. 		
Radiologically Inserted Gastrostomy (RIG) insertion Routine antibiotic prophylaxis required for all patients if pull-through method is performed.	Co-amoxiclav	If non-immediate without systemic involvement penicillin allergy: Cefuroxime If immediate rapidly evolving or non-immediate with systemic involvement penicillin allergy: Teicoplanin plus gentamicin	ADD teicoplanin to the regimens
Rectal stenting	Co-amoxiclav	Penicillin allergy: Gentamicin plus metronidazole	ADD teicoplanin to the regimens
Oesophageal stenting	Antibiotic prophylaxis not routinely required		

Percutaneous nephrostomy or ureteric stenting Routine antibiotic prophylaxis required for all patients (assuming they are not already being treated with antibiotics)	Gentamicin	If no IV access: Ciprofloxacin 750mg orally 1 hour prior to procedure	ADD teicoplanin to the regimens
	Check previous urine cultures and ensure all pathogens identified are covered		
TRUS biopsy	Ciprofloxacin 750mg orally 1 hour prior to procedure		
Tunnelled central venous access	Routine antibiotic prophylaxis not required unless current or previous MRSA carriage		Teicoplanin
Percutaneous vascular procedures			
Angiography	Antibiotic prophylaxis not routinely required Consider antibiotic prophylaxis if repeated puncture of same site or angiography followed by surgery (see stent placement)		
Angioplasty	Antibiotic prophylaxis not routinely required		
Arterial procedures where there is puncture of a graft or patch	Teicoplanin		
Stent placement Antibiotic prophylaxis not routinely required. When there is a higher risk of infection (e.g. reintervention within 7 days, prolonged indwelling arterial sheath, presence of other infected implants, prolonged duration of procedure or patient is immunocompromised) then antibiotic prophylaxis may be given.	Teicoplanin IV infusion		
Endograft	Teicoplanin IV infusion		
Thrombolysis	Antibiotic prophylaxis not routinely required		
Transjugular Intrahepatic Portosystemic Shunt (TIPSS) creation	Co-amoxiclav 1.2G IV	If no IV access or allergic to penicillin Ciprofloxacin 750mg oral 1-2 hours prior to procedure	ADD teicoplanin to regimens

If you require advice for a specific patient, contact the antimicrobial pharmacist or the on-call consultant microbiologist

4. References

- Adult and Paediatric Antibiotic Prophylaxis during Vascular and IR Procedures: A Society of Interventional Radiology Practice Parameter Update Endorsed by the Cardiovascular and Interventional Radiological Society of Europe and the Canadian Association for Interventional Radiology
- Norfolk and Norwich University Hospitals - Trust Guideline for the Management of: Antibiotic Prophylaxis in adults undergoing procedures in Interventional Radiology
- NHS Greater Glasgow and Clyde - Antibiotic prophylaxis interventional radiology procedures
- Current routines for antibiotic prophylaxis prior to transrectal prostate biopsy: a national survey to all urology clinics in Sweden

5. Documentation Controls

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	2	December 2023	Kayleigh Lehal, Osama Ahmed	<ul style="list-style-type: none"> - Reformatted - Amendment to TRUS biopsy guidelines to single dose ciprofloxacin prior to procedure. - Amendment to antibiotic choices for RIG insertion with penicillin allergy. - Revision of teicoplanin dosing. - Revision of gentamicin dosing.
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