

Evaluation and Management of Vaginitis: Review Questions

Jordan G. Pritzker, MD, MBA, FACOG

QUESTIONS

Choose the single best answer for each question.

Questions 1 through 4 refer to the following case study.

A 21-year-old nulligravid woman visits her gynecologist for an annual examination. When questioned regarding any unusual symptoms or concerns, she reports having an intermittent thin vaginal discharge and continual vaginal irritation. She was recently treated for sinusitis with an antibiotic, although she does not recall its name. She is sexually active and is taking oral contraceptives; she and her partner do not always use condoms. She has been monogamous for the past 2 years, and recently they began practicing mutual oral sex. Her medical and surgical history is otherwise noncontributory. She states that her boyfriend has had no symptoms.

- 1. The patient most likely has which of the following?**
 - A) Normal discharge
 - B) Bacterial vaginosis
 - C) Candidiasis
 - D) Trichomoniasis
- 2. On examination, the patient's vulva and vagina appear moderately inflamed, and she has a thin, gray, odorless, purulent discharge. She has no cervical motion tenderness. Colpitis macularis ("strawberry-like" spots on the cervix portio) are observed. Routine screening for chlamydia and gonorrhea are performed with a Papanicolaou test. Microscopic examination of a wet preparation obtained during the test shows small, flagellated organisms. Which of the following is the patient's most likely vaginal pH?**
 - A) < 3.8
 - B) 3.8 to 4.2
 - C) 4.2 to 4.5
 - D) > 4.5
- 3. Which of the following treatments for the patient's vaginal discharge is likely to be most effective and acceptable to her?**
 - A) Fluconazole 150 mg taken in a single oral dose
 - B) Metronidazole 2 g taken in a single oral dose
 - C) Metronidazole 500 mg taken orally twice daily for 7 days
 - D) Terconazole 0.8% cream (5 g) used intravaginally for 3 days
- 4. The patient and her partner use the prescribed medication with good relief of symptoms. The patient is given a detailed review of the general risk factors for sexually transmitted diseases (STDs). She returns to her physician's office 4 weeks later, reporting that her discharge has returned. On examination, *Trichomonas vaginalis* is again found on microscopic examination of a wet preparation obtained during a Papanicolaou test. Metronidazole resistance is suspected. Which of the following is the best treatment for the patient's condition?**
 - A) Clindamycin 2% cream applied for 7 consecutive nights
 - B) High-dose metronidazole (750 mg to 1 g) taken orally 3 times daily for 7 days
 - C) Povidone-iodine douche
 - D) Topical clotrimazole suppositories used twice daily for 7 days

Dr. Pritzker is an Assistant Professor, Albert Einstein College of Medicine/Montefiore Medical Center, Bronx, NY, and a practicing faculty member in the Department of Obstetrics and Gynecology, Women's Comprehensive Health Center, Long Island Jewish Medical Center, New Hyde Park, NY.

5. For successful disease control efforts, many state health departments require notification by a physician or laboratory when a positive test result for an STD is recorded. In addition to AIDS, syphilis, and gonorrhea, which of the following STDs must be reported to most state health departments?
- A) Bacterial vaginosis
 - B) Chlamydia
 - C) Genital herpes simplex
 - D) Trichomoniasis

EXPLANATION OF ANSWERS

1. (A) **Normal discharge.** The physiology of the normal vaginal ecosystem produces a vaginal discharge in all women. Abnormal discharges are associated with conditions such as bacterial vaginosis, trichomoniasis, and other types of vaginitis, the most common gynecologic problem encountered by physicians providing primary care to women. Assessing the impact of abnormal vaginal discharge is very important to the overall well-being and quality of life in women, so the ability to discern normal vaginal discharges from abnormal discharges is of utmost importance. The patient's history usually will give clues to the etiology, and therefore diagnosis, of abnormal vaginal discharges; the case patient's history offered no such clues. However, a physical examination and a few simple, inexpensive tests are required to clinically evaluate vaginal discharges. These tests include the Whiff test, vaginal pH test, examination of the discharge color and consistency, microscopic examination, and—infrequently—culture. Although antibiotics can lead to a candidal infection in women who have a proclivity for candidiasis, antibiotics do not always lead to these infections.
2. (D) **> 4.5.** *Trichomonas vaginalis* is the organism observed on the wet preparation. Over 3 million women are diagnosed with trichomoniasis yearly. Infection occurs in the vagina, urethra, and bladder. The organism is usually transmitted by sexual intercourse; however, *T. vaginalis* has been known to survive outside the body for several hours and, rarely, may be transmitted by fomites such as clothing or towels. Between 20% and 50% of patients with trichomoniasis are asymptomatic when the flagellated protozoa are found on microscopic examination of a wet preparation obtained during a Papanicolaou test. When tested, the vaginal pH level is usually greater than 4.5 when this organism is present. A pH less than 4.5 usually rules out bacterial vaginosis and trichomoniasis, and a pH greater than 4.5 usually signifies an unhealthy vaginal ecosystem. Candidiasis usually occurs in patients with a vaginal pH of less than 4.5. A healthy vaginal pH usually ranges from 3.8 to 4.3. The hallmark of the wet preparation for bacterial vaginosis is the “clue cell” of the bacteria adherent to the squames. The pseudohyphae of yeast are the hallmark of the wet preparation for candidiasis, better visualized by a potassium hydroxide preparation.
3. (B) **Metronidazole 2 g taken in a single oral dose.** Eighty percent of sexual partners may be infected with *Trichomonas* species and are usually asymptomatic. The most acceptable and effective treatment for trichomoniasis is a single oral dose of metronidazole 2 g for the patient and all sexual contacts. Metronidazole 500 g taken orally twice daily for 7 days is effective; however, many compliance issues can arise. Fluconazole and terconazole are prescribed for the treatment of candidiasis.
4. (B) **High-dose metronidazole (750 mg to 1 g) taken orally 3 times daily for 7 days.** Metronidazole resistance is increasing and can usually be overcome by high-dose metronidazole, as used in the treatment of amebiasis. However, adverse reactions are of particular concern at such high doses. These reactions include nausea with or without headache, anorexia, vomiting, abdominal cramps, metallic taste in the mouth, candidal overgrowth, a disulfuram-like reaction when taken with alcohol, the potentiation of anticoagulation effects of coumarin-type agents, and the alteration of drug metabolisms that decrease microsomal enzymes. No fetal toxicity has been demonstrated in pregnancy; however, many clinicians resist the use of metronidazole during pregnancy, particularly in the first trimester. Topical clotrimazole suppositories used twice daily for 7 days have been found to provide temporary relief in approximately 50% of parturients. Similarly, clotrimazole is used in patients with a definite history of allergic reactions to metronidazole. Douching with povidone-iodine produces symptomatic relief but not necessarily a cure for this type of vaginitis.
5. (B) **Chlamydia.** The diagnosis of AIDS, syphilis, gonorrhea, and chlamydia require notification of state health departments in most of the United States. Risk factors for sexually transmitted diseases include being sexually active, taking oral contraceptives, having multiple sexual partners, having a partner who has multiple sexual partners, having a partner with a sexually transmitted disease, and having been previously treated for pelvic inflammatory disease.