

Meropenem belongs to the carbapenem class of antibiotics, acting through the inhibition of bacterial cell-wall synthesis by binding to penicillin-binding proteins. Carbapenems have one of the broadest antibacterial spectra and should not be used to treat infections if a narrower spectrum antibiotic with a lower impact on antibacterial resistance is an option.

ANTIMICROBIAL SPECTRUM

- ▣ **Gram-positive cocci:** *Methicillin-susceptible Staphylococcus aureus* (penicillinase-producing), enterococci, streptococci, *Streptococcus pneumoniae*.
- ▣ **Gram-negative bacilli:** *Escherichia coli*, *Klebsiella* spp., *Morganella morganii*, *Proteus vulgaris*, *Providencia rettgeri*, *Enterobacter* spp., *Serratia marcescens*, *Citrobacter* spp., *Acinetobacter* spp, *Pseudomonas aeruginosa* (see comment below), *Haemophilus influenzae*.
- ▣ **Anaerobes:** *Bacteroides* spp., *Clostridium* spp. other than *Clostridoides difficile*, *Propionibacterium* spp.
- ▣ **Other:** *Alcaligenes xylosoxidans*, *Gardnerella vaginalis*, *Nocardia* spp., *Rhodococcus equi*.

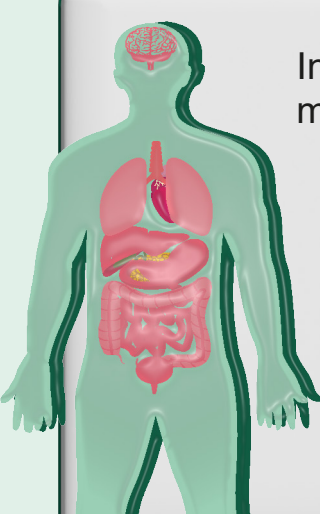


EXCRETION

Approximately 70% excreted in urine unchanged.

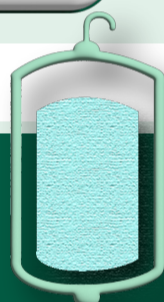
MAIN INDICATIONS

In cases where resistance to other antibiotics is anticipated or confirmed, meropenem may be used for the treatment of the following infections:

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- Sepsis, including ESBL-producing *Enterobacterales* infections
 - Lower respiratory tract
 - Urinary tract
 - Skin and skin structure infections
 - Intra-abdominal
 - Meningitis
 - Febrile neutropenia
 - Bone and joint
 - Endocarditis

ADULT DOSE

- ▣ **Usual Dose:** 1 g q8h for most indications.
- ▣ **High dose (i.e. CNS or bone infections):** 2 g q8h in extended infusion AND combined with another active drug for carbapenemase- producing *Enterobacterales*.
- ▣ **Extended infusion method IV:** 1-2 g every 8 hours over 3 hours.



RENAL IMPAIRMENT a,b

- Use normal dose every 12 hours if creatinine clearance 26–50 mL/minute.
- Use half normal dose every 12 hours if creatinine clearance 10–25 mL/minute.
- Use half normal dose every 24 hours if creatinine clearance less than 10 mL/minute.

SIDE EFFECTS

- ! *C. difficile* with prolonged use
- ! Constipation (1-7%)
- ! Diarrhoea (4-5%)
- ! Nausea or vomiting (1-4%)
- ! Phlebitis (2%)
- ! Seizures with an increased risk in patients with pre-existing seizures, stroke, brain injury and in patients with renal impairment. However, the risk is significantly lower than with imipenem



MONITORING

- ▣ Monitor renal function in patients with renal impairment and those receiving other nephrotoxic drugs.
- ▣ Observe for *C. difficile*-associated diarrhoea, multidrug resistant bacteria and fungal superinfection.



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