

PACIFIC ISLANDS ORTHOPAEDIC ASSOCIATION

ANTIBIOTIC USE GUIDELINES

Version 2 (2017)



DEVELOPED AT THE INFECTION MODULE

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DEVELOPED BY PIOA TRAINEES

WITH TECHNICAL SUPERVISION AND GUIDANCE BY DR NICOLA TOWNELL, DR NORA RENZ AND DR PAUL CHAPMAN

The aim of this guideline is to assist in antimicrobial prescribing - please consider patient circumstances before prescribing

Warning

Do not use penicillins or cephalosporins in patients with immediate penicillin hypersensitivity (penicillin allergy comprising specifically of anaphylaxis or angioedema or urticaria).

Prophylaxis

- Indications: internal fixation, prosthetic material insertion, limb amputation
- Patients should wash their entire body with soap the morning of surgery.

Orthopaedic Surgery	Antibiotic	Adult dose.	Paediatric dose. <40 kg, not to exceed adult dose	Duration.
1st line	cephazolin	wt <120 kg 2g IV wt > 120kg 3g IV	50 mg/kg IV	SINGLE DOSE PREFERRED. UP TO 24 HOURS FOR COMPLICATED SURGERY
2nd line	(flu)cloxacillin	2g IV	50mg/kg IV	
Immediate penicillin hypersensitivity	vancomycin	Infusion - 1 hour before OT 30mg/kg IV	Infusion - 1-2 hour (s) before OT 30mg/kg IV	
If patient known to be colonised with MRSA	ADD vancomycin			
If ischemic limb amputation				
1st line	ADD metronidazole	500mg IV tds	15mg/kg IV bd	24 hours
2 nd line	ADD benzylpenicillin	2.4g IV qid	60mg/kg Q4h	

Redosing is indicated:

- if surgery duration is longer than 3 hours for beta-lactams antibiotic
- if intraoperative blood loss exceeds 2000ml for every antibiotic

Pre-emptive treatment

Compound fracture	Antibiotic	Adult dose.	Paediatric dose. <40 kg, Not to exceed adult dose	Duration
1st line	amoxicillin/clavulanate	1.2g qid IV	30mg/kg tds IV	Pre-emptive antibiotic therapy - 5 days IV. If patient is planned to go home prior to completion, switch to oral antibiotic therapy on discharge to complete therapy
2nd line	cephazolin/cefuroxime & metronidazole	2g IV/1.5gtds IV 400mg bd PO	50 mg/kg tds IV 15mg/kg bd PO	
3rd line	cloxacillin& metronidazole	2g qid IV 400mg bd PO	50 mg/kg qid IV 15mg/kg bd PO	
Immediate penicillin hypersensitivity only	cotrimoxazole & metronidazole	960mg tds IV 400mg bd PO	25mg/kg bd IV 15mg/kg bd PO	
IF water related injury	ADD ciprofloxacin	750mg bd PO	15mg/kg bd PO	
Tetanus prophylaxis indicated if last vaccine >5 years or less than 3 prior vaccines				

Pre-emptive treatment

Bite wound- animals/humans	Antibiotic	Adult dose.	Paediatric dose. <40 kg, Not to exceed adult dose	Duration.
1st line	amoxicillin/clavulanate	625mg tds PO/ 1.2g tds IV	20mg tds PO/ 30mg tds IV	5 days
2 nd line or penicillin allergy	cotrimoxazole400/80 and metronidazole OR clindamycin and ciprofloxacin	2 tabs tds PO 400mg bd PO 450mg tds PO 750mg bd PO	25mg/kg bd PO(>2 months of age) 15mg/kg bd PO 10mg/kg tds 15mg/kg bd PO	
IF water related	ADD ciprofloxacin	750mg bd PO	15mg/kg bd PO	
Tetanus prophylaxis indicated if last vaccine >5 years or less than 3 prior vaccines				
Contaminated wounds				
1st line	amoxicillin/clavulanate	625mg PO/tds 1.2g tds IV	20mg tds PO/ 30mg tds IV	5 days
2nd line	cephalexin/cephazolin or cefuroxime PO/IV AND metronidazole	500mg tds/2g tds (750mg tds) 400mg bd PO	12.5mg/kg tds /50 mg/kg tds 10mg/kg PO	
Immediate penicillin hypersensitivity only	cotrimoxazole and metronidazole	960mg bd PO 400mg bd PO	25mg/kg bd (>2months of age) PO 10mg/kg bd PO	
IF water related	ADD ciprofloxacin	750mg bd PO	15mg/kg bd PO	
Tetanus prophylaxis indicated if last vaccine >5 years or less than 3 prior vaccines				

Empirical Treatment

Osteomyelitis (excluding diabetic foot)	Antibiotic	Adult dose.	Paediatric dose. <40 kg, Not to exceed adult dose	Duration.
1st line	(flu)cloxacillin	2g QID IV	50mg/kg qid PO	Acute - IV for two weeks then oral for total 6 weeks. Chronic infection - 3/12.
2nd line	cephazolin	2g tds IV	50mg/kg IV	
Immediate penicillin hypersensitivity only	cotrimoxazole 400/80	2 tabs tds PO	25mg/kg bd PO >2 months of age	Rationalise when blood and pus culture results available
IF patient is known to be MRSA colonised - check susceptibilities				Preferred oral agents with improved bone penetration -
IF patient is septic	ADD vancomycin	30mg/kg load -> 15mg/kg bd IV	30 mg/kg bd IV	cotrimoxazole (400/80) 2 tabs tds clindamycin 450mg qid doxycycline (only in patients > 8 years) 100mg bd

Implant infection

If implant is involved, choose between a rifampin-combination for eradication¹ of infection or a suppression therapy until implant is removed.

Adult doses provided. Use appropriate dose for paediatric patients (<40kg)

	Eradication duration 12 weeks	Suppression (according to susceptibility) Duration: until implant is removed
Staphylococcus spp.	rifampicin 300 mg bd PO <u>PLUS</u> - ciprofloxacin 750mg bd PO <u>OR</u> - cotrimoxazole (400/80) 2 tabstds PO <u>OR</u> - doxycycline 100mgbd PO	cotrimoxazole(400/80) 2 tabstds PO <u>OR</u> clindamycin 600mg tds PO <u>OR</u> doxycycline 100mgbd PO
Streptococcus spp.	No eradication possible	amoxicillin 1g tds PO <u>OR</u> clindamycin 600mg tds PO <u>OR</u> cotrimoxazole (400/80) 2 tabstds
Gram-negative bacteria	ciprofloxacin 750mg bd	ciprofloxacin 750mg bd or cotrimoxazole (400/80) 2 tabstds

If Rifampicin is indicated, exclude active tuberculosis should be excluded first. Always administer Rifampicin in a combination with adequate combination partner. Do not give Rifampicin before wound is closed and dry. Consider drug interactions prior to commencing rifampicin

¹ Eradication is only possible in early or acute infections (< 6 weeks of symptoms or after implantation; implant may be retained) or if implant is entirely exchanged in chronic infections (> 6 weeks of symptoms or after implantation). Contact ID specialist to discuss case.

Septic Arthritis	Collect synovial fluid for microscopy, crystals and culture.			
	Consider inoculating 1-2ml into a paediatric blood culture bottle to increase culture yield.			
Septic arthritis-nongonoccal	Antibiotic	Adult dose.	Paediatric dose	Duration.
	Options as OM			<p>Adults - IV 2/52 then oral for a total of 4 wks.</p> <p>Children - IV until afebrile 48 hours then oral for total of 4 weeks.</p> <p>Rationalise when blood and synovial culture results available</p> <p>Preferred oral agents with improved bone penetration</p> <ul style="list-style-type: none"> - cotrimoxazole(400/80) 2 tabs tds - clindamycin 450mg qid - doxycycline (only in patients > 8 years) 100mg bd
Gonococcal septic arthritis				
1st line	ceftriaxone	1g od IV	n/a	1wk
cephalosporin allergy	doxycycline	100mg bd PO	n/a	Rationalise when culture results available

Cellulitis/Pyomyositis	Antibiotic	Adult dose.	Paediatric dose. <40 kg, Not to exceed adult dose	Duration.
1st line	(flu)cloxacillin	2g qid IV/500mg qid PO	50mg/kg IV/12.5mg/kg PO	IV if severe. Change to orals when patient clinically improved. Total therapy 7-10 days
2nd line	cephazolin/cephalexin	2g tds IV/500mg tds PO	50mg/kg tds IV /12.5 mg/kg tds PO	
immediate penicillin hypersensitivity -	vancomycin	15mg/kg bd IV	15mg/kg bd IV	
IF patient known to be MRSA colonised- check susceptibilities	OR Cotrimoxazole 400/80	2 tabs bd PO	25mg/kg bd PO (>2months of age)	
IF patient is septic	ADD vancomycin	30mg/kg load -> 15mg/kg bd IV	30 mg/kg bd IV	

Necrotising fasciitis/Myonecrosis	Surgical Emergency - Urgent debridement. Ensure adequate clearance of infection			
	Antibiotic	Adult dose.	Pediatric dose. <40 kg, Not to exceed adult dose	Duration.
1st line	amoxicillin/clavulanate AND clindamycin AND ciprofloxacin	2.2g tds IV 900mg tds PO 400mg tds IV	60mg tds IV 40mg tds PO 20mg/kg tds IV	IV treatment 5-7 days, switch to PO, complete 14-28 days (depending on clinical course).
Alternatives	If amoxicillin/clavulanate not available - use (flu)cloxacillin	2g qid IV	50mg/kg IV	
	If clindamycin not available - use metronidazole	500mg tds IV	20mg/kg bd IV	
	If ciprofloxacin not available - use gentamicin	7mg/kg LEAN body weight od IV	7mg/kg LEAN body weight od IV	
Immediate penicillin hypersensitivity only	Avoid amoxicillin/clavulanate and (flu)cloxacillin. Instead add vancomycin to above regimen	30mg/kg loading -> 15mg/kg bd IV	30mg/kg bd IV	

Infected Diabetic foot wound	Antibiotic	Adult dose.	Pediatric dose. <40 kg, Not to exceed adult dose	Duration.
1st line	amoxicillin/clavulanate	625mg tds PO/ 1.2g tds IV	20mg/kg tds PO/ 30mg/kg tds IV	IV if severe-escalate to PO when improved
2nd line	cephalexin/cephazolin and metronidazole	500mg tds PO /2g tds IV 400mg bd PO	12.5mg/kg PO/50mg kg tds IV 10mg/kg bd	superficial infection: 5-7 days osteomyelitis –IV for 2 weeks and then switch to PO for total of 3 months
Immediate penicillin hypersensitivity only	cotrimoxazole 400/80 and metronidazole	2 tabs tds PO 400mg tds PO	25mg/kg bd (>2months of age) 10mg/kg bd	
If MRSA colonised - check susceptibilities				
IF patient is septic	ADD vancomycin	30mg/kg load -> 15mg/kg bd IV	30 mg/kg bd IV	
Wound care is paramount. Educate patient in respect to foot care. Optimise diabetes control				

Post op wound infection	Deep infections often require surgery to obtain source control. Ensure cultures are collected at time of surgery. Unless patient is septic, consider delaying antibiotic therapy until adequate cultures has been collected.			
	Antibiotic	Adult dose.	Paediatric dose. <40 kg, Not to exceed adult dose	Duration.
1st line	cephazolin	2g tds IV	50mg/kg tds IV	IV if severe, de-escalate to PO when improved, stop 5-7 days Rationalise when culture results available
2nd line	amoxicillin/clavulanate	1.2g tds IV	20mg/kg tds PO/ 30mg/kg tds IV	
immediate penicillin hypersensitivity only	cotrimoxazole 400/80 or vancomycin	2 tabs tds 30mg/kg load -> 15mg/kg bd IV	25mg/kg bd PO (>2months of age) 30mg/kg bd IV	
If MRSA colonised - check susceptibilities				

Definitive therapy

Staphylococcus spp.	Antibiotic	Adult dose.	Paediatric dose. <40 kg, Not to exceed adult dose
IV			
MSSA - 1st line (MSSA/E ¹)	(flu)cloxacillin	2g qid	50mg/kg IV
MSSA - 2nd line (MSSA/E ¹)	cephazolin	2g tds	50mg kg tds IV
immediate penicillin hypersensitivity OR MRSA/E ¹	vancomycin	load 30mg/kg -> 15mg/kg bd	30 mg/kg bd IV
Oral			
1 st line MSSA infection – soft tissue infection only	(flu)cloxacillin	500mg qid	12.5mg/kg
2 nd line MSSA infection – soft tissue infection only	cephalexin	500mg tds	12.5mg/kg PO tds
1 st line	Cotrimoxazole 400/80	2 tabs tds	25mg/kg bd PO (>2months of age)
2 nd line	doxycycline	100mg bd	3mg/kg bd PO (contraindicated in children <8 years)
2 nd line	clindamycin	450mg tds	10mg/kg tds

¹E= staphylococcus epidermidis and other coagulase negative staphylococcus spp.

Streptococcus pyogenes (group A) or other beta haemolytic strep	Antibiotic	Adult dose.	Paediatric dose. <40 kg, Not to exceed adult dose
IV			
1st line	benzylpenicillin	2.4gm Q4h	60mg/kg Q4h
2 nd line	amoxicillin/ampicillin	2g tds	50mg/kg tds
3rd line	cephazolin	2g tds IV	50mg kg tds
immediate penicillin hypersensitivity	vancomycin	30mg/kg load -> 15mg/kg bd	30 mg/kg bd
Oral			
1st line -	amoxicillin	1g tds PO (bone) 500mg tds PO (soft tissue)	12.5mg/kg PO
2 nd line	clindamycin	450mg tds	10mg/kg tds
immediate penicillin hypersensitivity	cotrimoxazole 400/80	2 tabs bd	25mg/kg bd (>2months of age)