

Caspofungin

Antibiotic Class:

Echinocandin

Antifungal Activity:

Candida sp. including azole-resistant strains. Activity against molds difficult to quantify but includes *Aspergillus* sp Table 1, Table 2

Mechanism of Action:

Non-competitive inhibition of the enzyme β -(1,3)-glucan synthase.

Pharmacodynamics:

Echinocandins have more fungicidal effects against *Candida* species compared to filamentous organisms. In-vitro studies have demonstrated concentration-dependent fungicidal activity against *Candida* sp.

Pharmacokinetics:

Half-life: 9-11 hours; Volume of distribution: 9.67L; Clearance (total): 12ml/min; Protein binding: 97%; Table 3

Adverse Effects:

Hepatic: mild elevation in liver transaminases – dose related and reversible upon discontinuation of drug

Body as a whole: Fever

Respiratory: Wheezing, Bronchoconstriction

Dermatologic: Edema, flushing, wheals, rash

Metabolic: Hypercalcemia (Postmarketing experience)

Dosage:

Intravenous only – available as 50mg and 70mg powder for reconstitution vials.

70mg loading dose IV x 1, followed by 50mg IV q24h

Disease state based dosing:

Hepatic failure: In mild hepatic impairment, daily maintenance doses should be 35mg IV q24h

Renal failure: No dosing adjustment recommended

Drug Interactions:

Cyclosporin: Increases the AUC of Caspofungin by 35%, with associated elevations in ALT and AST elevations

Tacrolimus: Concomitant administration decreases AUC of tacrolimus by 20%. Monitoring of tacrolimus blood concentrations recommended

Other: Reductions in caspofungin concentrations may occur when coadministered with inducers of drug clearance such as efavirenz, nevirapine, phenytoin, dexamethasone, or carbamazepine. Caspofungin dose escalation may be considered in this setting

Pregnancy:

Category C: Risk unknown. Human studies inadequate.

Monitoring Requirements:

Routine monitoring of hepatic enzymes is recommended

Brand names/Manufacturer: Cancidas/Merck pharmaceuticals

Marketed as Cancidas in the following countries:

- U.S.A., United Kingdom, Australia, Chile, Sweden, Denmark, France, Israel, Finland, Belgium, Norway, Italy, Germany, Switzerland, Czech Republic, Thailand, Spain, Canada, Ireland, Hong Kong, Singapore, New Zealand