

## Herpes Simplex Virus Infections in Pregnancy: Review Questions

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### QUESTIONS

Choose the single best answer for each question.

Questions 1 through 5 refer to the following case study.

A 25-year-old single woman sees her gynecologist for a routine examination. She has no significant history of medical, surgical, gynecologic, or social issues. She takes no medications, has no known drug allergies, has never undergone surgery, and does not smoke, consume alcohol, or use illegal drugs. She reports that her relationship with her boyfriend is troubled, and she worries that he is cheating on her; on questioning, she states that she has intercourse 2 to 3 times a week. Physical examination shows all organ systems to be normal, except for the presence of 2 vesicles on the left labia majora. On further questioning, the patient admits that she has had atypical genital pain, sometimes with vesicles that disappear after a few days, approximately 5 times within the past year.

- 1. Which of the following infections does this patient most likely have?**
  - (A) *Candida albicans*
  - (B) Chlamydia
  - (C) Gonorrhea
  - (D) Herpes simplex virus (HSV)
  - (E) HIV
- 2. Which of the following is the best method of laboratory analysis for this patient's infection?**
  - (A) Bacterial cultures
  - (B) Complete blood count
  - (C) HSV type 2 antibody test
  - (D) Viral cultures
  - (E) Wet mount analysis
- 3. The patient is also found to be pregnant at 28 weeks' gestation at the time of her office visit. Which of the following would be the best treatment for her infection?**
  - (A) Acyclovir 200 mg 5 times daily by mouth for 15 days
  - (B) Acyclovir 200 mg 5 times daily for 10 days, followed by valacyclovir 500 mg twice daily for another 10 days
  - (C) Valacyclovir 500 mg twice daily by mouth for 3 days
  - (D) Valacyclovir 500 mg twice daily for 3 days and valacyclovir suppression therapy 1000 mg once daily, beginning at 36 weeks' gestation
  - (E) Valacyclovir 1000 mg once daily by mouth for 6 days
- 4. When the patient is in labor at term, the obstetrician performs a pelvic examination and notices a herpetic outbreak on her labia minora. Which of the following is the recommended management at this time?**
  - (A) Application of antibiotic ointment to the affected area
  - (B) Betadine douching of the affected area
  - (C) Cesarean delivery
  - (D) Expectant management
  - (E) Pelvic ultrasonography
- 5. The patient becomes very upset after learning that she has HSV infection and inquires about future risks, especially transmission risks if she has other sexual partners without HSV. Which of the following is the most appropriate answer to her question?**
  - (A) Daily vitamin supplementation decreases viral shedding
  - (B) HSV infection has been associated with uterine cancer
  - (C) Oral contraception has a protective effect on transmission of HSV
  - (D) She is always at risk for shedding the virus
  - (E) She is never at risk for future transmission of HSV

(turn page for answers)

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## EXPLANATION OF ANSWERS

1. **(D) Herpes simplex virus (HSV).** On most occasions, patients with HSV infection have atypical symptoms, such as dull genital pain, nonspecific lesions, vesicles, and (at times) only pelvic and/or localized genital discomfort. In such instances, a patient may not recognize that she is having an outbreak of HSV infection. Because of her presenting symptoms, the case patient is unlikely to have HIV, gonorrhea, chlamydia, or a *Candida albicans*-related infection.
2. **(C) HSV type 2 antibody test.** HSV glycoprotein G1 and G2 levels can be tested. These are HSV type-specific proteins (antibodies) and can be detected in the serum of women who have been exposed to HSV and who have seroconverted. Cultures obtained from HSV lesions are the traditional method of diagnosis of HSV infection. However, low sensitivity, poor reliability, and difficulty in the transport of specimens often prevent accurate detection of the virus. In addition, the timing of viral cultures is crucial, because an inadequate sample will be obtained unless an open, unhealed lesion is present. A complete blood count, bacterial cultures, or wet mount analysis are useful for diagnosis of other infections, but not HSV.
3. **(D) Valacyclovir 500 mg twice daily for 3 days and valacyclovir suppression therapy 1000 mg once daily, beginning at 36 weeks' gestation.** Treatment of primary HSV outbreak involves 10 days of valacyclovir 1000 mg twice daily by mouth, acyclovir 200 mg 5 times daily, or famciclovir 250 mg 3 times daily. Treatment of recurrent HSV infection includes valacyclovir 500 mg twice daily for 3 days, acyclovir 200 mg 5 times daily for 5 days, or famciclovir 125 mg twice daily for 5 days. Suppression therapy for HSV infections involve valacyclovir 1000 mg once daily, acyclovir 400 mg twice daily, or famciclovir 250 mg twice daily. The case patient had a recurrent HSV infection outbreak during pregnancy; thus, a course of recurrent treatment along with suppressive therapy starting at 36 weeks' gestation is recommended in order to prevent a recurrence at the time of delivery. This treatment course will likely help the patient avoid cesarean delivery and the complications associated with surgery. In addition, clinicians should keep in mind that the fewer pills any patient must take, the

higher the compliance rate will be, leading to successful outcomes in HSV infection management.

4. **(C) Cesarean delivery.** Neonatal HSV infection acquired from the mother is associated with significant neonatal mortality and morbidity. The recommendation by the American College of Obstetricians and Gynecologists for patients with HSV infection outbreaks at the time of labor is to perform a cesarean delivery to try to avoid this transmission; there is an increased risk for perinatal transmission of HSV to the neonate at the time of labor and during vaginal delivery. Although the risk is higher during a primary HSV infection, the risk is still present for a recurrent episode of HSV infection. It is also important to note that a cesarean delivery does not protect against perinatal transmission or neonatal HSV infection all the time, but it does substantially decrease the risk for transmission. Expectant management would endanger the life of the neonate. Betadine douching, antibiotic ointments, and pelvic ultrasonography are ineffective management modalities in this case.
5. **(D) She is always at risk for shedding the virus.** HSV infections can psychologically affect women, whether they are pregnant or not. For some, HSV infection is a significant social issue; therefore, physicians should counsel patients appropriately. Women with HSV infection are at risk for symptomatic or asymptomatic viral shedding at any given time. It is difficult to predict which women will shed more at any given moment. Use of barrier contraceptive methods during intercourse may decrease the risk for transmission to a sexual partner substantially and should be considered. Vitamin supplementation and use of oral contraceptives do not decrease viral shedding and transmission. HSV infection has not been associated with uterine cancer.

## SUGGESTED READINGS

- Langenberg AG, Corey L, Ashley RL, et al. A prospective study of new infections with herpes simplex virus type 1 and type 2. Chiron HSV Vaccine Study Group. *New Engl J Med* 1999;341:1432–8.
- Scott LL, Sanchez PJ, Jackson GL, et al. Acyclovir suppression to prevent cesarean delivery after first-episode genital herpes. *Obstet Gynecol* 1996;87:69–73.

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