Vaginal Discharge

Introduction

- Vaginitis is the most common gynecologic diagnosis in the primary care setting.
- In approximately 90% of affected women, this condition occurs secondary to bacterial vaginosis, vulvovaginal candidiasis or trichomoniasis
- Noninfectious causes of vaginitis include:
  1- Atrophy: associated with menopause due to estrogen deficiency
  2- Allergies: latex, sperm, douching, hygiene products
  3- Chemical irritation: soaps, hygiene products

Pathophysiology

- Lactobacillus acidophilus (normal vaginal flora) produces hydrogen peroxide, which is toxic to pathogens and keeps the healthy vaginal pH between 3.8 and 4.2.

- Vaginitis occurs because the vaginal flora has been altered by:
  -The introduction of pathogens
  -Changes in the vaginal environment that allow pathogens to proliferate

- Antibiotics, contraceptives, sexual intercourse, douching, stress and hormones can change the vaginal environment and allow pathogens to grow.

Bacterial Vaginosis

- BV is the most common cause of vaginitis.
- Caused by proliferation of a number of organisms, including Gardnerella vaginalis and Mycoplasma hominis .
- Risk factors :
  - Multiple sexual partners
  - Intrauterine devices (IUDs)
  - Douching
  - Pregnancy
- BV is a risk factor for PROM and preterm labor. Treating the infection in pregnancy decreases this risk.

Vulvovaginal candidiasis

- Vulvovaginal candidiasis is the second most common cause of vaginitis
- Candida albicans is the infecting agent in 80 to 90 percent of patients
- Risk factors:
  - Use of OCP, diaphragm, spermicide, or IUD
  - Young age at first intercourse
  - Intercourse more than four times per month
  - Diabetes
  - Pregnancy
  - Use of antibiotics
- Recurrent vulvovaginal candidiasis is defined as four or more episodes in a one-year period.

Trichomoniasis

- Trichomoniasis is the third most common cause of vaginitis.
- Caused by trichomonas vaginalis (a motile, flagellated protozoa).
- It is transmitted sexually therefore, sexual partners should be treated and instructed to avoid sexual intercourse until both partners are cured
- Risk factors:
  - Use of an IUD
  - Cigarette smoking
  - Multiple sexual partners
- Trichomoniasis may be associated with PROM and preterm delivery

History

- Abdominal or pelvic pain and fever.
- Recurrent or resistant infections
- Risk factors: pregnancy; use of diaphragm, spermicide, IUD, OCP or antibiotics; vaginal douching; sexual practices; and history of diabetes.
- The nature of the discharge (i.e. amount, consistency, color, odor, accompanying pruritus).
- Dysuria is a common symptom of vaginitis. It is usually external and is defined as pain and burning when urine touches the vulva. In contrast, internal dysuria, defined as pain inside the urethra, is usually a sign of cystitis

History

Bacterial vaginosis

Thin, off-white discharge with unpleasant "fishy" odor

Vulvovaginal candidiasis

- Thick, white ("cottage cheese") discharge with no odor
- Pruritus, vaginal irritation and dysuria.

Trichomoniasis

- Copious, malodorous, yellow-green (or discolored) discharge
- Pruritus, Vaginal irritation and dysuria

Physical examination

- PE identifies the anatomic site of involvement (vulva, vagina or cervix).
- Inspection of the external genitalia for inflammation, lesions, masses, atrophic tissue and enlarged lymph nodes
- Palpation for uterine or tubo-ovarian tenderness
- Speculum examination to detect erythema, edema or lesions.
- Assessment of the vaginal discharge for color, consistency, volume and adherence to the vaginal walls

Physical examination

Bacterial vaginosis

- Usually normal appearance of tissue
- Discolored discharge with abnormal odor
- Homogeneous discharge that adheres to vaginal walls

Vulvovaginal candidiasis

- Vulvar and vaginal erythema, edema and fissures
- Thick, white discharge that adheres to vaginal walls

Trichomoniasis

- Vulvar and vaginal edema and erythema “Strawberry" cervix
- Frothy, purulent discharge

Diagnostic tests

- A sample of the vaginal discharge should be obtained for gross and microscopic EX.

- Wet-Mount Preparation
  - Motile trichomonads (Trichomoniasis)
  - Increased numbers of polymorphonuclear cells (trichomoniasis)
  - Clue cells (Baterial vaginosis)
  - Fungal hyphae (Vulvovaginal candidiasis)
  - Round parabasal cells (atrophic vaginitis)

- KOH Preparation: detects candidal hyphae (Vulvovaginal candidiasis)

- Whiff Test: A positive whiff test is suggestive of bacterial vaginosis

- Litmus Testing for pH :
  - PH >4.5 : bacterial vaginosis, trichomoniasis, atrophic vaginitis
  - NL PH : NL vaginal discharge, Vulvovaginal candidiasis

Treatment of bacterial vaginosis

Recommended regimens

- Metronidazole, 500 mg PO BD for 7 days
- Clindamycin vaginal cream 2 %, one full applicator (5 g) intravaginally each night for 7 days
- Metronidazole gel 0.75 %, one full applicator (5 g) intravaginally BD for 5 days

Alternative regimens

- Metronidazole 2 g orally in a single dose
- Clindamycin 300 mg PO BD for 7 days

Treatment of vulvovaginal candidiasis

Recommended regimens

- Topical antifungal agents (cream, vaginal tablets or suppositories)
- Fluconazole 150 mg orally one time

Alternative regimen

Boric acid powder in size-0 gelatin capsules intravaginally OD or BD for 2 weeks

Topical Antifungal Therapy for Vaginitis

- Butoconazole 2% cream 5 g per day intravaginally for 3 days
- Clotrimazole 1% cream, 5 g per day intravaginally for 7 to 14 days
- Clotrimazole 100-mg vaginal tab, one tab per day intravaginally for 7 days
- Clotrimazole 100-mg vaginal tab, two tab per day intravaginally for 3 days
- Clotrimazole 500-mg vaginal tab, one tab intravaginally single application
- Miconazole 2% cream, 5 g per day intravaginally for 7 days
- Miconazole 200-mg vaginal suppository, one suppository per day for 3 days
- Miconazole 100-mg vaginal suppository, one suppository per day for 7 days
- Nystatin 100,000-unit vaginal tab, one tab per day intravaginally for 14 days
- Tioconazole 6.5% ointment, 5 g intravaginally in a single application
- Terconazole 0.4% cream, 5 g per day intravaginally for 7 days
- Terconazole 0.8% cream, 5 g per day intravaginally for 3 day
- Terconazole 80-mg vaginal suppository , one suppository per day for 3 days

Trichomoniasis

- Sexual partners should be treated and instructed to avoid sexual intercourse until both partners are cured

- **Recommended regimen**

  Metronidazole 2 g orally in a single dose

- **Alternative regimen:**

  Metronidazole 500 mg PO BD for 7 days