



## VULVOVAGINAL CANDIDIASIS

<b>DEFINITION</b>	Infection of the vagina with fungal organisms leading to symptoms of pruritis, external dysuria, and abnormal discharge.
<b>SUBJECTIVE</b>	May include: <ol style="list-style-type: none"><li>1. Vaginal discharge with or without vulvar and/or vaginal pruritis, burning, soreness or odor.</li><li>2. History of recent use of antibiotics, oral contraceptives, or other drugs.</li><li>3. Dyspareunia.</li><li>4. Vulvar and/or vaginal irritation or excoriation.</li><li>5. External Dysuria.</li><li>6. History of diabetes mellitus, HIV, or immunocompromising diseases or medication.</li><li>7. History of recent herpetic outbreak or treatment for venereal warts.</li></ol>
<b>OBJECTIVE</b>	May include: <ol style="list-style-type: none"><li>1. Erythematous, swollen labia +/- excoriations.</li><li>2. Tender, erythematous vagina.</li><li>3. Semi-adherent, curdy, white discharge present on vaginal walls, cervix and/or vulva.</li></ol>
<b>LABORATORY</b>	May include: <ol style="list-style-type: none"><li>1. Microscopic evaluation of vaginal side wall swabbing or vulvar scraping reveals monilial hyphae and spores. If difficulty is encountered visualizing characteristic microbes due to cellular debris, addition of <b>10%</b> potassium hydroxide to slide may be useful.</li><li>2. Vaginal pH 4.0 - 5.0.</li><li>3. Negative KOH "Whiff" test.</li><li>4. Nickerson culture if diagnosis is strongly suspected but wet mount is negative.</li><li>5. May consider vaginal culture with recurrent vulvovaginitis to identify unusual yeast species including non-albicans species.</li><li>6. Blood sugar and/or urine dipstick.</li><li>7. HIV testing.</li></ol>
<b>ASSESSMENT</b>	Vulvovaginal Candidiasis
<b>PLAN</b>	<ol style="list-style-type: none"><li>1. For women with uncomplicated vulvovaginal candidiasis: Intravaginal agents use one of the following:<ol style="list-style-type: none"><li>a. Butoconazole 2% cream 5 g intravaginally for 3 days (OTC).</li><li>b. Butoconazole 2% cream 5 gm (Butaconazole 1 – sustained release) single intravaginal applicator.</li><li>c. Clotrimazole 1% cream 5 gm intravaginally for 7-14 days (OTC).</li><li>d. Clotrimazole 2% cream 5 gm intravaginally for 3 days (OTC).</li></ol></li></ol>

<p><b>PLAN</b> <b>(continued)</b></p>	<ul style="list-style-type: none"> <li>e. Miconazole 2% cream 5 gm intravaginally for 7 days (OTC).</li> <li>f. Miconazole 4% cream 5 gm intravaginally for 3 days (OTC)</li> <li>g. Miconazole 100 mg vaginal suppository, one suppository for 7 days (OTC).</li> <li>h. Miconazole 200 mg vaginal suppository, one suppository for 3 days (OTC).</li> <li>i. Miconazole 1,200 mg vaginal suppository, one suppository for 1 day (OTC).</li> <li>j. Nystatin 100,000 unit vaginal tablet, one tablet for 14 days.</li> <li>k. Tioconazole 6.5% ointment 5 gm intravaginally in a single application (OTC).</li> <li>l. Terconazole 0.4% cream 5 g intravaginally for 7 days.</li> <li>m. Terconazole 0.8% cream 5 g intravaginally for 3 days.</li> <li>n. Terconazole 80 mg vaginal suppository, one suppository for 3 days.</li> </ul> <p>Oral Agent:</p> <ul style="list-style-type: none"> <li>a. Fluconazole 150 mg (po) tablet, one tablet in a single dose.</li> </ul> <ol style="list-style-type: none"> <li>2. Recurrent vulvovaginal candidiasis: Defined as 4 or more episodes each year.       <ul style="list-style-type: none"> <li>a. Each individual episode responds well to short duration of oral or topical azole therapy. However, to maintain clinical and mycologic control – recommend a longer duration of initial therapy before initiating maintenance regimens such as:           <ul style="list-style-type: none"> <li>- 7 – 14 days of topical therapy, OR</li> <li>- Fluconazole 150 mg (po) dose every 3<sup>rd</sup> day for a total of 3 doses, OR</li> <li>- Boric acid suppositories (600 mg/day vaginally for 14 days). Very helpful for treating <i>C. Glabrata</i> and <i>C. Tropicalis</i>, particularly in diabetic women.</li> </ul> </li> <li>b. Maintenance Regimens – Can be used and should be continued for 6 months. They include:           <ul style="list-style-type: none"> <li>- Clotrimazole 500 mg dose vaginal suppositories once weekly.</li> <li>- Fluconazole 100 mg, 150mg, or 200 mg dose once weekly (this is first line of treatment).</li> <li>- Evaluate immune status.</li> </ul> </li> <li>c. Consider referral of partner for evaluation and treatment to R/O balanitis.</li> </ul> </li> <li>3. Severe vulvovaginitis: defined as extensive vulvar erythema, edema, excoriation and fissure function.       <ul style="list-style-type: none"> <li>a. Responds better to longer therapy:           <ul style="list-style-type: none"> <li>- 7-14 days of topical azole therapy, OR</li> <li>- Fluconazole 150 mg in 2 sequential doses, second dose 72 hours after initial dose.</li> </ul> </li> <li>b. Adjunctive treatment with a weak topical steroid, such as 1% hydrocortisone cream, may be helpful in relieving some the external symptoms.</li> </ul> </li> <li>4. Compromised Host: defined as women with underlying debilitating medical conditions such as uncontrolled diabetes or those receiving corticosteroid treatment.       <ul style="list-style-type: none"> <li>a. Respond better to 7-14 days of treatments with topical azole.</li> <li>b. Efforts to correct modifiable conditions should be made.</li> </ul> </li> <li>5. Pregnancy:       <ul style="list-style-type: none"> <li>a. Only topical azole therapies applied for 7 days are recommended</li> </ul> </li> <li>6. HIV infection:       <ul style="list-style-type: none"> <li>a. Treatment should not differ from that of HIV negative women.</li> </ul> </li> </ol>
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<b>PLAN (continued)</b>	<ol style="list-style-type: none"> <li>7. For women with a history of diagnosed yeast and currently complaining of symptoms via phone may: <ol style="list-style-type: none"> <li>a. Advise purchase of OTC products.</li> <li>b. Offer fluconazole or other prescription topical azole therapy.</li> <li>c. Advise infection check if continued symptoms after treatment.</li> </ol> </li> </ol>
<b>CLIENT EDUCATION</b>	<ol style="list-style-type: none"> <li>1. Provide education handout, review symptoms, treatment options, vaginal health principles.</li> <li>2. Advise to avoid intercourse during treatment (vaginal therapies may weaken latex condoms).</li> <li>3. Stress importance not to interrupt treatment during menses and not to use tampons during treatment with vaginal therapies.</li> <li>4. Counsel on importance of perineal hygiene.</li> <li>5. Advise partner to self-treat if symptomatic.</li> <li>6. Recommend client RTC if symptoms persist, or recur within 2 months of onset of initial symptoms.</li> </ol>
<b>CONSULT / REFER TO PHYSICIAN</b>	<ol style="list-style-type: none"> <li>1. Persistent or recurrent infection unresponsive to treatments applied.</li> <li>2. Extreme excoriation.</li> </ol>

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1. Centers for Disease Control and Prevention. Sexually Transmitted Diseases Treatment Guidelines 2010 MMWR 2010, 59 (No. RR-12): pp. 61-63.
2. Ray, D., Goswami, R., Banerjee, U., Dadhwal, V., Goswami, D, Mandal, P., Sreenivas, V., & Kochupillai, N. (2007). Prevalence of Candida glabrata and its response to boric acid vaginal suppositories in comparison with oral fluconazole in patients with diabetes and vulvovaginal candidiasis. Diabetes Care, 30(2), 312-317.
3. Berek, Jonathan S., Berek & Novak's Gynecology 14th Edition. Lippincott, Williams, & Wilkins 2007. Genitourinary Infections & Sexually Transmitted Diseases. Vulvovaginal Candidiasis. pp 547-549.
4. Nurse Practitioners' Prescribing Reference Spring 2010. Haymarket Media Publication, New York, NY. Vaginal Infections. pp 237-239.