



MEMORANDUM

To: All Medical, Nursing & Pharmacy Staff

Copies to:

From: Dr Andrew Henderson & Dr Evan Bursle
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Contact No: 3176 2329

Subject: 5/04/2018 Update on antimicrobial shortage:
Piperacillin-Tazobactam IV & Gentamicin IV

File Ref: Ref Number

Situation

This memo updates the information provided in previous memos regarding the shortages of IV Piperacillin-Tazobactam and IV Gentamicin.

Background

IV Piperacillin-Tazobactam:

The global shortage of IV Piperacillin-Tazobactam was originally estimated to continue until at least April 2018. With judicious prescribing and the use of alternate regimens, the shortage has been largely mitigated to date.

IV Gentamicin:

The short supply of IV Gentamicin arising from the TGA recall of affected batches (<https://www.tga.gov.au/alert/gentamicin-injection-bp-80-mg-2-ml-steriluer>) is now due to resolve.

Assessment

IV Piperacillin-Tazobactam:

With the co-ordinated effort of all staff to conserve stock holdings, there is now adequate supply to allow for IV Piperacillin-Tazobactam to be reintroduced into empiric guidelines.

IV Gentamicin:

Central Pharmacy has been able to secure sufficient stock to support the reintroduction of IV Gentamicin back into empiric guidelines.

Recommendations

IV Piperacillin-Tazobactam:

1. Imprest availability:

IV Piperacillin-Tazobactam will be available on specific ward areas to facilitate access for indications in line with the antimicrobial prescribing guidelines. These areas will be:

- ED, W2E, W4BT, ICU, W4C, W4D, and W4E.

2. Piperacillin-Tazobactam switch guidelines (Appendix 1):

The previously distributed Piperacillin-Tazobactam switch guidelines have been modified to reintroduce Piperacillin-Tazobactam for additional indications.

Alternate regimens continue to be recommended for:

- Open fractures
- Diabetic Foot Infections
- Hospital-acquired pneumonia, including aspiration pneumonia
- Empyema/lung abscess
- Surgical prophylaxis for Gastro-Intestinal Endoscopy & Interventional Radiology

3. Approval for Piperacillin-Tazobactam usage:

All usage of Piperacillin-Tazobactam outside the revised switch guidelines requires specific Infectious Diseases approval. In such instances, prescribers should document the name of the approving Infectious Diseases Physician/Registrar in the indicated field within MAR.

Details for **piperacillin-tazobactam (piperacillin-tazobactam 4 g-0.5 g intravenous injection)**

Details | Order Comments | Diagnoses

Review Schedule Remaining Administrations: (Unknown) Stop: (Unknown)

*Dose: 4.5 g	Drug form: Vial
*Route of administration: IV	*Frequency: THREE times a day (even inte...)
First dose priority: NOW	First dose date/time: 10-Oct-2017 16:16 AEST
Stop date/time: ..:..:.. AEST	PRN: []
Infuse over: []	Infuse over unit: []
Duration: []	*Indication: Gram negative sepsis
Restricted antimicrobial approved by (name or code): ID approved - Dr Playford	Special instructions: []
Use patient's own med: <input type="radio"/> Yes <input checked="" type="radio"/> No	<No Items>
Nurse Witness: []	

piperacillin-tazobactam (piperacillin-tazobactam 4 g-0.5 g intravenous injection)
4.5 g = 1 vial(s), Vial, IV, THREE times a day (even interval), start: 10/10/17 16:16:00 AEST,
Indication: Gram negative sepsis, Approval: ID approved - Dr Playford

4. Auditing:

All prescriptions of Piperacillin-Tazobactam will continue to be identified and audited utilising the Dashboard functionality associated with ieMR.

- a. In the first instance, ward Pharmacists will liaise with prescribing medical staff to suggest alternate antimicrobial regimens based upon the revised switch guidelines.
- b. Infectious Diseases Physicians, Registrars, and Pharmacists will follow up prescriptions for complex clinical situations or where a change in prescription does not occur within a timely manner.

IV Gentamicin:

1. Imprest restrictions:

IV Gentamicin will be restocked on most imprest areas and no longer be restricted to specific wards (previously kept on ED, W2E, ICU and Operating Theatres during the shortage). Please discuss with your ward pharmacist if you have any concerns on imprest stock holdings for your ward.

2. Gentamicin Guidelines (Appendix 2):

Gentamicin will be reintroduced as part of first-line recommendations for a number of indications. See below (Appendix 2) for a summary of these indications or refer to the Metro South Antimicrobial Website & Guidelines for more information:

<https://metrosouth.health.qld.gov.au/clinician-resources/antimicrobial-prescribing-guidelines>

For guidance on gentamicin dosing & administration, see also the Metro South Gentamicin Guidelines: <https://metrosouth.health.qld.gov.au/sites/default/files/content/msh-gentamicin-guidelines.pdf>

Advice:

The PAH Infectious Diseases Registrars and Pharmacists (available Monday to Friday from 08:00 hours to 17:00 hours) and the Metro South Infectious Diseases Physician on-call (available at all times) should be consulted for any clinical questions regarding appropriate antimicrobial therapy.

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05/04/2018

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APPENDIX 1: Piperacillin-Tazobactam Empiric & Switch Guidelines

	Indication	Indication Subset	Empiric Guideline Recommendations**
Sepsis	Febrile neutropenia		Piperacillin-Tazobactam (4.5g IV 6-hourly) & Gentamicin
	Hospital-acquired sepsis	Unknown source	Piperacillin-Tazobactam (4.5g IV 8-hourly) [Add vancomycin for patients known to be MRSA colonised or have a central line in-situ]
	Proven <i>Pseudomonas</i> sp. infection		Piperacillin-Tazobactam (4.5g IV 6-hourly) [ID approval required]
Bone & Joint Infections	Open fractures		Cefazolin (2g IV 8-hourly) & Metronidazole (400mg PO 12-hourly)*
	Diabetic foot infections	Osteomyelitis or severe limb or life threatening infection	Cefazolin (2g IV 8-hourly) & Metronidazole (400mg PO 12-hourly)* Seek ID opinion if Pseudomonas cover required
Gastro-intestinal & intra-abdominal infections	Intra-abdominal sepsis (peritonitis, cholangitis, severe diverticulitis, intra-abdominal collection)	When switching from a gentamicin-containing regimen if IV therapy is required beyond 48 hours or where gentamicin is contra-indicated	Piperacillin-Tazobactam (4.5g IV 8-hourly)
	Spontaneous bacterial peritonitis in patients with ascites	For patients already on fluoroquinolone or trimethoprim + sulfamethoxazole prophylaxis	Ceftriaxone (2g IV daily) & Ampicillin (2g IV 6-hourly) OR as a single agent, use Piperacillin-Tazobactam (4.5g IV 8-hourly)
Respiratory	Hospital-acquired pneumonia (HAP), including aspiration pneumonia		Ceftriaxone (1g IV daily) & if anaerobic infection is suspected, add Metronidazole (400mg PO 12-hourly)*
	Bronchiectasis	Infective exacerbation where <i>Pseudomonas aeruginosa</i> is proven	Piperacillin-Tazobactam (4.5g IV 6-hourly) [ID approval required]
	Empyema/lung abscess		Ceftriaxone (2g IV daily) & Metronidazole (400mg PO 12-hourly)*
Bites (moderate-to-severe established infection)			Piperacillin-Tazobactam (4.5g IV 8-hourly)
Surgical or Radiological Prophylaxis	Liver transplant		Piperacillin-Tazobactam for peri-operative prophylaxis
	Renal transplant		Piperacillin-Tazobactam for peri-operative prophylaxis
	Gastro-intestinal endoscopy	ERCP with expected incomplete drainage (e.g. PSC, hilar strictures)	Cefazolin (2g IV single dose)
	Interventional radiology	Percutaneous transhepatic cholangiogram with expected incomplete drainage or recent ERCP (within 1 week)	Cefazolin (2g IV single dose)
All other indications	Infectious Diseases approval is required before prescribing (with the exception of ICU)		

*PO Metronidazole is generally recommended given 80% oral bioavailability. Where the PO route is not feasible, substitute for Metronidazole 500mg IV 12-hourly. ** Please contact Infectious Diseases for specific clinical situations that may require alternate antimicrobial therapy (e.g. where known/suspected multiresistant organisms, immunosuppression, allergies, or other complicating factors)

APPENDIX 2: Empiric Gentamicin Guidelines

Indication	Empiric Guideline Recommendation s
Community-onset severe sepsis with no obvious source	Gentamicin & Flucloxacillin & Vancomycin
Febrile Neutropenia	Gentamicin & & Piperacillin-Tazobactam (4.5g IV 6-hourly)
Acute pyelonephritis	Gentamicin & Ampicillin
Intra-abdominal sepsis (peritonitis, cholangitis, severe diverticulitis, intra-abdominal collection)	Gentamicin & Ampicillin & Metronidazole*
CAPD peritonitis (empiric therapy)	Cefazolin & Gentamicin (both intraperitoneal)
Perioperative surgical prophylaxis	Various (see https://metrosouth.health.qld.gov.au/clinician-resources/antimicrobial-prescribing-guidelines/surgical-antibiotic-prophylaxis-guides)

*PO Metronidazole is generally recommended given 80% oral bioavailability. Where the PO route is not feasible, substitute for Metronidazole 500mg IV 12-hourly

Refer to the Metro South Antimicrobial Website & Guidelines for more information:

<https://metrosouth.health.qld.gov.au/clinician-resources/antimicrobial-prescribing-guidelines>

See also the Metro South Gentamicin Guidelines for guidance on gentamicin dosing & administration: <https://metrosouth.health.qld.gov.au/sites/default/files/content/msh-gentamicin-guidelines.pdf>