## Guideline
### Intra-Abdominal Sepsis: Paediatric Empiric Guidelines

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

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### DISCLAIMER
This document should be read in conjunction with this DISCLAIMER.

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### Clinical Scenario

<table>
<thead>
<tr>
<th>DRUGS/DOSES</th>
<th>Standard Protocol</th>
<th>Penicillin allergy(^a) Delayed</th>
<th>Penicillin allergy(^b) Immediate</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Peritonitis</strong></td>
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</tbody>
</table>
| 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 piperacillin/tazobactam\(^b\) 100mg/kg (to a maximum of 4 grams piperacillin component) 8 hourly.  
OR  
IV gentamicin\(^c\) 7.5mg/kg (to a maximum of 320mg) once daily.  
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. | | |

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### Appendicitis

| Presumed Appendicitis (‘normal’ appendix identified) | IV piperacillin/tazobactam  100mg/kg (to a maximum of 4 grams piperacillin component) 8 hourly. | ceftriaxone\(^e\)  
AND  
metronidazole\(^f\) | ceftriaxone\(^e\)  
AND  
metronidazole\(^f\) |

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\(^a\) Use nafcillin for 
\(^b\) Use ertapenem,  
\(^c\) Use ciprofloxacin  
\(^d\) Use teicoplanin  
\(^e\) Use co-amoxiclav  
\(^f\) Use rifampicin  
\(^g\) Use gentamicin  
\(^h\) Use clindamycin
### Intra-Abdominal Sepsis

<table>
<thead>
<tr>
<th>CLINICAL SCENARIO</th>
<th>DRUGS/DOSES</th>
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</thead>
<tbody>
<tr>
<td><strong>Standard Protocol</strong></td>
<td>Penicillin allergy&lt;sup&gt;a&lt;/sup&gt; delayed</td>
</tr>
<tr>
<td><strong>Appendicitis (without peritoneal soiling)</strong></td>
<td><strong>Piperacillin/tazobactam</strong> 100mg/kg (to a maximum of 4 grams piperacillin component) 8 hourly. <strong>OR</strong> IV gentamicin&lt;sup&gt;c&lt;/sup&gt; 7.5mg/kg (to a maximum of 320mg) once daily. <strong>WITH</strong> IV amoxicillin 50mg/kg (to a maximum of 2 grams) 6 hourly. <strong>AND</strong> IV metronidazole 12.5mg/kg (to a maximum of 500mg) 12 hourly. CONSIDER switching to oral amoxicillin/clavulanic acid 25mg/kg (to a maximum of 875mg amoxicillin component) 12 hourly for oral step down.</td>
</tr>
<tr>
<td><strong>Appendicitis (with peritoneal soiling)</strong></td>
<td><strong>Piperacillin/tazobactam</strong> 100mg/kg (to a maximum of 4 grams piperacillin component) 8 hourly.</td>
</tr>
<tr>
<td><strong>Biliary sepsis or ascending cholangitis</strong></td>
<td><strong>Piperacillin/tazobactam</strong> 100mg/kg (to a maximum of 4 grams piperacillin component) 8 hourly.</td>
</tr>
<tr>
<td><strong>Spontaneous bacterial peritonitis</strong></td>
<td><strong>Ceftriaxone</strong> 50mg/kg (to a maximum of 2 grams) once daily.</td>
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</table>

*Discuss with Infectious Diseases or Clinical Microbiology service when considering switch to oral step down.*
Intra-Abdominal Sepsis

**Intraperitoneal dosing for Peritoneal Dialysis (PD) associated peritonitis.**

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<tr>
<td><strong>Standard Protocol</strong></td>
<td><strong>Known or Suspected MRSA</strong></td>
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<tr>
<td>PD associated peritonitis</td>
<td>In a patient with no fever, mild abdominal pain and no risk factors for severe infection: Cefepime (doses below)</td>
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<td></td>
<td>In a child with recent or current exit site/tunnel infection, fever, severe abdominal pain, or age &lt; 2 years old: Cefepime AND Vancomycin (doses below).</td>
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</table>

**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

**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.

Cefepime intermittent therapy is not recommended.

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**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)** Piperacillin/tazobactam 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)** 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 ≥ 48 of beta-lactam therapy. For further advice, discuss with Microbiology or ID service

**e)** IV **ceftriaxone 50mg/kg** (to a maximum of 2 grams) once daily.
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f) IV **metronidazole 12.5mg/kg** (to a maximum of 500mg) 12 hourly.

g) IV **gentamicin 7.5mg/kg** (to a maximum of 320mg) once daily. Therapeutic drug monitoring required.

h) IV **clindamycin 15mg/kg** (to a maximum of 600mg) 8 hourly.

Related internal policies, procedures and guidelines

| Antimicrobial Stewardship Policy |
| ChAMP Monographs |

References


Useful resources (including related forms)

| Therapeutic Guidelines |
| ChAMP Guidelines |
| Antimicrobial Stewardship Policy |
Intra-Abdominal Sepsis

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<tr>
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<td>Children’s Antimicrobial Management Program</td>
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