

UCDHS Therapeutic Guidelines for the Management of Common Fungal Infections in Adult Patients

FUNGAL INFECTION	PREFERRED ANTIFUNGAL THERAPY*	ALTERNATIVE ANTIFUNGAL THERAPY*	COMMENTS
Yeasts			
CANDIDEMIA AND INVASIVE CANDIDIASIS			
<u>Prophylaxis</u> for <i>Candida</i> (& <i>Aspergillus</i>) <u>Allogeneic HSCT or acute leukemia patients undergoing intensive remission-induction or salvage induction chemotherapy</u>	Posaconazole 300mg tablets daily for high risk patients Fluconazole for low risk patients	Isavuconazole IV if not taking orals Micafungin IV Fluconazole, low risk only	
<u>Empiric Treatment</u> Low Risk for Non-albicans <i>Candida</i> (ANC > 500, clinical stable, non-ICU, not receiving high dose corticosteroids)	Micafungin 100mg IV daily (In low risk patients may step down to fluconazole after 5-7 days if <i>Candida</i> susceptible to fluconazole and blood culture clearance demonstrated)	Fluconazole 800mg loading dose, then 400 mg once daily, consider oral therapy for step-down (acceptable in patients with low risk for resistant <i>Candida</i> sp. and not critically ill)	Remove and Replace Intravascular Catheters.
<u>Empiric Treatment</u> High Risk for non-albicans <i>Candida</i> (Immunocompromised, hemodynamic instability or ICU, recent history of fluconazole exposure, e.g. 3 months)	Micafungin 100mg IV daily	Ambisome® 3-5 mg/kg IV daily Voriconazole 6mg/kg IV q12h x 2, then 4mg/kg IV q12h (if need mold coverage while avoiding nephrotoxicity)	Remove and Replace Intravascular Catheters.
<u>Definitive treatment</u> <i>C. albicans</i> (germ tube positive), <i>C. tropicalis</i> , and <i>C. parapsilosis</i>	Micafungin 100mg IV daily (In low risk patients may step down to fluconazole after 5-7 days if <i>Candida</i> susceptible to fluconazole and blood culture clearance demonstrated)	Fluconazole 800mg loading dose, then 400 mg once daily, consider oral therapy for step-down (acceptable in patients with low risk for resistant <i>Candida</i> sp. and not critically ill)	Remove Catheters. Treat at least 14 days from 1 st negative blood culture. Consider change to oral fluconazole when stable and blood cultures cleared.
<u>Definitive treatment</u> <i>C. glabrata</i> , <i>C. krusei</i> , <i>C. guilliermondii</i> , and <i>C. lusitaniae</i>	Micafungin 100mg IV daily x 14 days from 1 st negative blood culture	Ambisome® 3-5 mg/kg IV daily (except <i>C. lusitaniae</i>)	Remove Catheters. Treat at least 14 days from 1 st negative blood culture. Can consider oral voriconazole for step-down
OROPHARYNGEAL, ESOPHAGEAL CANDIDIASIS AND NOSOCOMIAL CANDIDURIA			
OROPHARYNGEAL CANDIDIASIS (acute, no previous episodes)	Fluconazole 100-200mg po daily x 7-14 days	Mild: Topical Nystatin or Clotrimazole Mod-severe: Itraconazole 200mg po daily, Micafungin 150mg IV daily	Use itraconazole, voriconazole, or micafungin for treatment refractory to fluconazole
OROPHARYNGEAL CANDIDIASIS (recurrent, > 3 episodes per year)	Fluconazole 200-400mg po daily x 14 days	Itraconazole 200mg po daily, Voriconazole 200mg po bid, Micafungin 150mg IV daily	Use itraconazole, voriconazole, or micafungin for fluconazole failure while on therapy.
ESOPHAGEAL CANDIDIASIS	Fluconazole 400mg po/ IV x1, then 200-400mg po/ IV daily x 14-21 days	Itraconazole 200mg po daily Voriconazole 200mg po bid Micafungin 150mg IV daily	Use itraconazole, voriconazole or micafungin for fluconazole failure while on therapy.
NOSOCOMIAL CANDIDURIA <u>Indications for Treatment:</u> Immunocompromised (ANC < 500), history of renal transplantation	Fluconazole 100-200mg IV/PO daily x 14 days	Amphotericin B deoxycholate bladder irrigations x 5 days	Often seen with indwelling catheters and long term antibiotic therapy: clinical studies have shown limited to no benefit to therapy in most cases (see references). Remove catheter if feasible.

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CRYPTOCOCCUS			
Cryptococcus meningitis, HIV patients	AmBisome® 3-5mg/kg IV daily + Flucytosine 25mg/kg po q6h x 2 weeks, then Fluconazole 400mg po daily for ≥ 8 weeks, then Fluconazole 200mg po daily	AmBisome® x 4-6 weeks. AmBisome® + Fluconazole 800mg IV daily for 2 weeks, then Fluconazole 800mg po for ≥ 8 weeks. Fluconazole 800-1200mg IV/PO daily (12mg/kg) ± Flucytosine 25mg/kg po q6h.	See IDSA guidelines for details and recommendations for other patient populations (e.g. organ transplant recipients, non-HIV patients, etc.)
Non-meningeal Cryptococcus, non-HIV patients	Mild-Mod: Fluconazole 400mg IV/PO daily (6mg/kg) x 6-12 mo. Severe: treat similar to meningeal (see above)	Mild-Mod: Itraconazole or Voriconazole Severe: treat similar to meningeal (see above)	See IDSA treatment guidelines for details.
Dimorphic Fungi			
COCCIDIOIDOMYCOSIS			
Uncomplicated Primary Infection	Routine antifungals not warranted		
Uncomplicated Primary Infection in patients with risk factors: HIV, transplantation, pregnancy, diabetes, corticosteroids, Filipino/African decent	Fluconazole 400-800mg IV/PO daily for 3-12 months	Itraconazole 200-400mg PO daily for 3-12 months	3rd trimester of pregnancy has the highest risk during pregnancy. Persons of Filipino or African descent have a higher risk for dissemination.
Patients with coccidioidal cavities and chronic fibrocavitory pneumonia	Fluconazole 400-800mg IV/PO daily for ≥ 1 year	Ambisome® OR Itraconazole OR Voriconazole	Asymptomatic patients may not require therapy.
Disseminated Infection (Non-meningeal)	Fluconazole 400-1200mg IV/PO daily (6-12mg/kg/d) for ≥ 1 year	Itraconazole (up to 800mg po daily); Ambisome® x 14 days, then fluconazole, itraconazole or voriconazole	Combination of Ambisome® (deoxycholate or liposomal) + fluconazole may be required for severe disease.
Disseminated (Meningitis)	Fluconazole 400-1200mg IV/PO daily (6-12mg/kg/d) for life	Ambisome® x 14 days, then fluconazole OR voriconazole	Consider IV ± intrathecal Amphotericin B deoxycholate for severe disease / poor fluconazole response.
Moulds (Molds)			
Invasive Aspergillosis	Voriconazole 6mg/kg IV q12h x 2 doses, then 4mg/kg IV q12h (200mg po q12h step-down) OR Isavuconazole 372mg po/IV q8h x 6 doses, then 372mg po/IV daily	Amphotericin B Liposomal 5mg/kg IV daily	Combination therapy (e.g. voriconazole + micafungin), but may be considered for salvage therapy – consult ID.
Allergic bronchopulmonary Aspergillosis (ABPA)	Itraconazole 200mg three times a day, then 200mg twice a day. Capsule with food, solution without (corticosteroid sparing effect)	Voriconazole 400mg po every 12 hours x2 doses then 200mg po bid OR Posaconazole 300mg po daily	Corticosteroids are a cornerstone of therapy.
Mucormycosis [Mucor, Rhizopus, Lichtheimia (Absidia)]	Amphotericin B Liposomal 5mg/kg IV daily (Higher doses may be required) +/- micafungin 100mg IV daily	Posaconazole 300mg po daily OR Isavuconazole IV	Consider combination therapy for Tx failure (salvage therapy) – Consult ID.

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Empiric Febrile Neutropenia	Amphotericin B Liposomal 3-5mg/kg IV daily	Voriconazole, Micafungin	Consult infectious diseases.
Fungal Prophylaxis in HSCT, AML, high risk ALL or MDS during induction/consolidation	Posaconazole 300mg po q12h x 1 day, then 300mg po daily	Voriconazole IV or isavuconazole IV	See UCDHS fungal prophylaxis in HSCT guidelines/references for more details.

***Antifungals requiring Infectious Diseases Consultation:**

Amphotericin B Liposomal, voriconazole, IV posaconazole, IV isavuconazole

Antifungals requiring ID Authorization:

Posaconazole oral for all uses outside of HSCT, AML induction

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