

Orthopaedic (Joint Replacement) Surgical Antibiotic Prophylaxis Guidelines

PRE-OPERATIVE CONSIDERATIONS

Pre-existing infections (known or suspected) – if present, use appropriate treatment regimen instead of prophylactic regimen for procedure. Doses should be scheduled to allow for re-dosing just prior to skin incision.

Indwelling urinary catheter – Prophylactic antibiotics are NOT required for insertion or removal of a urinary catheter unless a UTI is proven. All patients should be screened for UTI prior to surgery and treated if appropriate

Patients with a history of MRSA colonisation or infection

ADD

Vancomycin 1g IV infused over 100 minutes or **1.5g IV** for patients > 80 kg infused over 150 minutes. The infusion should be timed to end ≤ 30 minutes before incision (see Drug Administration and Timing below).

PROPHYLAXIS REGIMEN

Procedures	First line regimen	Alternative (immediate type or severe penicillin or cephalosporin hypersensitivity)
Primary Total Hip Replacement (THR) or Total Knee Replacement (TKR)	<p>Cefazolin 2g IV (3g if >120kg) bolus over 5 minutes given 30 minutes before incision, then 8-hourly for up to 48 hours Depending on individual surgeon's preference gentamicin may be added:</p> <p>Gentamicin* 3mg/kg IV bolus over 5 minutes given 30 minutes before incision, then a second dose at 24 hours*</p>	<p>Vancomycin 1g IV infused over 100 minutes before incision, (1.5g IV for patients > 80 kg infused over 150 minutes). Time the infusion to end ≤ 30 minutes before incision. Give a second dose 12 hours post-operatively and a third dose 24 hours post-operatively*</p> <p>Depending on individual surgeon's preference gentamicin may be added:</p> <p>Gentamicin* 3mg/kg IV bolus over 5 minutes given 30 minutes before incision, then a second dose at 24 hours</p>
	<p>* If renal function is normal i.e. eGFR >40mL/min. If impaired renal function, contact Infectious Diseases team or AMS pharmacist prior to OT. For gentamicin, use total body weight if not obese and use adjusted body weight if obese as per the Gentamicin Dosing and Monitoring Guidelines on the Metro South Antimicrobials web page</p>	
Revision Total Hip Replacement (THR) or Total Knee Replacement (TKR)	<p><i>If infection is suspected, antibiotics should be withheld until adequate specimens are taken (at least five biopsies by Oxford Method)</i></p>	
	<p>Cefazolin 2g IV (3g if >120kg) bolus over 5 minutes given 30 minutes before incision, then 8-hourly for 48 hours Depending on individual surgeon's preference gentamicin may be added:</p> <p>Gentamicin* 3mg/kg IV bolus over 5 minutes given 30 minutes before incision, then a second dose at 24 hours</p>	<p>Vancomycin 1g IV infused over 100 minutes before incision, (1.5g IV for patients > 80 kg infused over 150 minutes). Time the infusion to end ≤ 30 minutes before incision. Give a second dose 12 hours post-operatively and a third dose 24 hours post-operatively*</p> <p>Depending on individual surgeon's preference gentamicin may be added: Gentamicin* 3mg/kg IV bolus over 5 minutes given 30 minutes before incision, then a second dose at 24 hours</p>
	<p>* If renal function is normal i.e. eGFR >40mL/min. If impaired renal function, contact Infectious Diseases team or AMS pharmacist prior to OT. For gentamicin, use total body weight if not obese and use adjusted body weight if obese as per the Gentamicin Dosing and Monitoring Guidelines on the Metro South Antimicrobials web page</p>	
Shoulder Replacement	<p>Cefazolin 2g IV (3g if >120kg) bolus over 5 minutes given 30 minutes before incision, then 8-hourly for 24 hours</p>	<p>Vancomycin 1g IV infused over 100 minutes before incision, (1.5g IV for patients > 80 kg infused over 150 minutes). Time the infusion to end ≤ 30 minutes before incision.</p> <p>Depending on individual surgeon's preference gentamicin may be added:</p>

Gentamicin* 3mg/kg IV (single dose only) bolus over 5 minutes given 30 minutes before incision

* If renal function is normal i.e. eGFR >40mL/min. If impaired renal function, contact Infectious Diseases team or AMS pharmacist prior to OT. For gentamicin, use total body weight if not obese and use adjusted body weight if obese as per the Gentamicin Dosing and Monitoring Guidelines on the Metro South Antimicrobials web page

DRUG ADMINISTRATION AND TIMING

Drug administration

- Slow IV bolus – should be given \leq 60 minutes before skin incision (ideally at 30 minutes). Administration after skin incision or > 60 minutes before incision reduces effectiveness
- IV infusion – should be timed to end \leq 30 minutes before skin incision

DURATION OF PROPHYLAXIS

Extended prophylaxis is not recommended. A second dose should be given if the procedure is longer than two half-lives of the agent used (e.g. 4 hours for cefazolin). Continuing antibiotic administration is not appropriate unless infection is confirmed or suspected – modify antibiotic regimen appropriately according to treatment guidelines.

RESOURCES

Metro South Antimicrobials web page available at: <http://metrosouth.health.qld.gov.au/clinician-resources/antimicrobial-prescribing-guidelines#general-information> for Surgical Antibiotic Prophylaxis Guidelines and Vancomycin and Gentamicin Dosing and Monitoring Guidelines.

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