IMIPENEM

DESCRIPTION
Broad spectrum carbapenem antibiotic. Bactericidal and inhibits cell wall synthesis. About 98% of unselected bacterial pathogens isolated from humans are susceptible to this drug. Active against most aerobic and anaerobic gram positive and gram-negative bacteria including most streptococci and staphylococci (MRSA, MRSE), L. monocytogenes, Clostridium, Peptococcus, Peptostreptococcus, E coli, Klebsiella, Proteus species, Citrobacter and Enterobacter species.

USE
Restricted to the treatment of NON-CNS infections due to multiresistant organisms, primarily Enterobacteriaceae and anaerobes. (Risk of drug related seizures in patients with meningitis!).

PHARMACOLOGY
Imipenem is combined in a 1:1 ratio with cilastatin. Cilastatin has no intrinsic antibacterial activity but is a potent inhibitor of renal dehydropeptidase-I, an enzyme that metabolises imipenem. The co-administration of both drugs increases the urinary concentrations of imipenem, prolongs the imipenem serum half life, and appears to prevent the nephrotoxicity induced by high dose of imipenem. 70-80% of imipenem is excreted unchanged in urine. The mean serum half-life is 2 hours, whereas that of cilastatin is 5.1 to 6.4 hours. The half-lives are inversely related to birthweight and gestational age. Although it can penetrate well in inflamed meninges, it may induce seizures in infants with bacterial meningitis and so not to be used in meningitis. Meropenem has not been shown to cause seizures in infants with meningitis and so, a better alternative in cases with multi-resistant organisms.

PRESENTATION
250mg/vial in powder form
500mg/vial in powder form

DOSE
20-25mg/kg/dose 12 hourly

ROUTE
IV infusion only

RECONSTITUTION
Add 4.7ml of 0.9%sodium chloride to 250mg vial to make a 50mg/ml solution.
Add 9.4ml of 0.9%sodium chloride to 500mg vial to make a 50mg/ml solution.
FURTHER DILUTE 1ml (50mg) of reconstituted imipenem to 9ml of 0.9%sodium chloride to make a 5mg/ml solution.

ADMINISTRATION
Infuse over 30 minutes using the proximal IV bung.

STORAGE
Discard unused portion.

MONITORING
Not applicable

ADVERSE EFFECT
1. Seizures in patients with meningitis or pre-existing CNS pathology or severe renal dysfunction
2. Local reaction at the injection site
3. Thrombocytosis
4. Eosinophilia, elevated hepatic transaminases and diarrhea in over 5% of patients.
IMIPENEM cont

COMPATIBLE FLUIDS  5%dextrse, 10%dextrose, 0.9%sodium chloride

TPN COMPATIBILITY  No information. It is at the discretion of the consultant on-call.

COMPATIBLE DRUGS  No information.

COMPATIBILITY VIA Y SITE  acyclovir, diltiazem, famotidine, foscarinet, heparin, ondanesetron, tacrolimus.

INCOMPATIBLE DRUGS  allopurinol, amikacin, fluconazole, gentamicin, lorazepam, midazolam, pethidine, sodium bicarbonate, tobramycin.

REFERENCE