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