Virology book Questions
Lectures 4-7
By Hind Shaker Suhwail

اللهم كن لأهل غزة عوناً اللهم إنا لا نملك إلا الدعاء فيارب لا ترد لنا دعاء و لا تخيب لنا رجاء 🤲🍉

Quick note : The phrasing of the questions may not be 100% aligned with what we took, but I tried my best to adjust the options to match what we studied. If something is unclear, don't worry–just keep going.

Herpes pt2

Q1. A 19-year-old female college student has a fever, sore throat, and lymphadenopathy accompanied by lymphocytosis with atypical cells and an increase in sheep cell agglutinins. The diagnosis is most likely

(A) Infectious hepatitis
(B) Infectious mononucleosis
(C) Chickenpox
(D) Herpes simplex infection
(E) Viral meningitis

Q2. Which of the following statements about betaherpesviruses is not true?

(A) They establish latent infections and persist indefinitely in infected hosts.
(B) They are reactivated in immunocompromised patients.
(C) Most infections are subclinical.
(D) They can infect lymphoid cells.
(E) They have short, cytolytic growth cycles in cultured cells.

Q3.Which of the following viruses causes a mononucleosis-like syndrome and is excreted in the urine?

(A) Cytomegalovirus
(B) Epstein-Barr virus
(C) Human herpesvirus 6
(D) Varicella-zoster virus
(E) Herpes simplex virus type 2

Q4 . A 53-year-old woman develops fever and focal neurologic signs. Magnetic resonance imaging shows a left temporal lobe lesion. Which of the following tests would be most appropriate to confirm a diagnosis of herpes simplex encephalitis in this patient?

مفروض السؤال مع بارت ١ لكن سقط سهواً اعذروني

(A) Brain biopsy
(B) Tzanck smear
(C) Polymerase chain reaction assay for viral DNA in cerebro-spinal fluid
(D) Serologic test for viral IgM antibody

Q5. Which of the following tumors is caused by a virus other than Epstein-Barr virus?

(A) Posttransplant lymphomas
(B) Hodgkin disease
(C) Kaposi sarcoma
(D) AIDS-related central nervous system non-Hodgkin lymphomas
(E) Burkitt lymphoma

Q6. The most common congenital infection is caused by

(A) Varicella-zoster virus
(B) Herpes simplex virus type 2
(C) Human herpesvirus 8 (Kaposi sarcoma herpesvirus)
(D) Cytomegalovirus
(E) Parvovirus

Q7. Each of the following statements concerning herpesvirus latency is correct except?

(A) Exogenous stimuli can cause reactivation of latent infection, with induction of symptomatic disease.
(B) During latency, antiviral antibody is not demonstrable in the sera of infected individuals.
(C) Reactivation of latent herpesviruses is more common in patients with impaired cell-mediated immunity than in immunocompetent patients.
(D) Virus can be recovered from latently infected cells by cocultivation with susceptible cells.

Q8. Herpes simplex virus and cytomegalovirus share many features. Which one of the following features is least likely to be shared?

(A) Important cause of morbidity and mortality in the newborn
(B) Congenital abnormalities caused by transplacental passage
(C) Important cause of serious disease in immunosuppressed individuals
(D) Mild or inapparent infection

Q9.Each of the following statements concerning Epstein-Barr virus is correct *except :*

(A) Many infections are mild or inapparent.
(B) The earlier in life primary infection is acquired, the more likely the typical picture of infectious mononucleosis will be manifest.
(C) Latently infected lymphocytes regularly persist after an acute episode of infection.
(D) Infection confers immunity against second episodes of infectious mononucleosis.

Answers : B E A C C D B B B

Rhinoviruses, Coronaviruses, Influenza and parainfluenza

Q1. Which of the following statements about rhinoviruses is correct?

(A) There are three antigenic types.
(B) Amantadine protects against infection.
(C) They do not survive on environmental surfaces.
(D) They are the most frequent causative agent of the common cold.
(E) They share physicochemical similarities with coronaviruses.

Q2. Each of the following statements concerning rhinoviruses is correct except

(A) Rhinoviruses are one of the most frequent causes of the common cold.

(B) Rhinoviruses grow better at 33°C than at 37°C; thus, they tend to cause disease in the upper respiratory tract rather than the lower respiratory tract.

(C) Rhinoviruses are members of the picornavirus family.

(D) The immunity provided by the rhinovirus vaccine is excellent because there is only one serotype.

Q3. A person with asthma has an acute exacerbation with increased lower respiratory illness. A virus is recovered. The isolate is most likely to be which of the following virus types?

(A) Parainfluenza virus

(B) Parechovirus

(C) Rhinovirus

(D) Respiratory syncytial virus

(E) Echovirus

Answer and explanation (c) ; Rhinovirus is the most common cause of acute exacerbations of asthma, particularly in cases associated with increased lower respiratory tract symptoms. It preferentially replicates in the cooler temperatures of the upper respiratory tract but can also contribute to inflammation and worsening of lower respiratory symptoms in individuals with asthma.

Most likely not included !! I just put it in case

Q4. The major barrier to the control of rhinovirus upper respiratory infections by immunization is

(A) The poor local and systemic immune response to these viruses

(B) The large number of rhinovirus serotypes

(C) The side effects of the vaccine

(D) The inability to grow the viruses in cell culture

Q5. A 63-year-old woman develops fever, headache, malaise, myalgia, and cough. It is early in the winter respiratory virus season, and the patient's physician does not know what viruses are present in the community. Which of the following viruses is not a cause of acute respiratory disease?

(A) Influenza virus
(B) Adenovirus
(C) Respiratory syncytial virus
(D) Coronavirus
(E) Rotavirus

Q6.Which of the following statements regarding the prevention and treatment of influenza is correct?

(A) Booster doses of vaccine are not recommended.
(B) Drugs that inhibit neuraminidase are active only against influenza A.
(C) vaccines are available with efficacy up to 90%
(D) The influenza vaccine contains several serotypes of virus.
(E) The virus strains in the influenza vaccine do not vary from year to year

Q7. Which of the following statements about the neuraminidase of influenza virus is not correct?

(A) Is embedded in the outer surface of the viral envelope
(B) Forms a spike structure composed of four identical monomers, each with enzyme activity
(C) Facilitates release of virus particles from infected cells
(D) Lowers the viscosity of the mucous film in the respiratory tract
(E) Is antigenically similar among all mammalian influenza viruses

Q8. Which of the following statements reflects the pathogenesis of influenza?

(A) The virus enters the host in airborne droplets.
(B) Viremia is common.
(C) The virus frequently establishes persistent infections in the lung.
(D) Viral infection does not kill cells in the respiratory tract.

Q9.Which of the following symptoms is not typical of influenza?

(A) Fever
(B) Muscular aches
(C) Malaise
(D) Dry cough
(E) Rash

Q10.The type-specific antigen (A, B, or C) of influenza viruses is found on which viral constituent? Most likely not mentioned

(A) Hemagglutinin
(B) Neuraminidase
(C) Nucleocapsid
(D) Polymerase complex
(E) Major nonstructural protein
(F) Lipid in the viral envelope

Q11. Which of the following statements concerning antigenic drift in influenza viruses is correct?

(A) It results in major antigenic changes.
(B) It is exhibited only by influenza A viruses.
(C) It is caused by frameshift mutations in viral genes.
(D) It results in new subtypes over time.
(E) It affects predominantly the matrix protein.

Q12. A 32-year-old male physician developed a "flulike" syndrome with fever, sore throat, headache, and myalgia. To provide laboratory confirmation of influenza, a culture for the virus was ordered. Which of the following would be the best specimen for isolating the virus responsible for this infection?

(A) Stool
(B) Nasopharyngeal swab
(C) Vesicle fluid
(D) Blood
(E) Saliva

Q13. The principal reservoir for the antigenic shift variants of influenza virus appears to be which of the following? Recall there were Intermediate host in type A…

(A) Chronic human carriers of the virus
(B) Sewage
(C) Pigs, horses, and fowl
(D) Mosquitoes
(E) Rodents

Q14.Each of the following statements concerning the antigenicity of influenza A virus is correct except

(A) Antigenic shifts, which represent major changes in antigenicity, occur infrequently and are caused by the reassortment of segments of the viral genome.
(B) Antigenic shifts affect both the hemagglutinin and the neuraminidase.
(C) The worldwide epidemics caused by influenza A virus are caused by antigenic shifts.
(D) antigenic drift occurs when two different "A" viruses infect the same cell

Q15.Which of the following infectious agents is most likely to cause a pandemic?

(A) Influenza A virus
(B) Streptococcus pyogenes
(C) Influenza B virus
(D) Respiratory syncytial virus
(E) Influenza C virus

Answers : D D C B E D E A E C D B C D A

Rhinoviruses, Coronaviruses, Influenza, Parainfluenza & RSV (Pt.2) & Enteroviruses, Rotaviruses, and caliciviruses

Q1. Picornavirus vaccines have been used for several decades in the prevention of human disease. Which of the following statements is correct?

(A) The live, attenuated poliovirus vaccine produces gastrointestinal tract resistance.
(B) There is an effective killed vaccine against the three major types of rhinoviruses.
(C) The live, attenuated poliovirus vaccine induces protective immunity against the closely related coxsackie B viruses.
(D) None of the available echovirus vaccines should be given to immunocompromised patients.

Q2. One month after school has been let out for the summer, a 16-year-old girl develops fever, myalgia, and headache. An outbreak of an illness with similar symptoms caused by an echovirus is known to be occurring in the community. The primary anatomic site of echovirus multiplication in the human host is

(A) The muscular system
(B) The central nervous system
(C) The alimentary (GI) tract
(D) The blood and lymph system
(E) The respiratory system

Q3. This virus is the most important cause of gastroenteritis in infants and young children. It causes infections that are often severe and may be life threatening, especially in infants.

(A) Echovirus
(B) Norwalk virus
(C) Rotavirus, group A
(D) Orbivirus
(E) Parvovirus

Q4. An outbreak of epidemic gastroenteritis occurred at a wooded summer camp 24 hours after a party for visiting families. Some of the visiting parents also became ill. Samples taken 2 weeks later from the well that was the source of drinking water at the camp were negative for fecal coliforms. The most likely source of the outbreak was

(A) Mosquitoes or ticks, present in high numbers in the area
(B) Contaminated food served at the party
(C) A nearby stream used for fishing
(D) A visiting parent who was developing pneumonia
(E) The swimming pool

Q5.A 20-year-old man was on a 3-week tour of Italy with other college students. One day he abruptly became ill with nausea and vomiting followed 5 hours later by abdominal cramps and watery diarrhea. No fever was noted. Which of these viruses is the most likely cause of the man's illness?

(A) Calicivirus
(B) Rotavirus
(C) Reovirus
(D) Adenovirus
(E) Astrovirus

Q6.Which statement about rotaviral gastroenteritis is false?

(A) The name of the causative agent was suggested by its appearance.
(B) Most of the estimated 600,000 deaths occurring worldwide from this disease are from dehydration.
(C) Most cases of the disease occur in infants and children.
(D) The causative agent infects mainly the stomach.
(E) The disease is transmitted by the fecal–oral route.

Answers : A C C B A D

Human immunodeficiency virus (HIV)

Q1.HIV-1 is classified as a member of the Lentivirus genus in the Retroviridae family. Lentiviruses:

(A) Contain a DNA genome
(B) Cause tumors in mice
(C) Infect cells of the immune system
(D) Have related sequences endogenous in normal cells

Q2.HIV-1 encodes an envelope glycoprotein, gp120. This protein

(A) Causes membrane fusion
(B) Binds to the viral coreceptor on the cell surface
(C) Is highly conserved among different isolates
(D) Fails to elicit neutralizing antibody
(E) Induces chemokine production

Q3.The typical course of an untreated HIV infection extends over 10 or more years. There is usually a long period (clinical latency)between the time of primary HIV infection and the development of AIDS. During this period of clinical latency

(A) HIV is not detectable in the plasma
(B) CD4 cell counts remain unchanged
(C) Virus replicates at a very low rate
(D) Virus is present in lymphoid organs
(E) Neutralizing antibodies are not elicited

Q4. What are the most common symptoms of acute HIV infection?

(A) Rash and sore throat
(B) Fever and malaise
(C) Diarrhea
(D) Jaundice and hepatitis
(E) Neuropsychiatric and behavioral changes

Q5.A 36-year-old nurse suffered a needlestick with blood from anHIV-positive patient. Six months later, the nurse's serum waspositive in an EIA test, gave equivocal results in a repeat EIA test, and was negative by Western blot. The nurse :

(A) Is probably infected with HIV
(B) Is in the window between acute infection with HIV and seroconversion
(C) Is probably not infected with HIV
(D) May be infected with a drug-resistant strain of HIV
(E) May be a long-term nonprogressor

Q6. A 41-year-old HIV-infected male who had refused antiretroviral therapy is diagnosed with Pneumocystis jiroveci infection. This patient

(A) Probably has a CD4 T-cell count below 200 cells/μL
(B) Is at elevated risk for lung cancer
(C) Is not longer a candidate for HAART
(D) Probably has declining levels of plasma viremia
(E) Is unlikely to develop dementia at this stage

Q7.Highly active antiretroviral combination therapy for HIV infection usually includes a protease inhibitor such as saquinavir. Such a protease inhibitor ;

(A) Is effective against HIV-1 but not HIV-2
(B) Seldom gives rise to resistant mutants of HIV
(C) Inhibits a late step in virus replication
(D) Degrades the CD4 receptor on cells
(E) Interferes with virus interaction with coreceptor

Q8. In a person with HIV infection, potentially infectious fluids include all of the following except :

(A) Blood
(B) Saliva visibly contaminated with blood
(C) Urine not visibly contaminated with blood
(D) Genital secretions
(E) Amniotic fluid

Q9. Each of the following statements concerning HIV is correct except

(A) Screening tests for antibodies and nucleic acid are useful to prevent transmission of HIV through transfused blood.
(B) The opportunistic infections seen in AIDS are primarily the result of a loss of cell-mediated immunity.
(C) Zidovudine (azidothymidine) inhibits the RNA-dependent DNA polymerase.
(D) The presence of circulating antibodies that neutralize HIV is evidence that an individual is protected against HIV-induced disease.

Q10. Highly active antiretroviral therapy (HAART) is less than ideal because

(A) It does not eliminate latent HIV infection
(B) Some HIV strains are resistant to it
(C) All of the above
(D) non of the above

Q11. Each of the following statements concerning HIV is correct except

(A) The CD4 protein on the T-cell surface is one of the receptors for the virus.
(B) There is appreciable antigenic diversity in the envelope glycoprotein of the virus.
(C) One of the viral genes codes for a protein that augments the activity of the viral transcriptional promoter.
(D) A major problem with testing for antibody to the virus is its cross-reactivity with human T-lymphotropic virus type 1.

Answers : C B D B C A C C D C D