Candidiasis: Treatment by Clinical Syndrome

Candidemia, deep-organ/device infections, neonatal disease, urinary tract, and mucosal (vulvovaginal/oropharyngeal/esophageal) candidiasis — first-line and alternative antifungal regimens.

2016 IDSA Clinical Practice Guideline
Management of Candidiasis
Pappas, Kauffman, Andes et al. · Clin Infect Dis 2016;62(4):e1-50

FORMAT *17 clinical questions / 140 recommendations condensed to syndrome-based first-line & alternative regimens — all GRADE-rated (strong/weak; quality varies). Consult full text for complete detail.*

1 Candidemia & ICU Empiric Therapy

SYNDROME	REGIMEN
Nonneutropenic	Echinocandin first-line; fluconazole load 800 mg then 400 mg/d if stable & unlikely fluconazole-resistant. Step down to fluconazole @5–7 d if susceptible/stable/cultures clear. 2 wk after clearance + sx resolution. Dilated eye exam within 1 wk; daily/qod blood cultures until cleared; remove CVC ASAP if source.
Neutropenic	Echinocandin or lipid AmB first-line; fluconazole alt if not critically ill/no prior azole. Same 2-wk duration after clearance + neutropenia/sx resolve. Eye exam after neutrophil recovery. CVC removal individualized (GI source common). G-CSF granulocyte transfusion for persistent candidemia with anticipated prolonged neutropenia.
ICU empiric	Start echinocandin (or fluconazole if no recent azole exposure) as soon as possible in critically ill patients with risk factors + no other fever source, especially with septic shock. 2 wk if improves; stop at 4–5 d if no response and no evidence of IC.
ICU prophylaxis	Consider fluconazole 800 mg load then 400 mg/d (or echinocandin) in high-risk adult ICUs with >5% invasive candidiasis rate. Daily chlorhexidine bathing may reduce bloodstream infections.

2 Deep-Organ & Device Infections

SYNDROME	REGIMEN
Intra-abdominal	Empiric therapy for abdominal infection + risk factors (recent surgery, anastomotic leak, necrotizing pancreatitis); same drugs as candidemia/empiric ICU. Source control (drainage/debridement) essential; duration by response.
Chronic disseminated (hepatosplenic)	Lipid AmB or echinocandin several weeks → oral fluconazole step-down. Continue until imaging resolves (often months) — premature discontinuation risks relapse. Don't delay chemo/HSCT; continue antifungal through high-risk period. Short NSAID/steroid course for debilitating persistent fever.
Endocarditis	Native/prosthetic valve: lipid AmB ± flucytosine OR high-dose echinocandin initial; step down to fluconazole if susceptible/stable/cleared. Valve replacement recommended + ≥6 wk postop therapy; chronic fluconazole suppression if replacement not feasible or for prosthetic valves.
Cardiac devices	Pacemaker/ICD: remove entire device + endocarditis-regimen therapy. Generator pocket only: 4 wk after removal. Wire involvement: ≥6 wk after removal. Unremovable VAD: endocarditis regimen + chronic fluconazole suppression while device remains.
Suppurative thrombophlebitis	Catheter removal + I&D/vein resection if feasible. Lipid AmB, fluconazole, or echinocandin ≥2 wk after candidemia clears; step down to fluconazole if stable/susceptible; thrombus resolution supports stopping therapy.
Osteomyelitis	Fluconazole 6–12 mo, OR echinocandin ≥2 wk → fluconazole 6–12 mo. Lipid AmB → fluconazole less preferred. Surgical debridement in selected cases.
Septic arthritis	Fluconazole 6 wk, OR echinocandin 2 wk → fluconazole ≥4 wk. Surgical drainage always indicated; remove prosthetic device (chronic fluconazole suppression if device cannot be removed).
Endophthalmitis	Dilated retinal exam in all candidemic patients (1 wk nonneutropenic; after count recovery if neutropenic). Chorioretinitis: fluconazole/voriconazole (or liposomal AmB ± flucytosine if resistant) ≥4–6 wk; add intravitreal AmB or voriconazole if macular involvement or vitritis present; consider vitrectomy with vitritis.
CNS candidiasis	Liposomal AmB ± flucytosine initial → fluconazole step-down once responding. Remove infected CNS devices (shunts, drains, stimulators) if possible. Continue until all signs/symptoms/CSF/radiographic abnormalities resolve.

3 Neonatal Candidiasis

SYNDROME	REGIMEN
Disseminated/CNS	AmB deoxycholate 1 mg/kg/d first-line; fluconazole 12 mg/kg IV/PO alt if no prior prophylaxis. LP + dilated retinal exam if blood/urine culture positive; CT/US of GU tract, liver, spleen if persistently positive. CVC removal strongly recommended. 2 wk after clearance + sx resolution.
NICU prophylaxis	Fluconazole 3–6 mg/kg twice weekly × 6 wk if nursery IC rate >10% and birth weight <1000 g. Oral nystatin alt if BW <1500 g and fluconazole unavailable/resistant.

4 Urinary Tract Candidiasis

SYNDROME	REGIMEN
Asymptomatic candiduria	Remove predisposing factors (catheter) — do NOT treat unless high-risk (neutropenic, VLBW infant, pre-urologic procedure). High-risk: treat as candidemia, or fluconazole/AmB deoxycholate periprocedurally.
Cystitis	Fluconazole 200 mg/d × 2 wk if susceptible. Fluconazole-resistant C. glabrata: AmB deoxycholate 1–7 d or oral flucytosine 7–10 d. C. krusei: AmB deoxycholate 1–7 d. Remove indwelling catheter if feasible.
Pyelonephritis	Fluconazole 200–400 mg/d × 2 wk if susceptible. Resistant C. glabrata: AmB deoxycholate ± flucytosine. C. krusei: AmB deoxycholate. Relieve obstruction; consider removing/replacing nephrostomy tubes/stents.
Fungus balls	Surgical intervention strongly recommended (adults); antifungal as for cystitis/pyelonephritis; AmB deoxycholate nephrostomy irrigation if tubes present.

5 Mucosal Candidiasis

SYNDROME	REGIMEN
Vulvovaginal	Uncomplicated: topical azole or single-dose oral fluconazole 150 mg. Severe: fluconazole 150 mg q72h × 2–3 doses. C. glabrata: boric acid, nystatin suppositories, or flucytosine/AmB cream. Recurrent: induction then fluconazole 150 mg weekly × 6 mo.
Oropharyngeal	Mild: clotrimazole troches or miconazole buccal tablet × 7–14 d. Moderate–severe: fluconazole 100–200 mg/d × 7–14 d. Refractory: itraconazole/posaconazole/voriconazole/AmB suspension. Suppressive: fluconazole 100 mg 3×/wk. HIV: start ART.
Esophageal	Systemic therapy always required; diagnostic trial reasonable before endoscopy. Fluconazole 200–400 mg/d × 14–21 d (PO or IV if intolerant); refractory: itraconazole, voriconazole, echinocandin, or AmB deoxycholate × 14–21 d. Recurrent: fluconazole 100–200 mg 3×/wk suppression.

Pappas PG, Kauffman CA, Andes DR, et al. Clinical Practice Guideline for the Management of Candidiasis: 2016 Update by the Infectious Diseases Society of America. *Clin Infect Dis.* 2016;62(4):e1–50.