

Diagnosis

Oral candidiasis can be diagnosed with a potassium hydroxide preparation and culture with microscopic demonstration of budding yeast cells in wet mounts or biopsy specimens. Esophageal candidiasis has a classic cobblestone appearance on barium swallow. Findings on endoscopy may range from a few, small, raised, white plaques to elevated confluent plaques with hyperemia and extensive ulceration. Endoscopy is also helpful for ruling out other causes of refractory esophagitis, such as HSV, CMV, and *Mycobacterium avium* complex.

Candidemia is best diagnosed with blood cultures using lysis-centrifugation techniques,³ or automated broth-based systems.⁹ When candidemia is present, retinal examination for endophthalmitis, cardiac echocardiogram for endocarditis, abdominal computed tomography or ultrasound for hepatic or renal involvement, and bone scans for osteomyelitis (if suspected by symptoms) should be considered.

New diagnostic techniques such as the urine D-arabinitol/L-arabinitol ratio,^{10,11} serum D-arabinitol/creatinine ratio,^{12,13} *Candida* mannan antigen and anti-mannan antibody,^{14,15} (1,3)-beta-D-glucan assay,^{16,17} T2 biosystems for *Candida*¹⁸ and real-time polymerase chain reaction^{19,20} are promising diagnostic alternatives under development for early diagnosis of invasive candidiasis. Although several of these assays are helpful in diagnosing invasive candidiasis in adult patients, none of them have been validated or Food and Drug Administration (FDA)-approved for use in children.

As noted above, candidemia can result in dissemination of infection to any organ site. There are no pediatric data to guide decisions on when to perform additional diagnostic testing to evaluate for a deep-seated focus. However, among children with persistent candidemia, further investigation for dissemination should strongly be considered. Additional diagnostics to consider in this clinical scenario would include, but not be limited to, an echocardiogram, abdominal ultrasound to evaluate the kidney, liver and spleen, a lumbar puncture and an eye exam (**strong, low**).

Prevention Recommendations

Preventing Exposure

Candida organisms are common commensals on mucosal surfaces in healthy individuals; no measures are available to reduce exposure to these fungi except by reducing exposure to unneeded antibiotics that may predispose a patient to *Candida* colonization.

Preventing First Episode of Disease

Routine primary prophylaxis of candidiasis in infants and children with HIV infection is not indicated for multiple reasons. In the era of ART, the prevalence of serious *Candida* infections (e.g., esophageal or invasive candidiasis) is low. Additionally, there is a lack of randomized controlled trials of routine, primary prophylaxis of candidiasis in children with HIV infection, concern for potentiating resistant *Candida* strains, and the potential for drug-drug interactions between antifungal and antiretroviral (ARV) agents.²¹

Discontinuing Primary Prophylaxis

Not applicable.

Treatment Recommendations

Treating Disease

Oropharyngeal Candidiasis

Early, uncomplicated infection can be effectively treated with topical therapy using clotrimazole troches or oral nystatin suspension for 7 to 14 days (**strong, high**).²²⁻²⁵ Debridement can be considered as adjunctive