

## FAST FACTS AND CONCEPTS #147 OROPHARYNGEAL CANDIDIASIS

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**Background** Oropharyngeal candidiasis (thrush) occurs commonly in seriously ill and dying patients.

**Risk Factors** Risk factors include a) either acquired (HIV-AIDS) or drug-induced (chemotherapy, inhaled or systemic glucocorticoids) defects of cell-mediated immunity; b) disruption of the oropharyngeal mucosa by cytotoxic chemotherapy (See Fast Fact #121) or radiation that includes the oropharynx; c) xerostomia (dry mouth) from any cause; d) diabetes mellitus; e) recent antibiotic use; f) dentures; g) advanced age; h) poor oral hygiene; and i) poor nutritional status.

**Diagnosis** Thrush is often asymptomatic but can lead to oral pain, oropharyngeal dysphagia, halitosis, alterations in taste, diminished appetite, and reduced oral intake. Thrush may or may not be present in cases of esophageal candidiasis, which presents as odynophagia and esophageal dysphagia. Most cases of thrush are caused by *Candida albicans*; *C. krusei*, *glabrata*, or *tropicalis* are sometimes implicated in AIDS and cancer patients. Diagnosis is made on clinical findings: white or yellow, cottage-cheese like plaques on the buccal mucosa, tongue, or palate. The plaques are easily removed, leaving a red or bleeding and often painful base. A less common presentation – seen in AIDS or in patients with poorly fitting dentures – involves red, edematous, and sometimes eroded mucosal lesions, but without plaques. If diagnostic doubt exists, confirmation can be made by KOH staining a wet-prep of a plaque scraping, revealing pseudohyphal Candidal forms. Culture is not recommended, as *Candida* species are common colonizers of the mouth.

**Treatment** The decision to treat thrush should be based on the patient's overall condition, prognosis, symptoms, and goals of care. Treatments include either systemic or topical anti-fungal drugs. All regimens should be continued for 7-14 days. Meticulous attention to denture cleaning, if applicable, is important to prevent recurrence. If esophageal candidiasis is suspected, systemic therapy is necessary as topical treatment is ineffective.

Topical drugs are the most commonly used but problems can occur due to patient objections to taste and compliance with multiple daily dosing.

- Nystatin suspension (“swish and swallow”) is dosed as 200,000-500,000 Units 4 - 5 times a day. It is substantially less effective in immunocompromised patients than the azole anti-fungals (30-50% vs 70-90% effective) and should not be used in this population.
- Clotrimazole (10 mg troches 5 times a day) is nearly as effective as the systemic azole anti-fungals; however, it is associated with a higher recurrence rate of thrush.
- Systemic drugs are more effective than the topicals. However they are more expensive and have significant drug-drug interactions—especially with macrolide antibiotics, anticonvulsants, benzodiazepines, methadone, and coumadin.
- Fluconazole is the systemic treatment of choice; it is more effective with fewer drug interactions than ketoconazole. Many dosing regimens have been described: 200 mg once, then 100 mg daily for 14 days total is most commonly used.
- Itraconazole suspension (200 mg daily) is an alternative to fluconazole. It is better absorbed and more effective than itraconazole capsules.
- **Note:** Fluconazole resistant candidiasis is rare, but becoming more common. Itraconazole, IV or oral amphotericin, voriconazole, and caspofungin have all been used with success.

**Recommendations** Clotrimazole troches are a reasonable first line therapy for patients in the palliative care setting if the troches are tolerable and 5 times a day dosing is acceptable. If not, and/or if the patient has problems with recurrent thrush, fluconazole should be used.

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