**Chlamydial Infection**

End of Module Quiz (9 Questions)

1. **Which statement about *Chlamydia trachomatis* is true?**
   
   A. Chlamydiae are classified as bacteria containing cell walls and cell membranes
   
   B. Like viruses, chlamydiae grow intracellularly, but unlike viruses, chlamydiae contain both DNA and RNA
   
   C. Chlamydiae are “obligatory intracellular parasites” and survive only by a replication cycle that results in the death of the infected host
   
   D. All of the above (Correct)

**Incorrect Answer Response:** All of the statements are true. Chlamydiae are unique microorganisms, and it has been only in the last three decades that their composition, growth characteristics, and ability to cause disease have been understood. Although classified as bacteria, they share properties with viruses. Like viruses, chlamydiae grow only within cells, e.g., intracellularly. Unlike viruses, however, chlamydiae have cell walls and cell membranes (viruses have neither), and they contain both DNA and RNA (viruses have only one or the other).

Relates to Key Learning Point #1: Describe the characteristics of Chlamydia trachomatis.

Where Question Content is presented: EDG 2010/Passport to Partner Services – Key Disease Concepts Unit 3, Topic 2, page 3 of 5

2. **Which of the following statements about *Chlamydial* infection in men is true?**
   
   A. The average incubation period is 3 to 5 days
   
   B. The primary site of infection is the rectum
   
   C. It is the single most important cause of acute epididymitis in young men. (Correct)
   
   D. None of the above

**Incorrect Answer Response:** *Chlamydia trachomatis* is the single most important cause of acute epididymitis in younger men (<35 year of age), having been isolated from 35% - 70% of such men. In men, the primary site of infection is the urethra (not rectum). Signs or symptoms in those who develop them occur 7-21 (not 3 to 5) days after infection, and usually about 14 days after infection.

Relates to Key Learning Point #2: List the Chlamydia-associated syndromes in men.

Where Question Content is presented: EDG 2010/Passport to Partner Services – Key Disease Concepts Unit 3, Topic 4, page 2 of 4.

3. **Which of the following statements is a potential consequence of *Chlamydia* in women if left untreated?**
   
   A. Pneumonia
   
   B. Pelvic inflammatory disease (PID)
   
   C. Transmission of disease to baby at delivery if the woman becomes pregnant
   
   D. Both B and C (Correct)
Incorrect Answer Response: Three chlamydia-associated syndromes may occur in women: Mucopurulent, cervicitis (MPC), Urethritis, and PID. Infants born to untreated, infected mothers have a 50-75% chance of becoming infected with chlamydia in at least one anatomical site (usually the conjunctiva, nasopharynx, rectum, or vagina).

Relates to Key Learning Point #3: List the Chlamydia-associated syndromes in women. Where Question Content is presented: EDG 2010/Passport to Partner Services – Key Disease Concepts Unit 3, Topic 4, page 3 of 4.

4. Two complications of a chlamydial infection in a newborn are:
   A. Anemia and pneumonia
   B. Snuffles and conjunctivitis
   C. Conjunctivitis and pneumonia (Correct)
   D. Anemia and snuffles

Incorrect Answer Response: Pregnant women are tested routinely for \textit{C. trachomatis} because the following illnesses can occur in the neonate born to an infected woman: Pneumonia, Conjunctivitis (neonatal ophthalmia).

Relates to Key Learning Point #4: List the complications of Chlamydia-infections in newborn. Where Question Content is presented: EDG 2010/Passport to Partner Services – Key Disease Concepts Unit 3, Topic 5, page 2 of 4.

5. Which of the following statements regarding Chlamydia and Gonorrhea are true?
   A. Chlamydia trachomatis, like \textit{N. gonorrhoeae}, infects the urethra and rectum of men and women, and the cervix of women.
   B. PID caused by gonorrhea is more likely to be asymptomatic or minimally symptomatic than is PID caused by chlamydia.
   C. NGU (nongonococcal urethritis) caused by chlamydia is less profuse and less purulent than gonococcal urethritis.
   D. Neonatal opthalmia caused by chlamydia is limited to conjunctivitis.
   E. A, B and C
   F. B, C and D
   G. A, C and D (Correct)
   H. All of the above

Incorrect Answer Response:
- Chlamydial infection and gonorrhea are similar in many ways. Both \textit{C. trachomatis} and \textit{N. gonorrhoeae} infect only columnar or transitional cells. As a result, in the genital area, these microorganisms do infect the urethra and rectum of men and women, and the cervix of women. Largely because of this, both cause similar illnesses, including pelvic inflammatory disease (PID) in women.
- \textit{Chlamydia trachomatis} is more (not less) likely than \textit{N. gonorrhoeae} to cause asymptomatic genital tract infection (up to 80-90 percent of Chlamydia infection in both men and women are asymptomatic). It is true that the discharge of NGU caused by \textit{C. trachomatis}, is typically less profuse and less purulent than that of gonococcal urethritis.
• Unlike gonococcal ophthalmia which can result in ulceration of the eye or blindness, chlamydial infection of the newborn’s eye is limited to the conjunctiva, thereby causing conjunctivitis.

Relates to Key Learning Point #6: Identify the similarities and differences between chlamydial and gonococcal infections. Where Question Content is presented: EDG 2010/Passport to Partner Services – Key Disease Concepts Unit 3, Topic 3, page 3 of 4.

6. Which of the following statements regarding HIV and Chlamydia co-infection is true?
   A. Because of the inflammation of the urethra and cervix caused by Chlamydia, women with Chlamydia are more at risk for contracting HIV than women without a chlamydial infection (Correct)
   B. Persons infected with Chlamydia, unlike persons infected with gonorrhea, experience inflammation of the urethra, increasing the number of red blood cells at these sites, which increases the number of target cells that HIV can use to gain entry into the body
   C. Persons co-infected with Chlamydia and HIV are more likely to transmit either organism, since both are viruses
   D. There is an increased prevalence of Chlamydia shedding in the genital discharge of persons co-infected with Chlamydia and HIV, which makes HIV transmission to sexual partners more efficient

Incorrect Answer Response: Persons infected with chlamydiae, much like persons infected with gonococci, may have inflammation of the urethra or cervix. This inflammation increases the number of white (not red) blood cells at these sites. This, in turn, increases the number of target cells that HIV can use to gain entry into the body, thus increasing susceptibility to HIV infection. The inflammation disrupts the normal, protective barrier that the mucous membranes provide, allowing HIV easier entry into the underlying tissues.

Relates to Key Learning Point #6: Describe the effect of chlamydial infection on HIV transmission.

Where Question Content is presented: EDG 2010/Passport to Partner Services – Key Disease Concepts Unit 3, Topic 5, page 3 of 4.

7. Which of the following best explains why individuals treated for Chlamydia have high chlamydial infection rates several months after treatment.
   A. They do not complete the proper drug therapy
   B. They may be reinfected by existing partners who are infected and not identified and treated
   C. They may become reinfected by new partners who are infected
   D. All of the above (Correct)

Incorrect Answer Response: Why the re-infection rate several months after an initial infection is so high is not completely understood, but is likely due to all of these reasons.

• First, not all persons get, or take, all their antimicrobial pills.
• Second, not all partners are identified and treated, so individuals may simply become re-infected from their existing partners.
• Third, chlamydial infections are so prevalent in younger individuals there is a reasonable chance that even a new partner may already be infected.
• There is also controversy over the existence and prevalence of antimicrobial resistance in *C. trachomatis*. Rare cases of antimicrobial resistance have been described.

Relates to Key Learning Point #7: Identify reasons for subsequent chlamydial infection following proper treatment. Where Question Content is presented: EDG 2010/Passport to Partner Services – Key Disease Concepts Unit 3, Topic 6, page 4 of 6.

8. Which of the following are recommended in CDC’s STD Treatment Guidelines for Chlamydia screening among women?
   A. All sexually active women < 25 years of age should be screened for Chlamydia every two years
   B. Sexually active women over age 25 should be screened for Chlamydia annually if they have risk factors
   C. All men and women treated for chlamydial infection should be re-tested approximately 3 months after treatment is completed
   D. A test of cure should be performed on all women treated for Chlamydia 3-4 weeks after completing therapy.
   E. A, B, and C
   F. B and C (Correct)
   G. A, C, and D
   H. A and B

Incorrect Answer Response:
CDC's Sexually Transmitted Diseases Treatment Guidelines recommendations for chlamydia screening of women include: 1) Annual screening of sexually active adolescent and young women 25 years of age or younger (even if symptoms are not present); 2) annual screening of sexually active older women with risk factors (e.g., a new sex partner or multiple sex partners); and 3) re-screening of men and women with chlamydia three **months** (not three weeks) after treatment is completed.

Relates to Key Learning Point #8: List the current CDC recommendations for Chlamydia screening in women. Where Question Content is presented: EDG 2010/Passport to Partner Services – Key Disease Concepts Unit 3, Topic 4, page 3 of 4.

9. As presented in the module, which of the partners in the following scenario should be referred for examination and possible treatment? On October 24, a Partner Services provider interviewed a 19-year-old male who was referred to the clinic and diagnosed with asymptomatic chlamydia. The patient identified three female sex partners.
   A. Partner A is 18 years old. The patient states he had sex with her at least twice a week for the past two months.
   B. Partner B is 19 years old. The patient states he had sex with her only once at a Labor Day weekend picnic.
   C. Partner C is 20 years old. The patient states she is his former girlfriend. He had sex with her at least twice a week until July 4, but has not seen her since.
   D. A and B (Correct)
E. B and C
F. A and C
G. A, B, and C

Incorrect Answer Response: The referral of sex partners can be accomplished through the Partner Services Provider or by self-referral. All sex partners during the 60 day period before symptoms appeared or before clinical evaluation or treatment should be referred for examination and treatment. Only Partners A and B fell in this window period.

Relates to Key Learning Point #8: Describe Chlamydia case management.
Where Question Content is presented: EDG 2010/Passport to Partner Services – Key Disease Concepts Unit 3, Topic 7, page 2 of 3.