VULVOVAGINAL CANDIDIASIS (VVC)

SCOPE
RNs may diagnose and recommend over-the-counter (OTC) treatment for vulvovaginal candidiasis (VVC).

ETIOLOGY
VVC is a common clinical condition with symptoms and signs of vulvar and/or intravaginal inflammation (commonly known as a ‘yeast infection’) in the presence of Candida species. The most common cause of VVC is Candida albicans (C. albicans); however, non-albicans Candida (NAC) species are emerging (e.g., C. glabrata, C. tropicalis, C. parapilosis).

EPIDEMIOLOGY
VVC is the second most common cause of vaginitis. It is estimated that 75% of people will have at least one episode of VVC in their lifetime and 40-45% will experience two or more episodes. Rarely occurs before menarche, VVC incidence peaks during reproductive years and declines following menopause (unless person is on hormone-replacement therapy [HRT]). Incidence and prevalence is difficult to determine, and varies between countries and ethnicities.

Risk Factors
- antibiotic use
- corticosteroid use
- diabetes
- HIV infection
- hyperestrogenemia (e.g., HRT, combined OCP)
- immunocompromised
- pregnancy
- not usually considered sexually transmitted
CLINICAL PRESENTATION

- abnormal changes vaginal discharge; odourless vaginal discharge may appear white, clumpy, thick and/or curdy
- vulvar and/or intravaginal itch, irritation and/or burning
- superficial dyspareunia (usually at the vaginal introitus)
- external dysuria
- vulvar and/or vaginal erythema and/or edema
- vulvar fissures, dryness, cracks in skin and/or excoriation

For people who are peri-menopausal or in menopause, consider consultation with or referral to MD or NP for differential diagnosis and alternate treatment options.

PHYSICAL ASSESSMENT

- assess vulva and vagina for erythema and edema
- assess vulvar skin for fissures, dryness, cracks or excoriation (e.g., labial folds)
- assess vaginal discharge
- assess vaginal pH (is typically $\leq 4.5$ with VVC), if available
- perform KOH Whiff test (which is typically negative with VVC), if available

DIAGNOSTIC AND SCREENING TESTS

Depending on the agency lab kits and guidelines, the following diagnostic tests that may be used:

<table>
<thead>
<tr>
<th>Specimen</th>
<th>Tests</th>
</tr>
</thead>
<tbody>
<tr>
<td>vaginal swab (client- or clinician-collected)*</td>
<td>vaginal swab or smear on slide for gram stain</td>
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<tr>
<td></td>
<td>vaginal pH</td>
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<td></td>
<td>KOH whiff test</td>
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</tbody>
</table>

*For people on testosterone or after vaginoplasty, refer to the [STI Assessment DST](#) for recommended diagnostic tests.

Notes:

- If a client does not require or defers a pelvic examination, then a blind vaginal swab may be collected (by the client or the clinician).
- For more information on KOH whiff testing see: [Safe Use of 10% Potassium Hydroxide in STI Screening](#) located in the BCCDC Communicable Disease Control (CDC) Manual Chapter 5: Sexually Transmitted Infections.
MANAGEMENT

Diagnosis and Clinical Evaluation

The diagnosis and treatment of VVC is made based on the health history and clinical findings.

Positive lab results support a diagnosis for symptomatic clients. Because yeast can be a normal finding in vaginal flora, positive lab results for asymptomatic clients do not support diagnosis or treatment of VVC.

Consultation and Referral

Consult with or refer to a physician (MD) or nurse practitioner (NP) all clients who:

- have complicated VVC, which includes:
  - recurrent VVC (RVVC): 4 or more previously treated episodes of VVC within one year
  - severe VVC (vulvar erythema, edema, excoriation & fissure formation)
- are pregnant or breast-/chest-feeding
- have experienced more than two episodes of VVC within an 8-week timeframe
### Treatment

Clients may purchase first choice treatments over-the-counter (OTC) and choose between the formulations in the treatment chart. Clients can refer to the package insert for proper application.

<table>
<thead>
<tr>
<th>Treatment for Vaginal Symptoms</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Choice</strong></td>
<td></td>
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<tr>
<td>Vaginal insert or oral treatment (have similar efficacy)</td>
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<tr>
<td>Vaginal insert: clotrimazole (Canestan®) or miconazole (Monistat®) vaginal inserts or cream; insert as per package (for 3, 6 or 7 nights)</td>
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<tr>
<td>Oral treatment: fluconazole 150 mg tablet PO in a single dose</td>
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<tr>
<td><strong>Alternative Treatment</strong></td>
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<tr>
<td>Intravaginal capsules: boric acid 600 mg once per day for 14 days</td>
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<tr>
<td><strong>Treatment for External Symptoms</strong></td>
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</tr>
<tr>
<td><strong>First Choice</strong></td>
<td></td>
</tr>
<tr>
<td>Topical Cream</td>
<td></td>
</tr>
<tr>
<td>clotrimazole topical cream applied twice daily for 10 to 14 days</td>
<td></td>
</tr>
<tr>
<td>miconazole topical cream applied twice daily for 10 to 14 days</td>
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</tbody>
</table>

1. Review information on the [BCCDC Medication Handouts](https://www.bccdc.ca) and your agency’s drug reference database, including:
   - Allergies, interactions and side effects
   - How to take the medication
   - After-care information

2. **Clotrimazole**
   - If client is taking or has recently taken antibiotics for a bacterial infection, it is recommended that they use a full 6- to 7-day regimen to treat a vaginal yeast infection, rather than a shorter duration.

3. **Miconazole**
   - If client is taking or has recently taken antibiotics for a bacterial infection, it is recommended that they use a full 6- to 7-day regimen to treat a vaginal yeast infection, rather than a shorter duration.
   - Miconazole may be contraindicated when taken with certain anticoagulants. Consult with a MD or NP for clients on anticoagulant therapy or other contraindications to treatment.

4. **Fluconazole**
   - Fluconazole is contraindicated in clients who have shown hypersensitivity to other azole drugs.
   - Fluconazole is contraindicated in pregnancy; consult a MD or NP for alternative treatment options.
   - Fluconazole is used with caution during breast/obstetric feeding; consult a MD or NP.
   - Fluconazole may be contraindicated when administered while the client is taking several types of medications. Advise the client to read the medication package insert carefully prior to taking fluconazole and to consult with a pharmacist regarding medication reconciliation if they are taking other medications when purchasing fluconazole.

5. **Boric Acid**
   - For clients who continue to experience symptoms of VVC after completion of first choice treatment (azole therapy), boric acid treatment intravaginally may be recommended, although data on efficacy is limited and inconclusive.
Treatment failure could be due to an infection with a NAC strain of yeast (e.g., C. glabrata).
- Boric acid can be fatal if ingested orally.

6. Consult with or refer to MD or NP if client is unable to take recommended treatments.

Monitoring and Follow-up
- Repeat testing: No
- Test-of-cure (TOC): No
- Follow-up: further assessment and treatment may be indicated if symptoms persist for more than one week following antifungal treatment, or if symptoms recur

Partner Counselling
- Reportable: No
- Trace-back period: N/A
- Recommended partner follow-up: not required unless they are experiencing symptoms

Potential Complications
- recurrent VVC (RVVC) (4 or more episodes within one year)
- severe VVC - extensive vulvar erythema, edema, excoriation or fissure formation
- chronic VVC - a chronic, continuous and unremitting form of VVC; typically evolving from recurrent VVC

Additional Client Education
Counsel client:
- that many topical and intravaginal agents are oil-based and may weaken latex condoms and diaphragms, and cause them to fail.
- that mild soap can be used to clean external genitalia.
- to continue to apply topical antifungal cream for at least 10 days even if symptoms begin to resolve earlier.
- that while symptomatic with VVC, there is an increased risk of STI acquisition or transmission.
- that there are mixed results regarding the benefit of oral probiotics in reducing recurrent vulvovaginal candidiasis and maintaining balanced vaginal flora. Although studies demonstrate the benefit of reducing episodes of bacterial vaginosis through ingestion of oral lactobacilli in yogurt, the same reduction in episodes of VVC is less apparent.
that there is insufficient evidence (e.g., from randomized controlled trials) that the ingestion of garlic, tea tree oil, yogurt (or other products with live lactobacillus species), specific dietary recommendations, or vaginal douching are effective in treating or preventing VVC.

- if peri-menopausal or in menopause, consider using OTC lubricant for vaginal dryness or discomfort.
REFERENCES


Sobel J.D. Candida vulvovaginitis: Treatment. UpToDate. 2019b.

