

Fluconazole

Antifungal Class:

Azoles

Antifungal Spectrum:

Opportunistic yeasts: *Candida albicans*, *Candida tropicalis*, *Cryptococcus neoformans*, *Candida glabrata* (variable activity)

Dermatophytes: variable activity

Dimorphic moulds: *Histoplasma capsulatum*, *Coccidioides immitis*, *Blastomyces dermatitidis*, *Parracoccidioides brasiliensis*, *Sporothrix schenckii*, *Penicillium marneffeii* (variable activity)

Mechanism of Action:

Inhibits fungal cytochrome P450 3A dependent enzyme, decreases ergosterol synthesis and inhibits cell membrane formation.

Pharmacodynamics:

AUC:MIC of the pathogen strongly correlates with efficacy in *Candida* species. This may vary in differing species.

Pharmacokinetics:

T_{max}: 1-2 hours

C_{max}: 10mcg/ml

V_d: 0.7 – 0.8 L/Kg

Total Clearance: 0.23 ml/min/Kg

Table 2

Adverse Reaction:

Gastrointestinal: nausea, vomiting, diarrhea, abdominal pain

Cardiovascular System: pallor, angioedema

Central Nervous System: headache, dizziness

Endocrine: hypertriglyceridemia, hypokalemia

Hepatic: hepatic failure, hepatitis, abnormal LFTs

Respiratory: dyspnea

Hematologic: thrombocytopenia, leukopenia

Dermatologic: skin rashes, alopecia

Dosage:

Infusion: 2 mg/mL (100 mL, 200 mL)

Powder for oral suspension: 10 mg/mL (35 mL), 40 mg/mL (35 mL)

Tablet: 50 mg, 100 mg, 150 mg, 200 mg

Invasive infections:

Adults: prophylaxis - 100 to 400 mg once daily;

Treatment - 400 to 800 mg once daily

Pediatric patients: prophylaxis: 3 to 6 mg/kg once daily

treatment: 6 to 12 mg/kg once daily

Premature neonates: prophylaxis - 72 hour dosing interval at the same dosage as older children for first two weeks of life, followed by a dosing interval of 48 hours during week 3 and 4

Disease state based dosing:

Renal failure: 50% dosage reduction in patients with CrCl 50-21 ml/min

75% dosage reduction in patients with CrCl < 21 ml/min

Initial loading dose does not need to be adjusted.

Hepatic failure: Unnecessary, however, thoughtful use of fluconazole with close monitoring of toxicity is warranted under these circumstances due to hepatic metabolism.

Dosing during Continuous Renal Replacement Therapy

CVVH (Continuous venovenous hemofiltration): 200-400mg q24h

CVVHD (Continuous venovenous hemodialysis): 400-800mg q24h

CVVHDF (Continuous venovenous hemodiafiltration) 400-800mg q24h

Note: CVVH is mainly for fluid removal alone. Many institutions will employ more CVVHD or CVVHDF which combine dialysis with fluid removal.

Note: A dose of 800mg is appropriate if the dialysate flow rate is and/or if treating fungal species with relative azole resistance such as *C. glabrata*

Contraindications/Warnings/Precautions:

Contraindications: Concurrent administration with astemizole or cisapride

Precautions: Should be used in caution in patients with renal and hepatic dysfunction or previous hepatotoxicity from other azole derivatives.

Drug Interactions:

Fluconazole is a potent inhibitor of the cytochrome P450 3A4 isoenzyme system. Caution should be exercised and monitoring is suggested when concomitantly administering fluconazole with drugs that have narrow therapeutic windows and are substrates of the CYP3A4 substrates.

Table 4

Pregnancy Risk Factor:

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Monitoring parameters:

Periodic liver function tests and renal function tests

Brand names/Manufacturer:

Many manufacturers/Brand names. [Click here for list](#)

- AFUNGIL (Senosiain - MEXICO)
- APO-FLUCONAZOLE (Apotex, CANADA)
- AZOFLUNE (Decomed - PORTUGAL)
- BEAGYNE (Effik - FRANCE)
- BIOXEL (Bioresearch - MEXICO)

- BIOZOLE (Biolab - THAILAND)
 - CANDIZOL (Ache – BRAZIL and Fustery, MEXICO)
 - CANESTEN ORAL (Bayer - UK)
 - CONASOL (United Nordic - DENMARK)
 - DIFLAZOLE (Pinewood - IRELAND)
 - DIFLAZON (KRKA – HUNGARY, CZECH REPUBLIC)
 - DIFLUCAN (Pfizer – ITALY, USA, GERMANY, NETHERLANDS, SOUTH AFRICA, SWEDEN, SWITZERLAND, CANADA, BELGIUM, SPAIN, AUSTRIA, AUSTRALIA, NORWAY, IRELAND, DENMARK, PORTUGAL, HONG KONG, MEXICO, ISRAEL, THAILAND, SINGAPORE, FINLAND, NEW ZEALAND, JAPAN, MALAYSIA, CHILE, HUNGARY, UK, CZECH REPUBLIC, CANADA)
 - DIFLUZOL (Stada - AUSTRIA)
 - DOM-FLUCONAZOLE (dominion Pharmacal CANADA)
 - ELAZOR (Sigma-Tau - ITALY)
 - FELSOL (Pasteur - CHILE)
 - FIGALOL (Biomedica-Chemica - GREECE)
 - FLUC (Hexal - GERMANY)
 - FLUCANDID (Ivax - IRELAND)
 - FLUCANOL (Rafa – ISRAEL and Zeus - BRAZIL)
 - FLUCAZOL (Cristalia - BRAZIL)
 - FLUCOBETA (Betapharm - GERMANY)
 - FLUCOL (Rowex, IRELAND)
 - FLUCOLICH (Lichtenstein - GERMANY)
 - FLUCOLTRIX (Gallia - BRAZIL)
 - FLUCONABENE (AB-Consult - AUSTRIA)
 - FLUCONAL (Libbs - BRAZIL)
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- FLUCONAZOLE (Greenstone, Apotex, Greenstone, Barr laboratories)
 - FLUCONAZOLE OMEGA (Omega Laboratories, CANADA)
 - FLUCONEO (Neo Quimica - BRAZIL)
 - FLUCOSEPT (Kwizda - AUSTRIA)
 - FLUCOXAN (Sanitas - CHILE)
 - FLUCOZAL (Aegis, HONG KONG)
 - FLUCOZEN (Cazi - BRAZIL)
 - FLUCOZOLE (Siam Bheasach, THAILAND)
 - FLUCTIN (Osteolab, CHILE)
 - FLUDIZOL (M & H - THAILAND)
 - FLUDOCEL (CPH - PORTUGAL)
 - FLUKAZOL (Kener - MEXICO)
 - FLUKENOL (Kendrick - MEXICO)
 - FLUNAZOL (Sintofarma - BRAZIL)
 - FLUNAZUL (Pfleger - GERMANY)
 - FLUNCO (TO-Chemicals - THAILAND)
 - FLUOTEC (Bergam - BRAZIL)
 - FLUSAN (Eurofarma - BRAZIL)
 - FLUSENIL (Anfarm - GREECE)
 - FLUTEK (Hexal - BRAZIL)
 - FLUZOR (Collins - MEXICO)
 - FUNA (LBS - THAILAND)
 - FUNGAL (Durascan - DENMARK)
 - FUNGATA (Mack, GERMANY and Pfizer - AUSTRIA)
 - FUNGUSTATIN (Pfizer - GREECE)
 - FUNGUSTERIL (Zekides - GREECE)
 - GEN-FLUCONAZOLE (Genpharm CANADA)
 - GLYFUCAN (Legrand, BRAZIL)

- GYNOSANT (Gerolimatos - GREECE)
 - HADLINOL (Help - GREECE)
 - HELMICIN (Sanval - BRAZIL)
 - IBARIN (Laboratorios Chile, CHILE)
 - KYRIN (Silom - THAILAND)
 - LAVISA (Lesvi - SPAIN)
 - LERTUS (Gunther - BRAZIL)
 - LOITIN (Vita - SPAIN)
 - MICOFIN (Andromaco - CHILE)
 - MONIPAX (Haller- BRAZIL)
 - MYCOMAX (Leciva, CZECH REPUBLIC)
 - MYCOSYST (Gedeon Richter – HUNGARY and CZECH REPUBLIC)
 - NEOFOMIRAL (Silanes - MEXICO)
 - NESPORAC (Cusi - SPAIN)
 - NOVO-FLUCONAZOLE (Novopharm CANADA)
 - NU-FLUCON (Nu-pharm CANADA)
 - OXIFUNGOL (Armstrong - MEXICO)
 - PANTEC (Cifarma - BRAZIL)
 - PLUSGIN (Raffo - CHILE)
 - PMS-FLUCONAZOLE (Pharmascience CANADA)
 - PRONAZOL (Diffucap - BRAZIL)
 - REFORCE (Atral - PORTUGAL)
 - RICONAZOL (Bunker - BRAZIL)
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- SOLACAP (SAT - SPAIN)
 - STABILANOL (Farmaten - GREECE)
 - STALENE (Unison - THAILAND and HONG KONG)
 - SUPREMASE (Tecnimede - PORTUGAL)
 - TAVOR (Tecnofarma - CHILE)
 - TECZOL (Hexal - BRAZIL)
 - TIERLITE (Bros - GREECE)
 - TRIAZOL (Biolab Sanus - BRAZIL)
 - TRICAN (Pfizer - ISRAEL)
 - TRIFLUCAN (Pfizer – FRANCE and ISRAEL)
 - UNIZOL (Farmoquimica - BRAZIL)
 - WAYNAZOL - (Wayne - MEXICO)
 - ZELIX (Ativus - BRAZIL)
 - ZIDONIL (Rafarm - GREECE)
 - ZOLANIX (Stiefel - BRAZIL)
 - ZOLDICAM (Rayere - MEXICO)
 - ZOLMIC (Delta - BRAZIL)
 - ZOLSTATIN (Aurantis - BRAZIL)
 - ZOLTEC (Pfizer - BRAZIL)
 - ZOLTREN (Teuto - BRAZIL)
 - ZONAL (Galen, MEXICO)