Vaginal And Vulvovaginal Disorders

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Required Reading

Textbook – 19th edition:

Vaginal and vulvovaginal disorders (Chapter 8) ★

- Table 8-1: Differentiation of Common Vaginal Infections
- Figure 8-1: Self-care for vulvovaginal candidiasis
- Table 8-3: Guidelines for Applying Vaginal Antifungal Products
- Patient education box for vulvovaginal candidiasis
- Figure 8-2: Self-care for atrophic vaginitis

Learning Objectives

- Differentiate vulvovaginal candidiasis from other common vaginal infections
- Summarize the key clinical presentation features of genitourinary syndrome of menopause
- Describe the *mechanism of action, efficacy, adverse effects,* and *cautions/contraindications/interactions* for nonprescription products to self-treat the above conditions
- Explain the possible adverse outcomes associated with the practice of douching

Learning Objectives (continued)

- *Given a patient presenting with vaginal symptoms*:
  - Determine whether the patient is an appropriate candidate for self-treatment
  - Design an appropriate non-prescription treatment plan
  - Provide applicable patient education

Background: Vaginal Environment

- Vagina is a dynamic ecosystem that is colonized by many organisms
- This ecosystem is impacted by several variables:
  - Number and types of endogenous organisms, vaginal pH, glycogen concentration, hormonal fluctuations, drug therapy, douching, sex partners
- *Lactobacillus* species account for 95% of the vaginal flora
  - These bacteria convert glycogen to lactic acid which helps to maintain a normal acidic vaginal pH of 4-4.5
- Normal vaginal discharge is odorless, clear to white, and of high viscosity
- Secretions are important in cleansing the vaginal tract

Vaginitis Caused by Infection

Common Causes of Vaginitis

- Bacterial Vaginosis (BV) – 33%
- Vulvovaginal Candidiasis (VVC) – 20 to 25%
- Trichomoniasis – 15 to 20%

Other Causes of Vaginal Discharge or Irritation

- Normal physiologic variation
- Allergic reactions
- Herpes simplex virus
- Mucopurulent cervicitis
- Atrophic vaginitis
- Vulvar vestibulitis
- Foreign bodies
- Desquamative inflammatory vaginitis

Differentiation of Common Vaginal Infections

- Important to distinguish VVC from BV and trichomoniasis
  - VVC can be treated with nonprescription vaginal antifungal
  - BV and trichomoniasis require prescription treatment

- Inappropriate use of vaginal antifungal products can lead to:
  - Unnecessary drug use
  - Delay in effective treatment

- Characteristic symptoms can often help us to distinguish infections

Question

JG is a 28 year old woman who presents to the pharmacy seeking nonprescription treatment for her vaginal symptoms. She reports that she started experiencing vaginal itching and irritation yesterday. She also notes that she is having a lot more discharge than usual and it is yellow-green in color.

Based on these symptoms, what is the most likely cause of the patient's vaginitis?

a. Bacterial vaginosis

b. Trichomoniasis

c. Genitourinary syndrome of menopause

d. Vulvovaginal candidiasis

Differentiation of Common Vaginal Infections

	Bacterial Vaginosis	Trichomoniasis	Candidiasis
Etiology	Polymicrobial resulting from imbalance in normal vaginal flora	*Trichomonas vaginalis*	*Candida* species (primarily *C. albicans*) and *Saccharomyces*
Symptom presentation	Odor, discharge, itch	Itch, discharge, ~50% asymptomatic	Itch, discomfort, dysuria, thick discharge
Vaginal discharge	Homogenous, adherent, thin, off-white or discolored, sometimes foamy, unpleasant "fishy" odor	Copious, malodourous, yellow-green, frothy	Thick, clumpy, white "cottage cheese"
Risk factors	New sexual partner, African American race, use of IUD, douching, sexual practices, tobacco use, prior pregnancy	Multiple sex partners, new sexual partner, nonuse of barrier contraceptives, presence of other STIs	Medications such as antibiotics and immunosuppressants; no identifiable cause for most infections

IUD, intrauterine device; STI, sexually transmitted infection

Diagnosis

- Patient history
- Visual inspection of internal/external genitalia
- Appearance of discharge
- Collection and evaluation of specimen
  - Saline wet mount, KOH and whiff test, vaginal pH

Vulvovaginal Candidiasis (VVC)

Epidemiology

- Estimated that 70 to 75% of women will experience at least one episode of VVC
- Highest incidence during the reproductive years
- Most cases caused by *C. albicans* (85 to 95%)

Pathogenesis

Microbiology

- Disruption of host vaginal environment
- *Candida* organisms transition from a commensurate to pathologic role
  - *Candida* species are not considered to be sexually transmitted pathogens
- Symptomatic clinical infection occurs with excessive growth of yeast

Predisposing Factors

- Pregnancy
- High-dose combined oral contraceptives
- Estrogen therapy
- History of diabetes
- Recent use of systemic antibiotics
- Immunosuppression

Clinical Presentation and Symptoms

- Vulvar pruritis is most common symptom
- Thick, white, curdy vaginal discharge (“cottage cheese-like”)
- Erythema, irritation, occasional erythematous “satellite” lesions
- External dysuria and dyspareunia
- Normal vaginal pH (3.8 to 4.5)

Question

ML is a 32-year-old woman who presents to the pharmacy seeking treatment for her vaginal symptoms. She reports vaginal itching and white “cottage-cheese” like discharge. She had these same symptoms 12 months ago and was seen by a medical provider who diagnosed her with VVC. She has no significant PMH. She takes a daily multivitamin and had Nexplanon® implanted 2 years ago.

How would you classify this patient’s VVC?

a. Complicated

b. Uncomplicated

c. Recurrent

d. Severe

Classification of VVC

Uncomplicated	Complicated
- Sporadic or infrequent - Mild-to-moderate symptoms - Likely to be *C. albicans* - Non-immunocompromised women	- Recurrent VVC - Severe symptoms (edema, excoriation/fissure formation) - Non-albicans candidiasis - VVC in women who are pregnant, have uncontrolled diabetes, or are immunosuppressed

Responds to short course regimen

Should be evaluated by healthcare provider. May require longer duration of treatment and/or systemic treatment

Treatment Goals

- Relieve patient symptoms
- Eradicate infection
- Reestablish normal vaginal flora

Exclusions For Self-Treatment ★

- Pregnancy
- Girls <12 years of age
- Concurrent symptoms: fever or pain in the pelvic area, lower abdomen, back, or shoulder
- Medications that can predispose to VVC: corticosteroids, antineoplastics
- Medical disorders that can predispose to VVC: diabetes, HIV infection
- Recurrent VVC (>3 episodes per year or vaginal infection in past 2 months)
- First vulvovaginal episode

Treatment: Nonprescription Pharmacologic Therapy

- **Vaginal Antifungals** - recommended for initial therapy for uncomplicated VVC and relief of external vulvar itching and irritation associated with infection

Class	• Imidazoles
MOA	• Alter fungi membrane permeability through decreased synthesis of the fungal sterol ergosterol
OTC drugs	• Clotrimazole, miconazole, and tioconazole
Dosage Forms	• Vaginal cream, vaginal suppositories, and vaginal tablets

Selected Nonprescription Products

Primary Ingredient	Dosage
Clotrimazole Products	
Cream: Clotrimazole 1%	Insert cream into vagina daily for 7 days; apply to vulva twice daily as needed for itching
Tablet: Clotrimazole 100 mg Cream: Clotrimazole 1%	Insert tablet into vagina daily for 7 days; apply cream to vulva twice daily as needed for itching up to 7 days
Cream: Clotrimazole 2%	Insert cream into vagina daily for 3 days; apply to vulva twice daily for itching
Miconazole Products	
Cream: miconazole 2% cream Supp: miconazole 1200 mg	Apply cream to vulva twice daily as needed for itching up to 7 days; insert suppository into vagina daily for 1 day
Cream: miconazole 2% cream Supp: miconazole 200 mg	Apply cream to vulva twice daily as needed for itching up to 7 days; insert suppository into vagina daily for 3 days
Cream: miconazole 2% Supp: miconazole 100 mg	Apply cream to vulva twice daily as needed for itching up to 7 days; insert suppository into vagina daily for 7 days
Cream: miconazole 4%	Insert cream into vaginal daily for 3 days; apply to vulva twice daily as needed for itching
Tioconazole Products	
Ointment: tioconazole 6.5%	Insert ointment into vagina daily for 1 day

Examples of Nonprescription Products

Adverse Effects

Side effects are uncommon and generally mild

- Vulvovaginal burning, itching, and irritation (3-7%)
  - More likely to occur with initial application
  - May be dose-related
- Penile irritation and allergic reactions (3-7%)
- Abdominal cramps (3%)
- Headache (9%)

Creams and suppositories in these regimens are oil-based and may weaken latex condoms and diaphragms. Refer to condom product labeling for further information.

Drug-Drug Interactions

- Limited systemic absorption
- Possible drug-drug interaction between miconazole suppositories and warfarin
  - Both metabolized by CYP2C9
  - Increased risk for bleeding

Product Selection: Special Populations

- Pediatrics (<12 years) – exclusion for self-treatment
- Pregnant women – exclusion for self-treatment
- Lactating women – miconazole or clotrimazole
- Older adults – treat same as other adults

Product Selection Considerations

- **Pharmacotherapeutic Comparison:**
  - Studies have shown imidazoles to be equally effective (~80-90% effectiveness rates)
  - Single-dose and 7-day treatments have shown similar overall cure rates. However, faster symptom relief with single-dose group

Product Selection Considerations

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Patient preference!

Patient Education

Administration – refer to guidelines for administering vaginal antifungal products (Table 8-3) ★

- For women who have external vulvar symptoms in addition to vaginal symptoms, external topical application of cream is usually beneficial

Patient Education

When to seek further medical attention:

- Symptoms persist > 1 week after treatment
- Symptoms recur within 2 months
- Vaginal symptoms worsen or change

Patient Education

Relief of symptoms:

- Within **3 days** but may take a week for complete resolution
- Important to complete full course of treatment even if symptom relief is sooner

Patient Education

Miscellaneous -- refer to Patient Education box★:

- Tampon use
  - "How long do I need to wait to use a tampon after taking a vaginal medication?"
  - Response: _____
- Menstrual period
  - "What should I do if I start my menstrual period while taking a vaginal medication?"
  - Response:_____
- Sexual intercourse
  - "Is it okay to have sex while using a vaginal medication?"
  - Response: _____

Treatment: Nonpharmacologic Measures

- **Sodium bicarbonate sitz bath**
  - May provide quick, temporary relief of vulvar irritation

- **For recurrent infections**
  - Yogurt (1 cup per day of live culture yogurt)
  - Decrease dietary sugar and refined carbohydrates

1. Add 1 teaspoon sodium bicarbonate to 1 pint of water.
2. Add 2–4 tablespoons of the solution to 2 inches of bath water.
3. Sit in the sitz bath or bathtub for 15 minutes as needed for symptom control.

Other Nonprescription Vaginal Preparations

Products

- **Benzocaine Products**
  - Vagisil Anti-Itch – Benzocaine 5%; resorcinol 2%
  - Vagisil Maximum Strength – Benzocaine 20%; resorcinol 3%
- **Hydrocortisone Products**
  - Cortizone-10 Feminine Relief – Hydrocortisone 1%

Patient education

- May provide relief of itching but **DO NOT** treat the underlying cause
- Generally not recommended given benefits of imidazole antifungals

Complementary Therapies

- ***Lactobacillus* preparations**
  - Proposed mechanism: reestablish normal vaginal flora and inhibit overgrowth of *Candida* organisms
  - Data on effectiveness is limited and inconsistent
- **Vaginal tea tree oil**
  - Proposed mechanism: antibacterial and antifungal properties
  - Effectiveness not established
  - Allergic dermatitis may occur
- **Gentian violet**
  - A tampon may be soaked in dye and inserted into the vagina for several hours or overnight
  - Sometimes used for resistant *Candida* infections
- **Boric acid vaginal suppository**
  - May be useful for non-*C. albicans* infections
  - Can be compounded in community pharmacies
  - Pregnant women should not use

Atrophic Vaginitis
now Genitourinary Syndrome Of Menopause (GSM)

Genitourinary Syndrome of Menopause (GSM)

- Board of Directors of the International Society for the Study of Women's Sexual Health and Board of the North American Menopause Society (NAMS) approved change of terminology from vulvovaginal atrophy and atrophic vaginitis in 2014

- Vaginal atrophy can lead to genital, sexual, and urinary symptoms
  - GSM terminology better describes vaginal atrophy and its accompanying symptoms

Question

Atrophic vaginitis occurs secondary to:

a. Excess douching
b. Decreased estrogen levels
c. Oral contraceptive use
d. Pelvic inflammatory disease

Pathophysiology

- Decreased estrogen levels lead to decreased vaginal lubrication and thinning of the vaginal epithelium
- Primarily occurs in postmenopausal women
  - Up to 45% of postmenopausal women may experience symptoms, but only 25% may seek treatment
- Can also occur in women who may have decreased estrogen from other causes:
  - Postpartum period, breastfeeding
  - Decreased ovarian estrogen production
  - Drugs (antiestrogenic drugs, aromatase inhibitors)

Clinical Presentation

Vaginal & Sexual Symptoms

- Vaginal dryness – most common
- Dyspareunia
- Vaginal irritation
- Itching
- Vaginal tenderness
- Vaginal bleeding/spotting during intercourse

Urinary Symptoms

- Dysuria
- Urgency
- Frequency
- Nocturia
- Urinary incontinence
- Recurrent urinary tract infection

Treatment Goals

- Reduce symptoms
  - Vaginal dryness
  - Burning
  - Itching
- Reduce dyspareunia

Exclusions for Self-Treatment★

- Symptoms of severe vaginal dryness, dyspareunia, or bleeding
- Symptoms that are not localized
- Vaginal dryness or dyspareunia not relieved by vaginal moisturizers or lubricants

Treatment: Vaginal Moisturizers & Lubricants

- Vaginal moisturizers and lubricants can be used to relieve symptoms by temporarily moistening the vaginal tissues
- Multiple water-soluble products available
- Can be applied both externally and internally
- Quantity and frequency of use can be tailored to specific patient needs

Comparison of Moisturizers and Lubricants

	Moisturizers	Lubricants
Timing:	Typically used on a chronic basis	Typically used with sexual activity
Ingredients:	Generally contain active ingredients like polycarbophil	Usually water-based or silicone-based
Administration:	Inserted into upper vagina and releases water and electrolytes into vaginal epithelium	Designed to be applied directly to genitals of both partners at time of sexual activity
Duration:	One application may provide benefit for 2-3 days	Silicone-based products last longer than water-based products
Example products:	Replens®	Water-based: - K-Y Jelly®, Astroglide® Silicone-based: - K-Y Liquibeads®

Patient Assessment Using QuEST SCHOLAR

QUickly and accurately assess the patient	
Symptoms	What symptoms is patient experiencing? Dryness? Itching? Irritation? Dyspareunia? Bleeding?
Characteristics	Are the symptoms stable or changing?
History	What has the patient done so far to try to relieve the symptoms?
Onset	When did the condition start? Is the patient peri- or post-menopausal? Recent childbirth? Breastfeeding? New medications?
Location	Where are the symptoms? Localized to vagina?
Aggravating factors	What makes it worse? Sexual intercourse?
Remitting factors	What makes it better?
Establish that the patient is an appropriate self-care candidate	
Suggest appropriate self-care strategies	
Talk with the patient	

Patient Education

- **Duration of symptoms**
  - Postpartum or breastfeeding → short-term
  - Perimenopausal or postmenopausal → long-term treatment may be necessary
- **When to expect relief of symptoms**
  - May be apparent within hours after first dose
  - Typically improve within a few days
- **Miscellaneous**
  - Some leakage of the product may occur and a sanitary napkin or panty liner can be used if desired
- **When to seek medical attention**
  - If no response within one week
  - Worsening symptoms (or vaginal bleeding)

Douching

Prevalence of Douching

- Centers for Disease Control and Prevention (CDC) reports that about 1 in 5 women practice douching

- Most frequently stated reason for douching is to achieve good vaginal hygiene

Potential Adverse Effects of Douching

- Local irritation and/or sensitization from ingredients
- Pelvic inflammatory disease
- Reduced fertility
- Ectopic pregnancy
- Bacterial vaginosis
- Sexually transmitted infections
- Preterm delivery
- Cervical cancer

Patient Education

- Douching is unnecessary
- Douching has many potential adverse effects
- Contraindicated during pregnancy
- Should be delayed at least 6-8 hours after sexual intercourse if vaginal spermicide was used as contraceptive agent

Case Study

LF is a 55-year-old woman who comes to the pharmacy to pick up her prescription for venlafaxine ER 75 mg once daily for hot flashes. While counseling the patient, you inquire about other menopausal symptoms. The patient reports that sexual intercourse has been more painful over the last several months and overall her vagina feels dry and irritated.

Which of the following options would be the most appropriate recommendation at this time?

a. Recommend vaginal moisturizer (Replens®) three times weekly and vaginal lubricant (Astroglide®) before sexual intercourse

b. Recommend miconazole 4% cream intravaginally for 3 days and vaginal lubricant (Astroglide®) before sexual intercourse

c. Recommend vaginal lubricant (K-Y Jelly®) applied 4 to 5 times daily and before sexual intercourse

d. Refer patient to primary care provider for further evaluation

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