Monographs for Commonly Administered Intravenous Medications
in Home and Community Care

Meropenem

Drug Class[1]	Antibiotic - carbapenem	
Spectrum[1,2]	Refer to product monograph for complete spectrum *Staphylococcus aureus*, Group D Strep, aerobic gram negative (*Acinetobacter* species, *Citrobacter* species, *Enterobacter cloacae, Haemophilus influenza, Escherichia coli, Klebsiella pneumoniae, Pseudomonas aeruginosa*), and *Peptostreptococcus*, *Bacteroides*, *Fusobacterium*)	
Cross Sensitivities / Allergies[1]	May have cross sensitivities with cephalosporin, penicillin or other beta lactam antibiotics	
Indications[1-3]	• Skin and skin structure • Respiratory tract • Intra-abdominal • Gynecological • Meningitis	• Septicemia • Urinary Tract • Febrile neutropenia • Other conditions based on culture and sensitivity results
Outpatient Considerations[1]	• For patients with a documented allergy to penicillin, cephalosporin or beta lactam, the first dose should be administered in a hospital or clinic setting. • If patient is also on valproic acid or divalproex sodium, consider an alternative antibiotic due to a drug interaction (see Selected Clinically Significant Drug Interactions section below). • **Attention prescribers**: Read administration and stability section. Liaise with home care provider to arrange the most appropriate administration schedule.	
Prescribing Considerations and Dosage in Adults[1-3]	**At time of ordering please provide the following to the infusion pharmacist:** • **Height, weight** • **Most recent serum creatinine with date obtained** • **Indication (infection being treated)** Usual adult dose is 500-1000 mg IV q8h. Maximum dose is 6 grams per day. ***Dosing intervals and dosage require adjustment for renal impairment*** Higher doses of meropenem are recommended for treating *Pseudomonas* infections in order to obtain the necessary minimum inhibitory concentration (MIC) and for treatment of meningitis.	

Meropenem

Administration[2,4,5]	Can be dispensed as single doses and administered by gravity or pole pump with each nursing visit. Single dose minibags can be infused over 15-30 minutes. May also be dispensed in an ambulatory cassette/multi dose bag intended for infusion via ambulatory pump programmed to deliver total daily dose as preprogrammed boluses over 24 hours. If ambulatory Infusion pumps are used with this medication, special refrigerator packs must be available. This medication is stable for 24 hours provided frozen gel packs are kept with the medication in a cold pouch. The gel packs need to be changed every 8 hours. Prior to connecting the patient to therapy, double check pump programming against the order. Recheck after each order change. Contact pharmacy infusion provider for specific questions pertaining to administration.	
Stability / Compatibilities[1,2,4,5]	*Compatible in:* • 0.9% Sodium Chloride (NS) • Dextrose 5% in Water (D5W) • Ringer's Lactate (RL) Prepared minibags have longer stability in NS compared to D5W	**There is a concern about the stability of this medication at room temperature for 24 hours or even stored with cool gel packs. Studies indicate that 10-15% of the dose may be lost due to degradation. For this reason, some pharmacy infusion providers will not dispense in an ambulatory pump – but rather prepare in minibags which must be stored under refrigeration and administered every 8 hours by a visiting nurse. Ensure appropriate storage conditions as specified are being met (i.e., refrigeration or cold packs).
Monitoring Parameters[1]	**Laboratory:** • Complete blood count weekly • If pre-existing liver disease, monitor liver function during therapy	**Clinical by Nurse** • Validate that patient does not have a penicillin, cephalosporin or beta lactam allergy or that the existing allergy has been acknowledged and the treatment approved. • Ask daily about any onset of severe diarrhea. Contact prescriber to reassess therapy and possibly order stool cultures to rule out *C. difficile* and implement treatment, if necessary • Review home medications and compare

Meropenem

		against the selected drug interactions listed below. Report to prescriber if patient is using an interacting drug and obtain further orders. For more comprehensive drug interaction screening, contact the patient's community pharmacist(s).
Selected Clinically Significant Drug Interactions[1]	**Valproic acid or divalproex sodium –** meropenem reduces valproic acid levels, which can precipitate a seizure in a previously controlled individual. Choosing an alternative antibiotic is recommended.	
Patient Education	**Advise patient to report to their doctor or nurse if they have:** • New onset watery, foul smelling diarrhea and abdominal cramping. Meropenem can cause *C. difficile* diarrhea.	
Other	For information on pregnancy and nursing please contact the Motherisk Helpline found at http://www.motherisk.org/women/contactUs.jsp	

References:

1. Meropenem product monograph. Richmond Hill (ON): Fresenius Kabi Canada Ltd.; 2015 Mar 27 [cited 2016 Feb 23]. Obtained through Health Canada Drug Product Database; search term "meropenem" as active ingredient, available from: http://webprod5.hc-sc.gc.ca/dpd-bdpp/index-eng.jsp
2. Meropenem [monograph]. In: Bedard M, Gergoure N, Massicotte A, Editors. Parenteral Drug Therapy Manual. Ottawa (ON); 2015.
3. Meropenem monograph. Pittsburgh (PA): Antimicrobe.org [cited 2016 Feb 23]. Available from: http://www.antimicrobe.org/new/drugpopup/meropenem.pdf
4. Manning L, Wright C, Ingram PR, Whitmore TJ, Heath CH, Manson I et al. Continuous infusions of meropenem in ambulatory care: clinical efficacy, safety and stability. Esposito S, ed. PLoS ONE. 2014;9(7). http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4096762/
5. Meropenem [monograph]. Global RPh. [accessed 2016 Mar 30] Available from: http://www.globalrph.com/meropenem_dilution.htm

Disclaimer: This monograph is intended to be used as a reference to support healthcare professionals in the home and community setting. It supplements, but does not replace: clinical judgement, the information provided by the product manufacturers, and the need to consult with the prescriber.

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