



GUIDELINE

Intra-Abdominal Sepsis: Paediatric Empiric Guidelines

Scope (Staff):	Medical, Nursing and Pharmacy
Scope (Area):	Perth Children's Hospital (PCH)

This document should be read in conjunction with this [DISCLAIMER](#)

CLINICAL SCENARIO		DRUGS/DOSES		
		Standard Protocol	Penicillin allergy ^a Delayed	Penicillin allergy ^a Immediate
Peritonitis	Presumed or proven peritonitis <1 month old	IV piperacillin/tazobactam ^b (dose as per neonatal guidelines). OR IV gentamicin ^c WITH IV amoxicillin AND IV metronidazole (doses as per neonatal guidelines).	Discuss with Infectious Diseases or Clinical Microbiology service.	
	Presumed or proven peritonitis ≥1 month old	IV amoxicillin/clavulanic acid ^{bd} OR IV gentamicin ^{ce} WITH IV amoxicillin 50mg/kg (to a maximum of 2 grams) 6 hourly. AND IV metronidazole 12.5mg/kg (to a maximum of 500mg) 12 hourly.	ceftriaxone ^f AND metronidazole ^g	gentamicin ^e AND clindamycin ^h
Appendicitis	Presumed Appendicitis ('normal' appendix identified)	IV amoxicillin/clavulanic acid ^d	ceftriaxone ^f AND metronidazole ^g	gentamicin ^e AND clindamycin ^h
Appendicitis	Appendicitis (without peritoneal soiling)	IV amoxicillin/clavulanic acid ^d	ceftriaxone ^f AND metronidazole ^g	gentamicin ^e AND clindamycin ^h

CLINICAL SCENARIO		DRUGS/DOSES		
		Standard Protocol	Penicillin allergy ^a Delayed	Penicillin allergy ^a Immediate
		CONSIDER switching to oral amoxicillin/clavulanic acid 25mg/kg (to a maximum of 875mg amoxicillin component) 12 hourly for oral step down.	Discuss with Infectious Diseases or Clinical Microbiology service when considering switch to oral step down.	
	Appendicitis (with peritoneal soiling)	IV amoxicillin/clavulanic acid ^d OR IV gentamicin ^c WITH IV amoxicillin 50mg/kg (to a maximum of 2 grams) 6 hourly. AND IV metronidazole 12.5mg/kg (to a maximum of 500mg) 12 hourly.	ceftriaxone ^f AND metronidazole ^g	gentamicin ^e AND clindamycin ^h
		CONSIDER switching to oral amoxicillin/clavulanic acid 25mg/kg (to a maximum of 875mg amoxicillin component) 12 hourly for oral step down.	Discuss with Infectious Diseases or Clinical Microbiology service when considering switch to oral step down.	
	Other intra-abdominal infections	Biliary sepsis or ascending cholangitis	IV amoxicillin/clavulanic acid ^d	ceftriaxone ^f AND metronidazole ^g
Spontaneous bacterial peritonitis		IV ceftriaxone 50mg/kg (to a maximum of 2 grams) once daily.	IV ceftriaxone 50mg/kg (to a maximum of 2 grams) once daily.	Discuss with Infectious Diseases or Clinical Microbiology service.

Intraperitoneal dosing for Peritoneal Dialysis (PD) associated peritonitis.					
CLINICAL SCENARIO		DRUGS/DOSES			
		Standard Protocol	Known or Suspected MRSA ⁱ	Penicillin allergy ^a Delayed	Penicillin allergy ^a Immediate
PD associated peritonitis	PD associated peritonitis	In a patient with no fever, mild abdominal pain and no risk factors for severe infection: Cefepime (doses below)	Cefepime and Vancomycin (doses below).	As per standard protocol.	Discuss with ID or clinical microbiology service.
		In a child with recent or current exit site/tunnel infection, fever, severe abdominal pain, or age < 2 years old: Cefepime AND Vancomycin (doses below).			
		<p>Continuous therapy intraperitoneal dosing: Cefepime = 500mg/L loading dose then 125mg/L in each exchange Vancomycin 1000mg/L loading dose then 25mg/L in each exchange. Discuss with ID for guidance on therapeutic drug monitoring.</p> <p>Intermittent therapy intraperitoneal dosing: Vancomycin = 30mg/kg then repeat dosing at 15mg/kg once every 3-5 days. The first vancomycin blood level should be performed within 2-4 days after the initial dose. Re-dosing should occur when the blood level is <15mg/L. Cephalosporin intermittent therapy is not recommended.</p>			

- a) An immediate (IgE mediated) reaction is characterised by the development of urticaria, angioedema, bronchospasm or anaphylaxis within 1 to 2 hours of drug administration. Delayed reactions including maculopapular or morbilliform rashes, drug fever and cytopenias and are more in keeping with other forms of immunological reactivity. Isolated diarrhoea is not usually immune-mediated and does NOT contraindicate the future use of an antibiotic.
- b) Amoxicillin/Clavulanic Acid (or Piperacillin/Tazobactam in neonates) is preferred in proven peritonitis due to the risk of aminoglycoside toxicity.
- c) Gentamicin is rapidly bactericidal and should be administered prior to amoxicillin and metronidazole. Aminoglycoside antibiotics may be inactivated by penicillin and cephalosporin antibiotics and lines should be flushed well with a compatible fluid between administration.
- d) IV [amoxicillin/clavulanic acid](#) (doses based on amoxicillin component)
 Birth (term) to 3 months and <4kg: IV infusion 25mg/kg/dose every 12 hours.
 Birth (term) to 3 months and >4kg: IV infusion 25mg/kg/dose every 8 hours.
 > 3 months and <40kg: IV 25mg/kg/dose (maximum 1g) every 8 hours; increase to every 6 hours in severe infections.
 >40kg: IV 1g every 8 hours; increase to every 6 hours in severe infections. Up to 2g every 6-8 hours can be used.

- e) IV/IM [gentamicin](#) Children \geq 1 month old to 10 years old: 7.5mg/kg ONCE daily to a maximum of 320mg. Children $>$ 10 years to 18 years: 6-7mg/kg ONCE daily to a maximum of 560mg. Therapeutic drug monitoring required.
- f) IV [ceftriaxone](#) **50mg/kg** (to a maximum of 2 grams) once daily.
- g) IV [metronidazole](#) **12.5mg/kg** (to a maximum of 500mg) 12 hourly.
- h) IV [clindamycin](#) **15mg/kg** (to a maximum of 600mg) 8 hourly.
- i) Children known or suspected to be colonised with MRSA may need to have their therapy/prophylaxis modified. Children suspected of having MRSA include:
 - i. Children previously colonised with MRSA
 - ii. Household contacts of MRSA colonised individuals
 - iii. In children who reside in regions with higher MRSA rates (e.g. Kimberley and the Pilbara) a lower threshold for suspected MRSA should be given
 - iv. Children with recurrent skin infections or those unresponsive to \geq 48 of beta-lactam therapy. For further advice, discuss with Microbiology or ID service.

Related internal policies, procedures and guidelines

[Antimicrobial Stewardship Policy](#)
[ChAMP Monographs](#)


References

1. Therapeutic Guidelines Ltd. eTG complete [online]. West Melbourne: Therapeutic Guidelines Ltd; accessed online 12th October 2019.
2. Warady BA, Bakkaloglu S, Newland J, Cantwell M, Verrina E, Neu A, et al. Consensus Guidelines for the Prevention and Treatment of Catheter-Related Infections and Peritonitis in Paediatric Patients Receiving Peritoneal Dialysis: 2012 Update. *Perit Dial Int.* 2012;32:S29-S86.
3. ISPD Guidelines, Peritoneal Dialysis-Related Infections Recommendations. Accessed online 23rd April 2019. <https://ispd.org/ispd-guidelines/>

Useful resources (including related forms)

[Therapeutic Guidelines](#)
[ChAMP Guidelines](#)
[Antimicrobial Stewardship Policy](#)

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