AIIMS CRE Memory Based Paper (26 February 2025)

Q1. What is the preferred first-line ART regimen for HIV-infected adults?
(a) Zidovudine + Lamivudine + Efavirenz
(b) Tenofovir + Lamivudine + Dolutegravir
(c) Stavudine + Didanosine + Nevirapine
(d) No treatment until CD4 < 200 cells/mm^3
S1. Ans.(b) ✅
Sol. The current guideline recommends Tenofovir + Lamivudine + Dolutegravir as the preferred first-line ART regimen for adults. This combination is potent, safe, and has fewer side effects compared to earlier regimens.

Q2. Which action reduces the risk of mother-to-child transmission of HIV during childbirth?
(a) Stopping ART during labor
(b) Scheduled Cesarean section (LSCS)
(c) Avoiding ART and waiting for delivery
(d) Early weaning of the newborn
S2. Ans.(b) ✅
Sol. A scheduled Cesarean section can reduce the risk of vertical transmission by up to 50%. Continuing ART and LSCS together provide the best protection against HIV transmission from mother to child.

Q3. Which antiretroviral regimen is recommended for newborns exposed to HIV?
(a) Zidovudine alone
(b) Nevirapine alone
(c) Zidovudine + Lamivudine combination
(d) Zidovudine + Lamivudine + Nevirapine combination
S3. Ans.(d) ✅
Sol. For HIV-exposed infants, a combination of Zidovudine, Lamivudine, and Nevirapine is recommended. This triple regimen is more effective in preventing mother-to-child transmission than single-drug prophylaxis.

Q4. What is the duration of ARV prophylaxis for newborns exposed to HIV?
(a) 2 weeks
(b) 4 weeks
(c) 6 weeks
(d) 12 weeks
S4. Ans.(c) ✅
Sol. Prophylaxis with Zidovudine or Nevirapine is given for 6 weeks to HIV-exposed infants. The dose is adjusted according to body weight. This significantly lowers the risk of vertical transmission.

Q5. What is the recommendation for ARV treatment in HIV-positive pregnant women during labor?
(a) Stop ART at delivery
(b) Start ART 12 hours before delivery
(c) Start ART as soon as possible during labor
(d) Only after birth of child
S5. Ans.(c) ✅
Sol. HIV-positive pregnant women should be initiated on ART as early as possible during labor. Zidovudine 300 mg every 3–4 hours is commonly given to reduce transmission risk.

Q6. Which ARV drug is included to prevent mother-to-child transmission during breastfeeding?
(a) Zidovudine
(b) Nevirapine
(c) Efavirenz
(d) Stavudine
S6. Ans.(b) ✅
Sol. Nevirapine is used during breastfeeding to reduce mother-to-child transmission. A single 200 mg dose for the mother and weight-based dosing for infants is effective.

Q7. PEP (Post-exposure prophylaxis) after needle-stick injury should be initiated within:
(a) 1 hour
(b) 24 hours
(c) 72 hours
(d) 7 days
S7. Ans.(c) ✅
Sol. Post-exposure prophylaxis must be started within 72 hours of exposure for maximum effectiveness. Ideally, it should be started within a few hours.

Q8. How long should post-exposure prophylaxis (PEP) be continued after potential HIV exposure?
(a) 7 days
(b) 14 days
(c) 28 days
(d) 3 months
S8. Ans.(c) ✅
Sol. PEP is recommended for 28 days (4 weeks). This duration ensures maximum suppression of viral replication if exposure occurred.

Q9. Which body fluid is most likely to transmit HIV through a needle-stick injury?
(a) Saliva
(b) Sweat
(c) Blood
(d) Tears

S9. Ans.(c) ✅

Sol. Blood is the most common fluid transmitting HIV through needle-stick injury. Saliva, sweat, and tears have negligible risk of transmission.

Q10. Recommended HIV follow-up testing schedule for healthcare workers after needle-stick injury is:
(a) 1 week, 2 weeks, 3 weeks
(b) 1 month, 3 months, 6 months
(c) 2 weeks, 2 months, 5 months
(d) 1 month, 6 months, 12 months

S10. Ans.(b) ✅

Sol. Follow-up HIV testing is recommended at 1 month, 3 months, and 6 months after exposure to detect seroconversion.

Q11. Which statement about post-exposure prophylaxis is true?
(a) It is effective even after 1 month of exposure
(b) It is effective only if started within 72 hours
(c) It has no side effects
(d) It is lifelong

S11. Ans.(b) ✅

Sol. PEP is effective only if initiated within 72 hours. Beyond this period, efficacy drops significantly.

Q12. U=U campaign in HIV/AIDS education emphasizes:
(a) Undetected = Untransmittable
(b) Unaffected = Untransmitted
(c) Untraced = Untreated
(d) Unmeasured = Untransmittable

S12. Ans.(a) ✅

Sol. U=U stands for "Undetectable = Untransmittable," meaning that if a person's viral load is undetectable, they cannot transmit HIV sexually.

Q13. How often should HIV-positive individuals have their viral load tested?
(a) Every month
(b) Every 3–6 months
(c) Every year
(d) Every 5 years

S13. Ans.(b) ✅

Sol. Viral load testing is recommended every 3–6 months to ensure ART effectiveness and to detect treatment failure early.

Q14. What is the primary mode of HIV transmission in adults?
(a) Blood transfusion
(b) Needle sharing
(c) Sexual contact
(d) Mother-to-child transmission
S14. Ans.(c) ✅
Sol. Globally, sexual contact accounts for about 85% of HIV transmission cases in adults. Blood transfusion has near 100% risk but occurs less frequently.

Q15. Which opportunistic infection is most commonly associated with AIDS?
(a) Cholera
(b) Malaria
(c) Tuberculosis
(d) Influenza
S15. Ans.(c) ✅
Sol. Tuberculosis is the most common opportunistic infection associated with AIDS, especially in countries like India where TB is endemic.

Q16. What does the window period in HIV testing refer to?
(a) Time from infection to first symptoms
(b) Time from infection to antibody detection
(c) Time from exposure to ART initiation
(d) Time from ART start to viral suppression
S16. Ans.(b) ✅
Sol. The window period is the time between HIV infection and the detectability of antibodies in laboratory testing, usually 3–12 weeks.

Q17. Which co-infections accelerate HIV disease progression and increase mortality?
(a) Malaria and Dengue
(b) Hepatitis B and Hepatitis C
(c) Cholera and Typhoid
(d) Influenza and Measles
S17. Ans.(b) ✅
Sol. Hepatitis B and C co-infections worsen the progression of HIV by damaging the liver and increasing overall mortality.

Q18. Which laboratory marker is used to monitor ART effectiveness?
(a) Hemoglobin
(b) CD4 count
(c) WBC count
(d) Platelet count

S18. Ans.(b) ✅

Sol. CD4 count is the key marker for monitoring ART effectiveness. A rising CD4 count indicates immune recovery, while declining levels suggest treatment failure.

Q19. Which type of HIV is associated with slower disease progression?

(a) HIV-1

(b) HIV-2

(c) Both HIV-1 and HIV-2

(d) None

S19. Ans.(b) ✅

Sol. HIV-2 is associated with slower disease progression compared to HIV-1. However, HIV-1 is more common globally.

Q20. Which HIV protein is targeted by entry-inhibiting drugs?

(a) gp120

(b) gp41

(c) p24

(d) p17

S20. Ans.(b) ✅

Sol. Entry inhibitors target gp41, a glycoprotein essential for HIV fusion with host cell membranes. Blocking gp41 prevents viral entry into CD4 cells.

Q21. What does a high viral load in an HIV-positive patient indicate?

(a) Effective ART response

(b) Poor prognosis and active viral replication

(c) Complete immune recovery

(d) Latent infection only

S21. Ans.(b) ✅

Sol. A high viral load shows active replication of HIV and poor prognosis. It indicates disease progression and the need to assess ART effectiveness.

Q22. Which of the following is NOT an AIDS-defining condition?

(a) Pneumocystis pneumonia

(b) Toxoplasmosis of the brain

(c) Candidiasis of the esophagus

(d) Streptococcal pneumonia

S22. Ans.(d) ✅

Sol. Streptococcal pneumonia is not considered an AIDS-defining illness. Pneumocystis pneumonia, cerebral toxoplasmosis, and esophageal candidiasis are classic AIDS-defining conditions.

Q23. Which drugs are commonly used in post-exposure prophylaxis (PEP) for HIV?
(a) Zidovudine + Lamivudine
(b) Acyclovir + Lamivudine
(c) Doxycycline + Zidovudine
(d) Chloroquine + Lamivudine
S23. Ans.(a) ✅
Sol. Zidovudine and Lamivudine are the key drugs used in PEP regimens to prevent HIV infection after accidental exposure.

Q24. Which type of cells are the primary target for HIV infection?
(a) B lymphocytes
(b) CD4 T lymphocytes
(c) Natural killer cells
(d) Platelets
S24. Ans.(b) ✅
Sol. HIV primarily attacks CD4 T lymphocytes. A normal CD4 count is 800–1600 cells/μL. A decline in CD4 count leads to immunodeficiency.

Q25. Which HIV protein is involved in integration of viral DNA into host genome?
(a) Protease
(b) Integrase
(c) Reverse transcriptase
(d) gp120
S25. Ans.(b) ✅
Sol. The integrase enzyme helps in inserting viral DNA into the host cell genome, a crucial step in HIV replication.

Q26. Which test is used to detect HIV in newborns?
(a) ELISA antibody test
(b) Western blot
(c) RNA PCR
(d) CD4 count
S26. Ans.(c) ✅
Sol. In newborns, maternal antibodies interfere with ELISA/Western blot. Therefore, RNA PCR testing is used to detect HIV infection.

Q27. Which of the following is a significant risk factor for acquiring HIV infection?
(a) Sharing personal items like razors
(b) Insect bites
(c) Casual contact with HIV-positive person
(d) Unprotected sexual intercourse

S27. Ans.(d) ✅

Sol. The most significant risk factor for HIV infection is unprotected sexual intercourse. Casual contact, insect bites, or sharing razors are not major risk factors.

Q28. Which drug is commonly used in pre-exposure prophylaxis (PrEP) for HIV prevention?

(a) Zidovudine

(b) Tenofovir + Emtricitabine

(c) Efavirenz

(d) Nevirapine

S28. Ans.(b) ✅

Sol. Pre-exposure prophylaxis (PrEP) uses Tenofovir + Emtricitabine to prevent HIV infection in high-risk individuals.

Q29. Which statement is true regarding HIV-1 and HIV-2?

(a) HIV-2 is more virulent than HIV-1

(b) HIV-1 is more common globally than HIV-2

(c) HIV-2 causes faster disease progression

(d) Both are equally common worldwide

S29. Ans.(b) ✅

Sol. HIV-1 is the predominant type worldwide and causes rapid disease progression. HIV-2 is less common and progresses more slowly.

Q30. Which of the following is a common indicator of acute HIV disease progression to AIDS?

(a) Hypertension

(b) Weight gain

(c) Persistent generalized lymphadenopathy

(d) Increased CD4 count

S30. Ans.(c) ✅

Sol. Persistent generalized lymphadenopathy is a hallmark sign of progression from HIV infection to AIDS, caused by immune system activation.

Q31. Which component of NACP (National AIDS Control Program) helps reduce HIV-related stigma and discrimination?

(a) Providing ART to all HIV-positive individuals

(b) Conducting awareness campaigns

(c) Developing new HIV vaccines

(d) Increasing testing centers only

S31. Ans.(b) ✅

Sol. Awareness campaigns are the key strategy under NACP to reduce stigma and discrimination associated with HIV/AIDS.

Q32. What is the key strategy under NACP to prevent mother-to-child transmission of HIV?
(a) Promoting breastfeeding
(b) Condom distribution
(c) Providing ART to pregnant women
(d) Increasing testing centers only
S32. Ans.(c) ✅
Sol. Providing ART to HIV-positive pregnant women is the most effective strategy to prevent mother-to-child transmission of HIV.

Q33. What is a major side effect of Tenofovir?
(a) Hepatotoxicity
(b) Nephrotoxicity
(c) Neurotoxicity
(d) Cardiotoxicity
S33. Ans.(b) ✅
Sol. Tenofovir is known to cause nephrotoxicity (kidney damage). Monitoring renal function is necessary during therapy.

Q34. What is the primary goal of ART in HIV-infected children?
(a) Cure HIV infection
(b) Suppress viral load and maintain immune function
(c) Eliminate antibodies
(d) Prevent malaria co-infection
S34. Ans.(b) ✅
Sol. ART in children aims to suppress viral load, restore immune function, and improve survival—not to cure HIV completely.

Q35. When should ART be started in an HIV-positive child?
(a) Only after symptoms appear
(b) As soon as possible, regardless of symptoms
(c) After age 5 years
(d) Only after CD4 < 200
S35. Ans.(b) ✅
Sol. ART should be initiated as soon as possible in HIV-positive children to prevent disease progression and improve outcomes.

Q36. What is the preferred ART regimen for infants under 3 years old?
(a) Zidovudine + Lamivudine + Nevirapine
(b) Zidovudine + Lamivudine + Lopinavir
(c) Tenofovir + Lamivudine + Efavirenz
(d) Stavudine + Didanosine + Nevirapine

S36. Ans.(b) ✅

Sol. For infants under 3 years, Zidovudine + Lamivudine + Lopinavir/ritonavir is preferred. Tenofovir is not recommended in very young children.

Q37. Which laboratory test is most important for monitoring ART effectiveness in adults?

(a) Hemoglobin

(b) Viral load test

(c) CD4 count

(d) Platelet count

S37. Ans.(c) ✅

Sol. CD4 count is the key test to monitor ART effectiveness in adults. A rise indicates treatment success, while a fall indicates failure.

Q38. What is the CD4 count threshold below which AIDS is diagnosed?

(a) < 800 cells/μL

(b) < 500 cells/μL

(c) < 400 cells/μL

(d) < 200 cells/μL

S38. Ans.(d) ✅

Sol. AIDS is diagnosed when CD4 count falls below 200 cells/μL, along with presence of opportunistic infections.

Q39. Which intervention reduces the risk of HIV transmission from mother to child during childbirth?

(a) Exclusive breastfeeding

(b) Early initiation of ART in labor

(c) Delivery by Cesarean section

(d) Herbal therapy

S39. Ans.(c) ✅

Sol. Cesarean section reduces mother-to-child transmission by up to 50%. Combined with ART, it significantly lowers risk.

Q40. What is the primary goal of post-exposure prophylaxis (PEP)?

(a) To cure HIV infection

(b) To prevent HIV infection after potential exposure

(c) To increase CD4 count immediately

(d) To eliminate HIV antibodies

S40. Ans.(b) ✅

Sol. The goal of PEP is to prevent HIV infection after accidental exposure such as needle-stick injuries or unsafe sex.

Q41. DOTS therapy under tuberculosis control is given for how long in standard cases?
(a) 2 months
(b) 4 months
(c) 6 months
(d) 12 months
S41. Ans.(c) ✅
Sol. DOTS (Directly Observed Treatment, Short-course) therapy for TB is usually given for 6 months. This includes an intensive phase followed by a continuation phase.

Q42. When was DOTS strategy for tuberculosis introduced in India?
(a) 1980
(b) 1993
(c) 1997
(d) 2005
S42. Ans.(c) ✅
Sol. DOTS was launched in India in 1997 under the Revised National Tuberculosis Control Programme (RNTCP). It has since been expanded nationwide.

Q43. What is the normal CD4 T-cell count in healthy adults?
(a) 200–400 cells/μL
(b) 400–800 cells/μL
(c) 800–1600 cells/μL
(d) 1600–2000 cells/μL
S43. Ans.(c) ✅
Sol. A normal CD4 count ranges between 800–1600 cells/μL. Falling below 200 is diagnostic for AIDS.

Q44. What is the normal CD8 T-cell count range?
(a) 100–300 cells/μL
(b) 300–600 cells/μL
(c) 450–750 cells/μL
(d) 800–1200 cells/μL
S44. Ans.(c) ✅
Sol. CD8 T-cell count normally ranges from 450–750 cells/μL. The CD4:CD8 ratio is also important in monitoring HIV.

Q45. What is the typical CD4:CD8 ratio in healthy individuals?
(a) 4:1
(b) 2:1
(c) 1:1
(d) 1:2

S45. Ans.(b) ✅

Sol. Normally, the CD4:CD8 ratio is around 2:1. In HIV infection, this ratio is reversed due to CD4 cell depletion.

Q46. What is the main target cell for HIV entry in the immune system?

(a) CD8 T cells

(b) CD4 T cells

(c) B cells

(d) Neutrophils

S46. Ans.(b) ✅

Sol. HIV primarily infects CD4 T lymphocytes by binding to CD4 receptors and co-receptors (CCR5 or CXCR4).

Q47. Which glycoprotein of HIV binds first to the CD4 receptor on host cells?

(a) gp41

(b) gp120

(c) p24

(d) p17

S47. Ans.(b) ✅

Sol. gp120 binds to CD4 receptors, followed by gp41 which mediates fusion of viral and host membranes.

Q48. Which glycoprotein is targeted by entry inhibitors in HIV treatment?

(a) gp120

(b) gp41

(c) p24

(d) p7

S48. Ans.(b) ✅

Sol. Entry inhibitors block gp41, preventing the fusion of HIV with host cells and stopping viral entry.

Q49. Which protein of HIV is detected in ELISA testing?

(a) p17

(b) p24

(c) gp41

(d) gp120

S49. Ans.(b) ✅

Sol. The p24 antigen is commonly detected in early HIV infection using ELISA tests.

Q50. What is the confirmatory test for HIV diagnosis after ELISA?
(a) Western blot
(b) CD4 count
(c) RNA PCR
(d) Chest X-ray
S50. Ans.(a) ✅
Sol. Western blot is used as the confirmatory test following positive ELISA results to establish HIV infection.

Q51. What is the significance of the window period in HIV testing?
(a) Time between infection and first symptoms
(b) Time between infection and antibody detection
(c) Time from ART initiation to suppression
(d) Time from exposure to CD4 recovery
S51. Ans.(b) ✅
Sol. The window period is the time between infection and antibody detectability in lab tests, usually 3–12 weeks.

Q52. What is the viral marker used to measure early HIV replication?
(a) Hemoglobin
(b) p24 antigen
(c) Platelet count
(d) CD8 count
S52. Ans.(b) ✅
Sol. The p24 antigen is an early marker of HIV infection and appears before antibodies are detectable.

Q53. Which stage of HIV infection is associated with latent infection?
(a) Acute phase
(b) Asymptomatic phase
(c) Symptomatic phase
(d) AIDS
S53. Ans.(b) ✅
Sol. During the asymptomatic phase, HIV remains latent with no symptoms, though viral replication continues slowly.

Q54. Which stage of HIV is characterized by opportunistic infections?
(a) Acute infection
(b) Asymptomatic stage
(c) Symptomatic stage
(d) AIDS stage

S54. Ans.(d) ✅

Sol. In the AIDS stage, CD4 count falls below 200 cells/μL and opportunistic infections such as TB, PCP, and candidiasis appear.

Q55. Which opportunistic infection is considered the most common cause of death in HIV/AIDS?

(a) Malaria

(b) Tuberculosis

(c) Pneumocystis pneumonia

(d) Cryptococcal meningitis

S55. Ans.(b) ✅

Sol. Tuberculosis is the leading cause of death among HIV/AIDS patients, especially in developing countries.

Q56. Which HIV test is used for early detection in infants?

(a) CD4 count

(b) Western blot

(c) RNA PCR

(d) Tuberculin test

S56. Ans.(c) ✅

Sol. RNA PCR is used to detect HIV infection in infants, as maternal antibodies interfere with antibody-based tests.

Q57. What does U=U mean in HIV prevention?

(a) Undetected = Untransmittable

(b) Untraced = Unpreventable

(c) Uninfected = Untreatable

(d) Unnoticed = Uncurable

S57. Ans.(a) ✅

Sol. U=U stands for "Undetectable = Untransmittable," meaning patients with undetectable viral load cannot transmit HIV sexually.

Q58. Which opportunistic infection is strongly associated with CD4 count below 200?

(a) Toxoplasmosis

(b) Pneumocystis jirovecii pneumonia

(c) Tuberculosis

(d) Kaposi's sarcoma

S58. Ans.(b) ✅

Sol. Pneumocystis jirovecii pneumonia (PCP) is common in patients with CD4 count <200 cells/μL. Prophylaxis with cotrimoxazole is recommended.

Q59. Which opportunistic cancer is strongly associated with HIV/AIDS?
(a) Leukemia
(b) Kaposi's sarcoma
(c) Lung cancer
(d) Colon cancer
S59. Ans.(b) ✅
Sol. Kaposi's sarcoma, caused by Human Herpesvirus 8 (HHV-8), is a common malignancy in AIDS patients.

Q60. Which HIV diagnostic method detects viral RNA directly?
(a) ELISA
(b) Western blot
(c) PCR
(d) CD4 count
S60. Ans.(c) ✅
Sol. Polymerase chain reaction (PCR) detects HIV RNA directly and is used for early diagnosis, especially in infants.