

VULVOVAGINAL CANDIDIASIS (VVC)

DEFINITION

Vulvar and/or intravaginal yeast infection most often caused by *Candida albicans*.

POTENTIAL CAUSES

Candida albicans is responsible for 90% of vulvovaginal candidiasis (yeast infections).

PREDISPOSING RISK FACTORS

- more common in sexually active women
- pregnancy
- usually not considered sexually transmitted
- antibiotic use
- corticosteroid use
- immunocompromised
- poorly controlled diabetes

TYPICAL FINDINGS

Sexual Health History

- may or may not have had sexual contact
- up to 20% of cases are asymptomatic
- client stated abnormal vaginal discharge
- dyspareunia (usually at the vaginal introitus)
- vulvar and/or intravaginal itch, irritation and/or burning
- condoms may or may not have been used for sexual contact
- recent antibiotic and/or corticosteroid use
- diabetic

Physical Assessment

Sexually active women experiencing vulvar/vaginal symptoms (irritation/abnormal discharge) should have full STI screening which includes pelvic exam and cervical swabs.

- erythema and edema of vulva and/or vagina
- fissures, dryness or cracks to vulvar skin (e.g., labial folds)
- vaginal discharge may appear white, clumpy, thick, or curdy
- vaginal pH ≤ 4.5 in normal range

Diagnostic Tests:

Vulvovaginal candidiasis (VVC) and Bacterial vaginosis (BV) may occur simultaneously in the vagina. When a client presents with symptoms of vaginitis it is recommended that a KOH whiff test and vaginal pH are collected as part of the diagnostic assessment.

If a client does not require full STI testing and a speculum exam is not needed, the RN may collect a *blind swab* from the vaginal canal to collect vaginal secretions for microscopic, pH, and KOH whiff test assessment.

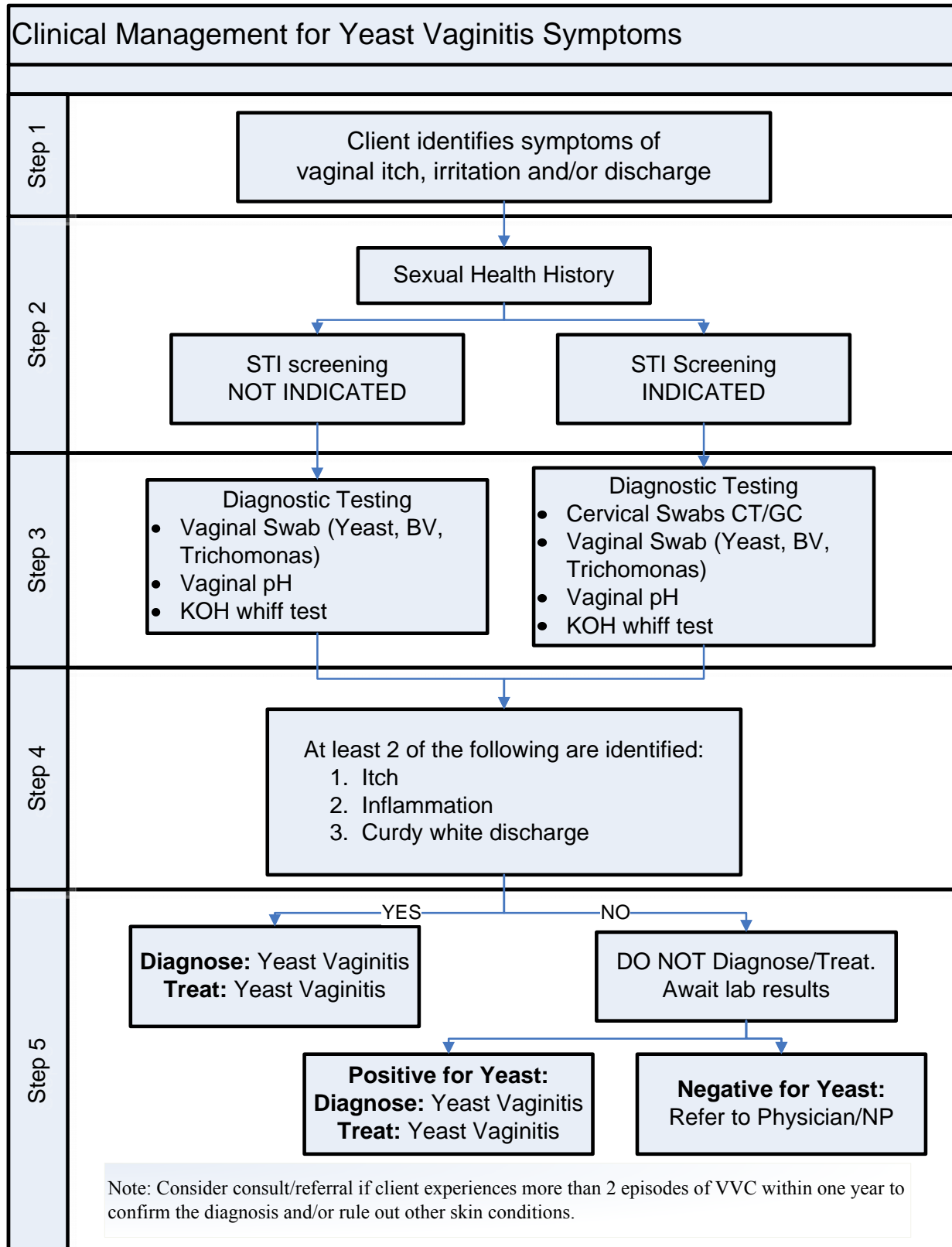
Vaginal wall swabs collected for:

- pH
- depending on your agency lab kits and guidelines one of the following:
 - vaginal smear (2 slides for yeast, Bacterial vaginosis, trichomonas)
 - KOH wet mount and/or gram stain (where immediate microscopy is available for evaluation)
 - yeast (amies transport gel) – for transport to lab – may not be used in all agencies
- KOH whiff test

CLINICAL EVALUATION

The diagnosis of vulvovaginal candidiasis is made based on the health history and clinical findings.

- positive lab results support a diagnosis
- negative lab results *do not* rule out the diagnosis



MANAGEMENT AND INTERVENTIONS

Goals of Treatment:

- treat infection
- prevent complications

TREATMENT OF CHOICE

Client may purchase first choice treatments over the counter and choose between the formulations in the treatment chart.

FIRST CHOICE TREATMENT		
Infection Type	Treatment	Notes
Vaginal	Clotrimazole (brand name Canestan) vaginal inserts or cream insert for 3 or 6 nights OR Miconazole (brand name Monistat) vaginal inserts or cream insert for 3 or 7 nights.	1. Treat with 6 day regimen if client is concurrently receiving antibiotics. 2. Consult with physician or NP if client is also receiving anticoagulants.
Vulvar	Clotrimazole applied twice daily for 10 to 14 days OR Miconazole topical cream applied twice daily for 10 to 14 days.	1. Consult with physician or NP if client is also receiving anticoagulants. 2. Counsel client to continue with application of cream for at least 10 days even if symptoms begin to resolve earlier.

NOTE: there are mixed results regarding the benefit of oral probiotics in providing benefit 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. However, some clients, especially those with recurrent VVC, may benefit from the introduction of live bacterial cultures such as those found in certain yogurts or in capsule form in addition to topical or oral antifungal treatment.

ALTERNATE TREATMENT

Alternate treatment for vulvovaginal candidiasis yeast requires referral to a physician or NP for a prescription.

- Fluconazole 150 mg tablet PO stat
- OR**
- Butaconazole 2% cream intravaginally X 1 dose

NOTE: Treatment failure could be a result of an infection with a non *albicans* strain of yeast.

NOTE: In recurrent VVC, a physician or NP referral is required for alternate treatment of intravaginal Boric Acid capsules for 14 days. Recommended dose is 300-600mg intravaginally for 14 days. Less irritation is experienced with 300 mg and treatment is associated with 80% efficacy. (PHAC, 2008, p. 9)

PREGNANT OR BREASTFEEDING WOMEN

Refer all pregnant or breastfeeding women to a physician or NP for treatment.

PARTNER COUNSELLING AND REFERRAL

Sexual partners do not require treatment unless they are experiencing symptoms.

POTENTIAL COMPLICATIONS

- recurrent VVC (4 or more episodes in over 1 year)
- severe VVC - extensive vulvar erythema, edema, excoriation or fissure formation

CLIENT EDUCATION AND FOLLOW-UP

Counsel client:

- that sexual partners do not require treatment unless they are experiencing symptoms
- to take all medication as directed
- regarding the side effects of medication
- that oral antibiotics, corticosteroid use, and poorly controlled diabetes may cause yeast infections
- to return if symptoms persist after treatment

CONSULTATION OR REFERRAL

Consult or refer to physician/NP for the following:

- 2 or more episodes of VVC within one year – to rule out other potential infections or dermatological conditions
- severe VVC
- pregnant or breastfeeding women
- client is taking anticoagulants

DOCUMENTATION

- VVC is non-reportable
- as per agency guidelines

REFERENCES

BCCDC (2007) British Columbia Treatment Guidelines. Sexually Transmitted Infections in Adolescent and Adults. STI/HIV Prevention and Control Division, BC Centre for Disease Control.

Health Canada. (2001). Canadian Adverse Drug Reaction Newsletter. 11(3) July 2001. Therapeutic Products Directorate.

Hilton, E., Isenberg, H., Alperstein, P., France, K., Borenstein, M. (1992). Ingestion of yogurt containing *Lactobacillus acidophilus* as prophylaxis for candidal vaginitis. *Ann Intern. Med.* 116 p. 353-357.

Hilton, L, Rindos, P., Isenberg, D. (1995). *Lactobacillus* GG vaginal suppositories and vaginitis. *Journal of Clinical Microbiology.* 33(5), p. 1433.

Pirotta M, Gunn J, Chondros P, et al. (2004) Effect of lactobacillus in preventing post-antibiotic vulvovaginal candidiasis: a randomized controlled trial. *BMJ* 329:548–52.

Public Health Agency of Canada. (2006). Vaginal discharge. Canadian Guidelines on Sexually Transmitted Infections. (updated January 2008). Retrieved from <http://www.phac-aspc.gc.ca/std-mts/sti-its/index-eng.php>

Reid, G. Jass, J., Sebulsy, T., McCormick, J. (2003). Potential uses of probiotics in clinical practice. *Clinical Microbiology Reviews* 16(4). p. 658-672.

Shalev E, Battino S, Weiner E, et al. (1996) Ingestion of yogurt containing *Lactobacillus acidophilus* compared with pasteurized yogurt as prophylaxis for recurrent candidal vaginitis and bacterial vaginosis. *Arch Fam Med* 5:593–6.

Xu, J., Schwartz, K., Bartous, M., Monsur, J., Severson, R., Sobel, J. (2008). Effects of antibiotics on vulvovaginal candidiasis in a metronet study. *The Journal of the American Board of Family Medicine.* 21(4) p. 261-268.

Reid, G. Jass, J., Sebulsy, T., McCormick, J. (2003). Potential uses of probiotics in clinical practice. *Clinical Microbiology Reviews* 16(4). p. 658-672.