Hepatitis D and E

Examining

1. The Hepatitis D virus (HDV) or delta agent
   a. is a distinct DNA virus that was discovered in the circulation
   b. is an RNA virus that was identified within the liver cell of a patient who had hepatitis C
   c. is a defective RNA virus that is encapsulated by the hepatitis B surface antigen protein coating.
   d. is an RNA virus that was discovered in the stool of a patient with enterically transmitted hepatitis.
   e. is a DNA virus that is seen in the presence of anti-HBsAg but not HBsAg.

2. Regarding an infection with Hepatitis D, all of the following are true EXCEPT
   a. an HDV infection can occur simultaneously with an acute HBV infection.
   b. an acute HDV can occur superimposed upon a chronic hepatitis B infection.
   c. a chronic hepatitis D infection can be superimposed on a chronic hepatitis B infection.
   d. an HDV infection can be superimposed on both hepatitis B and hepatitis C.
   e. the HBV-DNA titer often decreases when an individual becomes infected with HDV.

3. In patients who have a chronic Hepatitis B / Hepatitis D infection, about ______ will ultimately develop cirrhosis.
   a. 15%
   b. 25%
   c. 45%
   d. 55%
   e. 75%

4. Which of the following statements is true?
   a. Patients with chronic Hepatitis D are at higher risk for developing hepatocellular carcinoma compared to being only HBV infected.
   b. Because patients with chronic HBV / HDV progress to cirrhosis slower, the time needed for developing hepatocellular carcinoma is increased.
   c. HDV may somehow promote the development of hepatocellular cancer.
   d. Patients with chronic HBV / HDV infections often progress to cirrhosis quicker than those who are only HBV infected.
   e. Patients with hepatocellular carcinoma are usually HDV positive.

5. To make a diagnosis of Hepatitis D infection
   a. a liver biopsy needs to be performed for detection of the delta antigen.
   b. reverse transcription polymerase chain reaction testing or RT-PCR-HDV can be used to detect the presence of the virus.
   c. a positive IgM anti-HDV always signifies a new infection.
   d. an IgG anti-HDV never develops.
   e. the patient has to be HBsAg negative.

6. If the patient has a positive RT-PCR-HDV test for more than ________, they are assumed to have a chronic HDV infection.
   a. 6 months
   b. 3 months
   c. 6 weeks
7. Regarding the transmission of Hepatitis D
   a. it is similar to that of Hepatitis A, an oral-fecal route
   b. in areas of high concentration, such as the Mediterranean and northern parts of South America, it appears that transmission involves contaminated water
   c. in areas where HDV is not endemic, the primary route of transmission is percutaneous.
   d. transmission of HDV only occurs at the same time HBV transmission occurs
   e. it is similar to that of Hepatitis C, an oral-fecal route

8. Blood and blood products in the United States
   a. are routinely tested for Hepatitis D.
   b. are always tested for Hepatitis B and if absent, there is essentially no risk of transmitting Hepatitis D.
   c. are routinely tested for Hepatitis D, only if the Hepatitis B test is negative.
   d. are only tested for Hepatitis D if positive for Hepatitis C.
   e. are only tested for Hepatitis B if negative for Hepatitis D.

9. Vertical transmission of the Hepatitis D virus from a mother to her child
   a. has been documented; however, the complete significance of this is unknown.
   b. occurs in the first trimester of the pregnancy.
   c. can only occur if the child does not become HBV infected.
   d. when it occurs, it is usually less severe than an HBV infection alone.
   e. cannot be minimized by appropriate immunization of the newborn in cases where a mother is HBsAg positive.

10. The best treatment against HDV
    a. is interferon alpha
    b. is Lamivudine
    c. is Zidovudine
    d. is interferon beta
    e. is prevention.

11. The Hepatitis E virus (HEV)
    a. is a double-stranded DNA virus that was discovered in the circulation
    b. is an RNA virus that was identified within the liver cell of a patient who had hepatitis C
    c. is a defective RNA virus that is encapsulated by the hepatitis B surface antigen protein coating.
    d. is a single-stranded RNA virus that was discovered in the stool of a patient with enterically transmitted Non-A, Non-B hepatitis.
    e. is a DNA virus that is seen in the presence of anti-HBsAg but not HBsAg.

12. Hepatitis E
    a. has a long incubation of 8 to 10 months with a mean of 25 weeks.
    b. has a short incubation of 4 to 10 weeks with a mean of 40 to 45 days.
    c. has a short incubation of 4 to 10 days.
    d. has a long incubation of 6 to 8 months with a mean of 7 months.
    e. has a varying incubation period of 2 weeks up to 10 months.

13. Regarding Hepatitis E, seroprevalence studies reveal that
    a. evidence of past infection in groups of individuals from endemic countries is as high as 85% to 95%
    b. in non-endemic countries the rate of past infection ranges from 30% to 40%
    c. many infections are probably sub-clinical, similar to Hepatitis A.
    d. in endemic countries, such as India, this virus is responsible for very few of the acute cases of hepatitis.
    e. knowledge of this virus, from numerous studies, has proven that the majority of individuals who get infected have
14. In making a diagnosis of an acute Hepatitis E virus infection,
   a. Hepatitis A, B and C are only ruled out when testing for HEV is negative.
   b. A positive IgG antibody test means an acute infection.
   c. After the IgG antibody turns positive, it usually becomes negative by a year.
   d. The HEV PCR is the test of choice.
   e. A positive IgM antibody is indicative of acute infection.

15. Regarding the presence of Hepatitis E virus in blood and stool
   a. it seems to occur about 1 to 2 weeks before the onset of clinical symptoms, if symptoms develop.
   b. viral shedding in the stool on average only lasts for about 2 to 4 months.
   c. in rare cases, fecal shedding has been reported to last up to 7 months.
   d. viremia in most cases is still detected for several months after the time of biochemical resolution.
   e. rare cases of viremia have been reported to last for up to 16 months.

16. For Hepatitis E,
   a. when large epidemics of acute HEV occur, the majority of these almost always trace the source to contaminated drinking water.
   b. the most common mode of transmission is percutaneous through illicit IV drug usage.
   c. studies usually show a significant amount of person-to-person transmission.
   d. because an HEV-like virus has been detected in swine, it has been determined that majority of transmissions occur from an animal or insect vector.
   e. transmission through blood and blood products is common because of the prolonged viremia state in patients who are chronic carriers.

17. For Hepatitis E, based on clinically apparent infections, the highest attack rate seems to occur in
   a. newborns.
   b. children between the ages of 1 to 5.
   c. children between the ages of 6 to 10.
   d. young adults between the ages of 15 and 40.
   e. adults over the age of 40.

18. Regarding Hepatitis E in pregnancy,
   a. the attack rate in the pregnant population in endemic countries is equal to that of the non-pregnant population.
   b. the attack rate in the pregnant population in endemic countries is lower than the non-pregnant population.
   c. the newborn risk is minimal unless there is a co-infection with Hepatitis C.
   d. the newborn risk is minimal unless there is a co-infection with Hepatitis B.
   e. the mortality rate is increased, reaching as high as 25% in some studies.

19. Regarding vertical transmission of Hepatitis E,
   a. it primarily only occurs through breast-feeding, not before delivery.
   b. some studies shows strong evidence for transplacental infection.
   c. when it occurs, the newborn is usually unaffected.
   d. it primarily only occurs in the first trimester, not later in the pregnancy.
   e. it can be prevented by administering serum immune globulin.

20. Regarding the treatment of Hepatitis E,
   a. the best approach is the use of Lamivudine.
   b. the best approach is the use of interferon alpha.
   c. at the present time, no treatment has been described other than supportive care.
   d. the best approach is the use of standard immune globulin.
   e. the best approach is the use of the HEV vaccine series.