How should you treat *Candida* vaginitis in patients on antibiotics?

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Evidence-based answer

Oral and intravaginal antifungals for the treatment of uncomplicated vulvovaginal candidiasis (VVC) have similar effectiveness (strength of recommendation [SOR]: **A**, systematic review). However, no randomized controlled trials (RCTs) have addressed treatment options for patients taking antibiotics. Oral antifungals are contraindicated in pregnancy. While shorter courses of intravaginal therapy can be used by nonpregnant women, 7-day treatment may be necessary during pregnancy (SOR: **A**, systematic review). Products containing *Lactobacillus* species do not prevent postantibiotic vulvovaginitis (SOR: **A**, systematic review and RCT).

Clinical commentary

Most women would rather prevent than treat

Many women complain about getting yeast infections after receiving antibiotics. Usually the patient will inform me of this while I'm writing the prescription for the antibiotic, asking for Diflucan "just in case." Women prefer the convenience of the oral medicine over the hassle with topical applications. Some state that 1 dose of Diflucan does not cut it, and that they usually need 2. As a result, I find myself writing a prescription for Diflucan to be started along with the antibiotic, and then to be repeated as a second dose in 3 days. I have not heard any complaints from these patients about postantibiotic yeast infections.

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Both oral and topical antifungals have clinical cure rates >80%

Evidence summary

VVC is a common cause of vaginitis; *Candida albicans* accounts for 85% to 90% of cases. Risk factors include pregnancy, diabetes mellitus, and systemic antibiotics.[1] Incidence increases with onset of sexual activity, but there is no direct evidence it is sexually transmitted.[1] About 75% of women experience 1 VVC episode during their lifetime, 40% to 45% have 2 or more, and 5% to 8% have recurrent VVC (defined as 4 or more annually).[1,2]

The candidiasis/antibiotics link

A 2003 systematic review found the evidence supporting the association between antibiotics and VVC limited and contradictory.[3] Most were case-control or cohort studies with small sample sizes. No RCTs compare the incidence of culture-confirmed VVC among women receiving antibiotics or placebo.

Nineteen reports of 18 original studies had sufficient data to calculate a relative risk or odds ratio for antibiotic-associated

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Products containing *Lactobacillus* do not prevent candidiasis

VVC. Thirteen of the 19 reports showed an increase (around twofold; range, 0.43–5) in vaginal *Candida* prevalence; however, 3 of the 13 reports had no mycological culture data. Six studies did not show significant association between antibiotics and vaginal yeast.[3]

Antibiotics are thought to increase risk of VVC by killing endogenous vaginal flora (particularly *Lactobacillus*), allowing microorganisms resistant to the antibiotics, like *Candida,* to flourish.[1] Yet there is evidence that numbers of genital *Lactobacillus* are similar for women with and without symptomatic VVC.[4] Further, decreasing *Lactobacillus* does not increase the risk of VVC.[5]

Topical and oral antifungals—both do the job

For the treatment of uncomplicated VVC, both topical and oral antifungals are clinically and mycologically effective, with comparable clinical cure rates >80%.[6] No difference in persistent symptoms between single and multiple doses, or different durations of multiple dose regimens have been found, but samples may have been too small to detect clinically significant effects. An RCT found less nausea, headache, and abdominal pain with intravaginal imidazoles, but more vulvar irritation and vaginal discharge than oral fluconazole.[6]

For treatment of recurrent VVC, RCTs have shown the effectiveness of oral fluconazole and itraconazole maintenance therapy taken for 6 months after an initial regimen.[7,8] Treating male sexual partners did not significantly improve resolution of the woman's symptoms or reduce the rate of symptomatic relapse.[9]

Yogurt may not live up to its rep

Two poor-quality crossover RCTs provided insufficient evidence regarding effectiveness of a diet containing oral *Lactobacillus* yogurt to prevent recurrent VVC.[9] A recent RCT of 278 women on short courses of antibiotics were randomized to oral lactobacilli or placebo and vaginal lactobacilli or placebo.[10] The study was stopped early because there was no effect seen. Overall, 23% developed symptomatic vulvovaginitis.

Recommendations from others

The Infectious Diseases Society of America[11] recommends treating uncomplicated VVC with short-course of oral or topical antifungals; treating complicated VVC with antimycotic therapy for 7 days, either daily as topical therapy or as two 150-mg doses of fluconazole 72 hours apart; treating non-*albicans* species of *Candida* with topical boric acid (600 mg/day for 14 days) or topical flucytosine; and treating recurrent VVC with induction therapy with 2 weeks of a topical or oral azole followed by a maintenance regimen for 6 months (fluconazole once a week or itraconazole twice a week).[11] ■

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