

encapsulate

Welcome to 'encapsulate'

Welcome to the thirteenth edition of **encapsulate**. This issue looks at the use of high cost drugs Perfalgan® and meropenem. We also advise of changes to Adverse Drug Reporting, and highlight recent recommendations that resulted from a study into Regional Anaesthesia and Anticoagulant Medications.

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Perfalgan®

Bristol-Myers Squibb's intravenous paracetamol solution, Perfalgan®, was listed on the Therapeutics Goods Register 2004.

Perfalgan® is a useful additional analgesic choice for patients who have a prolonged nil-by-mouth status, those who are unable to receive non-steroidal anti-inflammatory drugs or those in whom opiate doses should be kept to a minimum or avoided in the peri-operative period.

Doctors' orders for paracetamol are regularly written up for oral, rectal or intravenous administration (PO/PR/IV).

Intravenous paracetamol should only be used in clinically appropriate situations. The easiest and cheapest method of paracetamol administration is oral (tablet, soluble tablet or liquid). There are situations when the oral route of administration may not always be available in some patients with certain conditions, for example bowel obstruction.

The cost associated with Perfalgan® use means that administration should be restricted to situations following:

- Major abdominal surgery where no oral or rectal routes are available for administration.
- Those in whom rectal dosing is contraindicated.
- Post operative patients in whom enteral absorption is impaired.
- Significant/prolonged vomiting (and/or nausea) secondary to PONV (post operative nausea

and vomiting) / postoperative ileus / bowel obstruction / short gut syndrome.

The intravenous administration of paracetamol can lead to extravasation and an increased risk of infection. The potential development of air embolisms mean that close monitoring is required, especially with a central line. These complications should be considered prior to using intravenous Perfalgan®.

All doses of paracetamol, including those administered intravenously, must be clearly recorded on the Drug Therapy Chart, as oral paracetamol preparations are readily and regularly given in the postoperative period and failure to document administered doses may result in inadvertent paracetamol overdose. The maximum dose of paracetamol for an adult is 4 grams in any 24 hour period.

If you have any queries regarding appropriate use of paracetamol please speak to your Pharmacist.

Rational use of Meropenem

Meropenem is a broad spectrum carbapenem antibiotic useful in a wide range of infections.ⁱ Meropenem is not funded under the PBS, therefore the high cost of this antibiotic means that it can routinely contribute significantly to hospitals' high cost drug expenditure. In addition to its cost, concerns surrounding bacterial resistance mean that evidence-based treatment guidelines often recommend meropenem as a second line agent reserved for when less expensive and clinically more appropriate treatment options exist.^{i,ii}

In general, a number of principles guide the appropriate use of antibiotics.ⁱ These include:

- Use antibiotics only where the benefits are scientifically demonstrable and substantial.
- Use the narrowest spectrum antimicrobial to treat the known or likely pathogens.
- Use single drugs unless it has been proven that combination therapy is required to ensure the efficacy or reduce the selection of clinically significant resistance.
- Use a dose that is high enough to ensure efficacy and minimise the risk of resistance

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selection and low enough to minimise the risk of dose related toxicity.

- The choice of antimicrobial should be based on culture and sensitivity results, or in the case of empirical therapy and prophylaxis, known common pathogens and their current resistance patterns.
- Duration of therapy should be as short as possible, and should not exceed 7 days unless there is proof that this duration is inadequate.

It is important that the above principles are considered when meropenem is used. This will help to optimise therapy for patients, reduce the risk of selection of resistant organisms and ensure cost-effective access to the medication. Should prescribers require further guidance with regards to the appropriateness of meropenem use, an infectious diseases specialist, clinical microbiologist or the pharmacy department may be contacted.

The Future of ADR Reporting: 2010

The Adverse Drug Reactions Advisory Committee (ADRAC), a subcommittee of the Australian Drug Evaluation Committee, ceased to exist at the end of 2009. ADRAC, founded in May 1970 had acted as a conduit between healthcare professionals and the Therapeutic Drugs Administration (TGA) to help build one of the most respected pharmacovigilance systems in the world.

The new Advisory Committee on the Safety of Medicines (ACSOM) will replace ADRAC monitoring and managing the safety of medicines in Australia from 2010 onwards. ACSOM will incorporate the functions of ADRAC but will have a greater scope of practice to reflect the increased emphasis on pharmacovigilance in Australia and world-wide.

ACSOM will be heavily reliant on health professionals to report adverse drug reactions, in the same way they were reported to ADRAC, to ensure its success. The following adverse drug reactions should be reported:

- ALL suspected reactions to new drugs
- ALL suspected drug interactions

- Suspected reactions causing
 - Death
 - Admission to hospital or prolongation of hospitalisation
 - Increased investigations or treatment
 - Birth defects

Please contact your Pharmacist if you have witness an adverse drug reaction.

Regional Anaesthesia and Anticoagulant Medications

Safety issues were highlighted recently when the American Society of Regional Anaesthesia and Pain Medicine updated its guidelines on regional anaesthesia in patients receiving antithrombotic or thrombolytic therapy.ⁱⁱⁱ Neuraxial anaesthesia, such as epidural anaesthesia, is an important aspect of patient care during the surgical period that has been previously demonstrated to improve patient outcomes.ⁱⁱⁱ Despite this, the use of certain medications which affect coagulation and haemostasis can increase the risk of some complications of neuraxial anaesthesia such as spinal haematoma. These medications include unfractionated heparin, low-molecular weight heparins, anti-platelet agents, warfarin, direct thrombin inhibitors and thrombolytic agents.ⁱⁱⁱ

The guidelines recommend increased vigilance and monitoring in such patients to enable early evaluation of any neurological dysfunction and prompt intervention.ⁱⁱⁱ For specific information regarding particular agents, and for anticoagulant dosing times with respect to neuraxial catheter placement and removal, please refer to your hospital guidelines or consult with the Anaesthetist managing your patient.

ⁱ Antibiotic Expert Group. *Therapeutic Guidelines: Antibiotic. Version 13.* Melbourne: Therapeutic Guidelines Limited; 2006

ⁱⁱ Baldwin, C.K., Lyseng-Williams, K.A., and Kean, S.J. Meropenem – A Review of its Use in the Treatment of Serious Bacterial Infections. *Drugs* 2008; 68: 803-838.

ⁱⁱⁱ Horlocker T.T. et al. *Regional Anaesthesia in the Patient Receiving Antithrombotic or Thrombolytic Therapy – American Society of Regional Anaesthesia and Pain Medicine Evidence-Based Guidelines (Third Edition).* *Reg Anesth Pain Med* 2010; 35: 64-101.